

NARM Handbook version 1.3

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The purpose of this document is to:

1. Set out the methodology for calculating relevant funding adjustments and penalties under NARM Funding Adjustment and Penalty Mechanism for electricity transmission, gas transmission, and gas distribution licensees.
2. Provide guidance to electricity transmission, gas transmission, and gas distribution licensees on the following elements of the implementation of the NARM Funding Adjustment and Penalty Mechanism:
 - a. the provision of justification for over-delivery and under-delivery; and
 - b. the treatment of Non-intervention Risk Changes.

Any modifications to this document will be done in accordance with Part C of Special Condition 3.1.

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1. Funding Adjustment and Penalty Calculation Methodology

Section A: Purpose of this Guidance

- 1.1 The Authority will determine the value of adjustments to be made to licensees' allowed revenue in the next price control period (to commence 1 April 2026) under the NARM Funding Adjustment and Penalty Mechanism in accordance with the assessment Methodology set in Sections C-I below.

Section B: Application of this Methodology and modification process

- 1.2 This Methodology applies independently to each Risk Sub-Category.
- 1.3 This Methodology may be amended in accordance with Part C of Special Condition 3.1 (Baseline Network Risk Outputs).

Section C: Baseline Unit Cost of Risk Benefit

- 1.4 The Baseline Unit Cost of Risk Benefit (UCR_{BL}) for each licensee is set out in the licensee's Network Asset Risk Workbook.
- 1.5 The Baseline Unit Cost of Risk Benefit (UCR_{BL}) is calculated in accordance with Formula 1 below in total for gas distribution and for each of the Risk Sub-Categories in electricity and gas transmission.

Formula 1

$$UCR_{BL} = \frac{NXP_{BL}}{NRO_{BL}}$$

Where:

- NXP_{BL} is the total Baseline Allowed NARM Expenditure for the RIIO-2 period as set out in Table 1 of Special Licence Condition 3.1, and
- NRO_{BL} is the total Baseline Network Risk Output as set out in the Network Asset Risk Workbook.

Section D: Licensee's Reported Delivery

- 1.6 On or before 31 October 2026, the licensee is required by Special Licence Condition 3.1 to provide to the Authority a NARM Closeout Report, which includes the licensee's

views of the value of the following terms in total for gas distribution and for each of the Risk Sub-Categories in electricity and gas transmission (units in parentheses):

- (a) NRO_{OR} (R£m): the licensee's Outturn Network Risk Output.
- (b) NXP_{OR} : the total costs incurred by the licensee in delivering its NRO_{OR} (in £m).
- (c) NIR_{OR} (R£m): the total contribution of identified Material Non-Intervention Risk Changes on NRO_{OR} .
- (d) CIO_{OR} (R£m): the Network Risk Outputs from projects that in the licensee's view meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects.
- (e) CIX_{OR} (£m): the licensee's view of the additionally incurred costs or unspent allowances associated with projects that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects.

Section E: The Authority's Delivery Assessment

1.7 Following review and assessment of the licensee's NARM Closeout Report, the Authority will determine values for the following terms in aggregate for gas distribution and for each of the Risk Sub-Categories for electricity transmission and gas transmission (units in parentheses):

- a. NIR_{OD} (R£m): the determined total contribution of identified Material Non-Intervention Risk Changes on the NRO_{OR} .
- b. CIO_{OD} (R£m): the determined Network Risk Outputs from projects that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects. CIO_{OD} is positive in the case of Over-Delivery and negative in the case of Under-Delivery.
- c. CIX_{OD} (£m): the determined efficient additionally incurred costs or unspent allowances associated with each project's full risk output that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects. CIX_{OD} is positive in the case of Over-Delivery and negative in the case of Under-Delivery.
- d. NRO_{OAD} (R£m): the Outturn Network Risk Output adjusted for NIR_{OD} and CIO_{OD} , calculated in accordance with Formula 2:

Formula 2

$$NRO_{OAD} = NRO_{OR} + NIR_{OD} - CIO_{OD}$$

- e. JUS (%):
 - In an over-delivery case (i.e. where $NRO_{OAD} > NRO_{BL}$), JUS is the proportion of over-delivery ($NRO_{OAD} - NRO_{BL}$) the Authority determines to be justified.

- In an under-delivery case (i.e. where $NRO_{OAD} < NRO_{BL}$), JUS is the proportion of under-delivery ($NRO_{BL} - NRO_{OAD}$) the Authority determines to be justified.
- If the Authority determines that the licensee’s delivery is within the deadband (i.e. $[NRO_{BL} * (1 - DB)] < NRO_{OAD} < [NRO_{BL} * (1 + DB)]$) then $JUS = 100\%$. Where DB is the deadband value and has the value for each sector given in Table 1 below.

Table 1 - Deadbands for each sector

Sector	Deadband
ET	2%
GT	5%
GD	5%

- f. NXP_{OAD} (£m): the licensee’s incurred costs (NXP_{OR}) adjusted for CIX_{OD} is calculated in accordance with Formula 3:

Formula 3

$$NXP_{OAD} = NXP_{OR} - CIX_{OD}$$

- g. UCR_{OAD} (R/R£): the adjusted out-turn Unit Cost of Risk Benefit is calculated in accordance with Formula 4:

Formula 4

$$UCR_{OAD} = \frac{NXP_{OAD}}{NRO_{OAD}}$$

- h. UCR_{BLF} (R/R£): the Final Unit Cost of Risk Benefit associated with the baseline portion of delivery.
- i. UCR_{OJF} (R/R£): the Final Unit Cost of Risk Benefit associated with any portion of Over-Delivery (excluding CIO_{OD}) determined to be justified.
- j. UCR_{OUJ} (R/R£): the Final Unit Cost of Risk Benefit associated with any portion of Over-Delivery (excluding CIO_{OD}) determined to be unjustified.
- k. UCR_{UJF} (R/R£): the Final Unit Cost of Risk Benefit associated with any portion of Under-Delivery (excluding CIO_{OD}) determined to be justified.
- l. UCR_{UJU} (R/R£): the Final Unit Cost of Risk Benefit associated with any portion of Under-Delivery (excluding CIO_{OD}) determined to be unjustified.

Section F: Funding Adjustment Calculation

- 1.8 Final allowed expenditure (NXP_{FAC}) will be calculated in aggregate for gas distribution and for each of the Risk Sub-Categories in gas transmission and electricity transmission in accordance with Formula 5.

Formula 5

$$NXP_{FAC} = \sum_{\text{Delivery Element (DE)}} (NRO_{FAC} \times UCR_{FAC}) + CIX_{OD}$$

The values of NRO_{FAC} and UCR_{FAC} will be calculated as per the formula for the relevant delivery scenario given in Table 2. The final allowed expenditure is calculated independently for each relevant delivery element and summed to give the total Final Allowed Expenditure value. The calculation for the baseline element will not change regardless of delivery scenario. The over-delivery and under-delivery elements apply positive or negative adjustments to the baseline allowance figure.

Table 2: NRO_{FAC} and UCR_{FAC} formula for relevant delivery elements

Delivery Element (DE)	Value of NRO_{FAC} for DE	Value of UCR_{FAC} for DE
Baseline	= NRO_{BL}	= $UCR_{BL} - DAF_{BL} \times (UCR_{BL} - UCR_{OAD})$
Justified Under-Delivery	=Minimum [0, $JUS \times (NRO_{OAD} - NRO_{BL})$]	= $UCR_{BL} - DAF_{UJ} \times (UCR_{BL} - UCR_{OAD})$
Unjustified Under-Delivery	=Minimum [0, $(1 - JUS) \times (NRO_{OAD} - NRO_{BL})$]	= $UCR_{BL} - DAF_{UU} \times (UCR_{BL} - UCR_{OAD})$
Justified Over-Delivery	=Maximum [0, $JUS \times (NRO_{OAD} - NRO_{BL})$]	= $UCR_{BL} - DAF_{OJ} \times (UCR_{BL} - UCR_{OAD})$
Unjustified Over Delivery	=0	= $UCR_{BL} - DAF_{OU} \times (UCR_{BL} - UCR_{OAD})$

- 1.9 DAF_{BL} , DAF_{UJ} , DAF_{UU} , DAF_{OJ} , and DAF_{OU} are the applicable Delivery Adjustment Factors (DAFs) for baseline, justified under-delivery, unjustified under-delivery, justified over-delivery, and unjustified over-delivery Delivery Elements respectively. All have a value of 0% (zero) for RIIO-2 for the electricity transmission, gas transmission and gas distribution sectors.

Section G: Interaction with Other Funding Mechanisms

- 1.10 The items allocated to NARM Funding Category A2 as per the Network Asset Risk Workbook are funded under other mechanisms. Any Network Risk Outputs from these projects or activities, if funded under other mechanism, will not count towards the licensee's Outturn Network Risk Output (NRO_{AD}).
- 1.11 Should the items listed no longer be eligible for funding under the original mechanism then, in the event of them being delivered, any Network Risk Outputs from them may count towards the licensee's Outturn Network Risk Output (NRO_{AD}).

Section H: NARM Excluded Price Control Deliverables

- 1.12 The items allocated to NARM Funding Category A3 as per the Network Asset Risk Workbook have been ring-fenced with separate Price Control Deliverables (PCD) and funding. Any Network Risk Outputs from these projects or activities will not count towards the licensee's Outturn Network Risk Output.

Section I: Application of a penalty for under-delivery

- 1.13 A penalty (PEN) will be applied in the case of unjustified under-delivery. The penalty value will be 2.5% of the funding adjustment associated with the unjustified under-delivery, and will be calculated in accordance with Formula 6. No penalty will be applied in other delivery scenarios.

Formula 6

$$PEN = 2.5\% \times (1 - JUS) \times (NXP_{BL} - NXP_{FAC})$$

Section J: Input to the RIIO-3 Price Control Financial Model (PCFM)

- 1.14 The licensee's RIIO-3 allowed revenue will be adjusted, through the RIIO-3 PCFM (or equivalent model), to appropriately reflect the Authority determined values of NXP_{FAC} and PEN.

2. Guidance on the provision of justification for over-delivery and under-delivery

- 2.1 The following guidance provides further clarification on the justification for over-delivery and under-delivery against the BNRO for the gas distribution, gas transmission and electricity transmission sectors. The equivalent arrangements for the electricity distribution sector will be consulted on and decided as part of the RIIO-ED2 process. We may issue supplementary guidance on a sector-specific basis at a later date, if needed.

Guidance for justification of over-delivery and under-delivery

- 2.2 The overall extent of justification for over-delivery and under-delivery will depend on the size of the variation from the BNRO (i.e. the difference between the actual Network Risk Output delivered and the BNRO) and the complexity of the changes in the intervention plan that underpin the variation, including offsetting over-recovery and under-recovery elements and the net impacts. An over-delivery or under-delivery will be defined as material and therefore requiring justification when it is beyond the deadband around the BNRO. For the avoidance of doubt, under- or over-deliveries within the deadband will be classed as non-material and therefore will not require justification.
- 2.3 For some or all of the over-delivery and under-delivery to be considered justified, the licensee must satisfactorily complete all of the following requirements as part of its NARM Closeout Report:
- a. on a project-by-project, programme-by-programme basis, or based on key drivers of the under- or over-delivery, set out the proportion of the over-delivery or under-delivery that it considers to be justified together with supporting rationale.
 - b. provide an explanation of why the factors driving over-delivery/under-delivery could not reasonably have been forecast as part of the price control setting process and been factored into the company's final NARM Business Plan submission. For example, new Health and Safety requirements, the Electricity Safety, Quality and Continuity Regulations (ESQCR), faults, or obsolescence of equipment, or constraints on the ability to carry out work which were outside the licensee's control.

- c. set out the steps that the licensee has taken to provide Ofgem with early notice of the potential over-delivery- or under-delivery, including reference to relevant communications. Such information should be submitted as part of the licensee's annual Regulatory Instructions and Guidance (RIGs) submissions. Where it has not been possible to provide information in the RIGs, or additional context is required, notification letters may also be provided to Ofgem.
 - d. clearly explain and tabulate the changes to its intervention plans from the assumptions supporting the expenditure allowances at Final Determinations that have led to the over- or under-delivery, including:
 - i. additional interventions that have been brought forward from RIIO-3, deferred into RIIO-3, or otherwise led to a change in its intervention plans;
 - ii. explanation of any direct relationships between over- or under-deliveries in particular sub-categories and under- or over-deliveries in others;
 - iii. trading-off of interventions between schemes, programmes of work or types of intervention within sub-categories; and
 - iv. the changes in cost associated with the changes in interventions relative to those in Final Determinations as part of the BNRO and the net change in cost associated with the over-delivery or under-delivery.
 - e. provide rationale for the high-level asset management decision to over-deliver or under-deliver and an explanation of what other options were considered, including:
 - i. an overarching engineering justification;
 - ii. engineering justification papers for the most material changes in the plan at the scheme/project level, asset class or asset category level, or based on programmes of work, including evidence of an appropriate level of stakeholder engagement and views on the changes in NARM output delivery; and
 - iii. an explanation of mitigating actions taken for the potential over-delivery or under-delivery including justification for those actions.
- 2.4 The engineering justification papers should include clear cross-references to the licensee's final RIIO-2 business plan and to Final Determinations, and include cost-benefit analysis in accordance with the RIIO-2 Business Plan and Investment Decision Pack guidance. The engineering justification papers should meet the following requirements:
- a. include options for delivery both in line with the BNRO and with the actual Network Risk Output delivered;

- b. include cost and benefits based on the lifetime of interventions and relevant benefits beyond those captured by the NARM;
- c. explain why the actual Network Risk Output delivered provides a better outcome for consumers than lower/higher levels of delivery, including delivery in line with the BRNO;
- d. explain why the work that led to the over-delivery or under-delivery could not reasonably have been deferred/carried out;
- e. include sensitivity analysis, where suitable, and test and demonstrate the sensitivity of results to the value of key assumptions. The cost benefit analyses (CBAs) should include clear referencing to the licensee's final RIIO-2 business plan and to Final Determinations;
- f. explain and provide relevant references to any interlinkages with the licensee's RIIO-3 business plan;
- g. provide an explanation of any key changes other than asset risk which may have driven the over-delivery/under-delivery such as Health and Safety requirements, ESQCR, faults, obsolescence, or work constraints, together with quantification of the impact of these factors on the Network Risk Output delivery; and
- h. clearly articulate the impact of over-delivery/under-delivery on other areas of work, such as broader PCDs, ODIs, and licence obligations. .

3. Guidance on the treatment of Non-intervention Risk Changes

- 3.1 The following guidance is intended to provide a framework for the treatment of non-intervention risk changes in respect of the gas distribution, gas transmission and electricity transmission sectors. The equivalent arrangements for the electricity distribution sector will be consulted on and decided as part of the RIIO-ED2 process.
- 3.2 For the avoidance of doubt, the guidance provided in this chapter relates to changes to the BNRO only. Non-intervention risk changes related to other assets sit outside of this process and are not required to be reported.

Faster or slower deterioration than forecast

- 3.3 Licensees will be held neutral for faster or slower deterioration than forecast in the BNRO where the change has not been driven by licensee action.

NARM Methodology changes

- 3.4 Non-intervention risk adjustments will only be required where NARM Methodology changes have an impact on the licensee's performance relative to the BNRO. The treatment of consequence of failure methodology changes should be grouped with other consequence of failure changes.

Consequence of failure changes

- 3.5 Consequence of failure changes will be grouped into three categories:
 - a. Parameters that are fixed for the RIIO-2 period for the purpose of the NARM Funding Adjustment and Penalty Mechanism.

For example, system consequences of failure for electricity transmission should be fixed as per the configuration of the network at the time of the submission of the Business Plan, i.e. in December 2019. For these cases, no adjustments need to be applied. However, licensees must still account for changes in these parameters in their decision-making. This should be done based on the position at the time the licensee makes decisions. As long as they have been

appropriately taken into account in decision-making, they will be taken as part of a valid justification for over- or under-delivery, provided other justification criteria (as outlined in Appendix 2) are also met.

- b. Consequence of failure parameters that are variable and where adjustments will be made to ensure neutrality.

For example, there may be changes in financial parameters such as the cost of carbon and the cost of replacement equipment. The impact of these changes should be estimated and adjustments to the Network Risk Output delivered will be made to keep the licensee neutral. This is required for the purposes of normalisation as the BNRO will be set using values for key parameters at that point whereas performance will be measured based on values at different positions in time.

- c. Indirect interventions to reduce the consequence of failure.

These will be treated in the same way as a work substitution to allow some benefit to be retained by the licensee. This means that they will feed through the NARM Funding Adjustment and Penalty Mechanism.

Data cleansing

- 3.6 Licensees will be held neutral for all properly-evidenced data cleansing that has been carried out. However, if data cleansing exceeds a 'defined level' that Ofgem would expect from a licensee that is effectively managing its assets, this may be subject to a case-by-case investigation and appropriate actions taken.
- 3.7 For the avoidance of doubt, any data cleansing would be determined as a change relative to the figure provided when the data item was original inputted into the licensee's asset management systems.

Definition of data cleansing

- 3.8 Data cleansing will be defined as: "The activity of detecting and correcting missing or inaccurate records where correction results in a change to the Asset Register volumes, condition, or criticality data." This includes:

- a. changes in asset volumes due to a measurement, survey or transcription error, e.g. if previous surveys had given overhead line route length at 1.0 km but some volumes had been missed which results in a corrected route length of 1.1 km.
- b. changes in previously reported data due to an error or omission in a previously assessed condition score or other NARM input variable. For example, if an electricity transmission licensee had previously given a transformer a Dissolved Gas Analysis (DGA) score of 150, and, on review, the licensee found that the scoring did not consider a relevant piece of information that was available at the time and should have resulted in a DGA score of 200. Or, if scoring is corrected to enter a previously omitted key component of criticality, such as the number of customers affected for an outage for a particular asset.
- c. transcription errors, e.g. if a physical inspection document had a DGA score of 15 but this was entered into the asset management system used for reporting as a score of 51.
- d. removal of duplicate asset entries.

3.9 For the avoidance of doubt, the definition of data cleansing does not include:

- a. updated asset condition or criticality information as part of a new inspection or survey;
- b. faster or slower deterioration of assets than previously assumed;
- c. installation of new assets or disposals of assets; or
- d. any other change based on new information that was not available at the time the previous assessment was made.

'Defined level'

3.10 For the specific purposes of data cleansing, 'defined level' referred to in paragraph 3.6 above will be taken to mean: "The position where the volume of data cleansing is less than 0.5% of the network company's total NARM asset base in volume terms". This is an indicative figure. The final position should be determined for each sector following further engagement during the RIIO-2 period linked to licensees' regulatory reporting.

Regulatory reporting

3.11 For relevant non-intervention risk changes specified above, where Ofgem will apply adjustments prior to the application of the NARM Funding Adjustment and Penalty

Mechanism, licensees will be expected to report changes as part of their annual RIIO-2 RIGs reporting.

3.12 In providing its reporting, each licensee should provide details of:

- the change;
- the reasons for the change;
- the estimated impact of the change on the Network Risk Output delivery; and
- any associated implications for other delivery.

3.13 For smaller (de minimis) changes (as defined in the RIGs), the details of the estimated aggregate impact should be provided.

4. Clearly identifiable over-delivery and under-delivery

- 4.1 The revised approach to the NARM Funding Adjustment and Penalty Mechanism avoids the need for ex-post project-by-project assessment except in rare cases where a small number of projects are clearly identifiable as driving an over-delivery or under-delivery.
- 4.2 Where a small number of projects/schemes/programmes of work are clearly identifiable as driving an over-delivery or under-delivery, these will be normalised out of the delivered output and cost out-turn and a separate adjustment, more reflective of the relevant outputs and costs, will be made to the final NARM allowance.
- 4.3 The final NARM allowance will then be calculated using the adjusted output delivery (revised to add in justified over-deliveries and remove under-deliveries) and the Unit Cost of Risk Benefit. Where justified, any clearly identifiable projects that have caused an over-delivery or under-delivery will then be added back in.
- 4.4 The qualifying criteria specified below will be considered when determining the values for the terms in Table 3 below for the purpose of implementing the NARM Funding Adjustment and Penalty Mechanism.

Table 3: Clearly identifiable over-delivery and under-delivery terms

Term	Description	Determined By
CIO _{OR}	the Network Risk Outputs from projects that in the licensee’s view meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects. CIO _{OR} is positive in the case of Over-Delivery and negative in the case of Under-Delivery.	Licensee
CIX _{OR}	the licensee’s view of the additionally incurred costs or unspent allowances associated with projects that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects. CIX _{OR} is positive in the case of Over-Delivery and negative in the case of Under-Delivery.	Licensee
CIO _{OD}	the determined Network Risk Outputs from projects that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects. CIO _{OD} is positive in the case of Over-Delivery and negative in the case of Under-Delivery.	Authority
CIX _{OD}	the determined efficient additionally incurred costs or unspent allowances associated with project’s full risk output that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects. CIX _{OD} is positive in the case of Over-Delivery and negative in the case of Under-Delivery.	Authority

Qualifying criteria for consideration as clearly identifiable over-delivery or under-delivery

Clearly identifiable over-delivery

4.5 In order to qualify for consideration as clearly identifiable over-delivery, an over-delivery element must meet the following criteria:

1. Outputs and costs must both be quantifiable and separable from the overall delivery (e.g. a specific project);
2. The over-delivery element must not have been specified within the licensee’s RIIO-2 business plan, or if specified must have been specifically excluded from baseline at Final Determinations;
3. The over-delivery element must not be specified in the A3 Funding Category and

4. The over-delivery element must have an outturn UCR greater than a specified upper-threshold, or less than a specified lower-threshold value¹.

Clearly identifiable under-delivery

- 4.6 In order to qualify for consideration as clearly identifiable under-delivery, an under-delivery element must meet the following criteria:
 1. Outputs and costs must both be quantifiable and separable from the overall under-delivery (e.g. a specific project);
 2. The under-delivery element must have been specified within the licensee's RIIO-2 business plan and included in baseline at Final Determinations;
 3. The under-delivery element must not be specified in A3 Funding Category; and
 4. The under-delivery element must have a UCR greater than a specified upper-threshold, or less than a specified lower-threshold value¹.

¹ The upper and lower threshold values to be specified in future version of this Handbook.

Appendix 1 NARM Glossary

- 1.1. 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.

Table 4 – NARM General Definitions

Term	Definition
Baseline Allowance	The allowed expenditure associated with the Baseline Network Risk Output.
Baseline Network Risk Output	The total Network Risk Output that a network company has been funded to deliver through its RIIO-2 baseline, excluding Network Risk Outputs associated with other mechanisms or PCDs.
Baseline Unit Cost of Risk Benefit (UCR_{BL})	The Unit Cost of Risk Benefit derived from Baseline Network Risk Output and associated baseline allowance values.
Delivery Adjustment Factor (DAF)	A proportion of the difference between Baseline Unit Cost of Risk Benefit and Outturn Unit Cost of Risk Benefit. DAF can have a value of between 0% and 100%.
Final Unit Cost of Risk Benefit (UCR_{FAC})	The Unit Cost of Risk Benefit applied to a network company's adjusted Outturn Network Risk Output to calculate its final allowance.
Monetised Risk	A risk value associated with a NARM Asset(s) as derived in accordance with the relevant network company's Network Output Measures (NOMs) methodology or NARM Methodology. Unless otherwise stated, reference to 'Risk' in a NARM context means 'Monetised Risk'.
Monetised Risk Benefit	Analogous to Network Risk Output.
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 Delivery	The forecast or outturn delivery of Network Risk Outputs.

Term	Definition
NARM Funding Adjustment and Penalty Mechanism	The mechanism for adjusting a network companies' funding to reflect the Network Risk Outputs delivered during RIIO-2, and for applying penalties in certain delivery scenarios. This mechanism takes account of, among other things, the outturn level of Network Risk Output delivered in RIIO-2 relative to a companies' Baseline Network Risk Outputs.
NARM Funding Category	Broad categorisation used to indicate scope of NARM Funding Adjustment and Penalty Mechanism and interaction with other mechanisms. A1 – NARM Funding Adjustment and Penalty Mechanism A2 - Funding Under a Separate Mechanism A3 - Ring-fenced Project/Activity B - Non-NARM Assets
NARM Methodology	Means the methodology (sector or company specific) for the Network Asset Risk Metric. The NARM Methodology and NOMs Methodology are equivalent until the former is superseded by the latter from the start of RIIO-2.
NARM Target	Analogous to Baseline Network Risk Output.
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: <ul style="list-style-type: none"> • is the difference between without intervention and with intervention Monetised Risk; • can be measured over one year or over a longer period of time; and • includes both direct (i.e. on the asset itself) and indirect (i.e. on adjacent assets or on the wider system) risk benefit.
NOMs Incentive Mechanism	The RIIO-1 mechanism for adjusting a network company's RIIO-1 funding dependent on its delivery of its NOMs Targets and for applying a reward or penalty in certain delivery scenarios.

Term	Definition
NOMs Methodology	The RIIO-1 Methodology (sector- or company specific) used for deriving Monetised Risk and Monetised Risk Benefit values. The NOMs Methodology will be superseded by the NARM Methodology for RIIO-2.
NOMs Target	The required outputs related to relevant asset management work for each network company in RIIO-1.
Outturn Network Risk Output	The ex post assessed Monetised Risk Benefit delivered during RIIO-2 through a network companies asset interventions and suitable for assessment of overall delivery against Baseline Network Risk Outputs.
Outturn Unit Cost of Risk Benefit	A Unit Cost of Risk Benefit derived from a network company's Outturn Network Risk Output and outturn associated cost values.
Risk Sub-Category	<p>A subdivision of Baseline Network Risk Output.</p> <ul style="list-style-type: none"> • Electricity Transmission – 7 Risk Sub-Categories equivalent to the seven lead asset categories (Circuit Breaker, Overhead Line Conductor, Overhead Line Fittings, Overhead Line Tower, Reactor, Transformer, Underground Cable). An ETO project allocated to a Risk Sub-Category according to the asset category delivering the highest risk benefit. • Gas Transmission – 3 Risk Sub-Categories (Low, Medium, and High). Interventions are allocated to Risk Sub-Category according to the average Unit Cost of Risk Benefit they deliver. • Gas Distribution – no subdivision of BNRO. <p>The NARM Funding Adjustment and Penalty Mechanism operates independently for each Risk Sub-Category.</p>
Risk Pound (R£)	The unit used to denote Monetised Risk values. R£ is used to differentiate from financial monetary values. However, provided methodologies for deriving monetised risks have been properly calibrated then Risk Pounds can be considered like-for-like with other monetary costs and benefits.
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 asset population or intervention volume.

Appendix 2 Worked Examples: NARM Funding Adjustment and Penalty Calculations

1.1. The following are simplified worked examples to illustrate the main aspects of applying the NARM Funding Adjustment and Penalty Mechanism Methodology set out in Chapter 1 above. These worked examples do not form part of the Methodology.

Over-delivery scenario 1

1.2. In this scenario the licensee has over-delivered Network Risk Outputs and over-spent compared to its baseline allowed expenditure. For simplicity of illustration, only the final parameter values determined by the Authority are given. The licensee's submitted values are not shown.

1.3. The following values were set at RIIO-2 Final Determination.

Term	Description	Value
NXP_{BL}	the total Baseline Allowed NARM Expenditure for the RIIO-2 period	£10.0m
NRO_{BL}	the total Baseline Network Risk Output	R£20.0m
UCR_{BL}	Baseline Unit Cost of Risk $UCR_{BL} = \frac{NXP_{BL}}{NRO_{BL}}$	0.5 £/R£
DB	Deadband around Baseline Network Risk Output <u>Deadband Output Range:</u> [$NRO_{BL} * (1 - DB)$] < NRO_{OAD} < [$NRO_{BL} * (1 + DB)$]	±5% £19m to £21m
DAF	Delivery Adjustment Factor Set at 0% for every delivery element	0%
Penalty Rate	Penalty rate for unjustified under-delivery	2.5%

The Authority's assessment of delivery and determination of final values

1.4. Following review of the licensee's submission and other relevant information, the Authority has determined the following values.

Term	Description	Value
NIR _{OD}	Contribution of Non-Intervention Risk Changes	0
CIO _{OD}	The Network Risk Outputs from projects that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects	0
CIX _{OD}	the determined efficient additionally incurred costs or unspent allowances associated with Clearly Identifiable Over-Delivery or Under-Delivery projects	0
NRO _{OAD}	the Outturn Network Risk Output adjusted for NIR _{OD} and CIO _{OD} Delivery of R£22.0m equates to an <u>over-delivery</u> of R£2m (NRO _{OAD} – NRO _{BL}).	R£22.0m
JUS	The proportion of justified over-delivery. The licensee has delivered R£22.0m, which is outside of the deadband range (R£19.0m to R£21.0m) and therefore not automatically deemed to be justified. The Authority has determined that 75% of the total £2m over-delivery has been justified.	75%
NXP _{OAD}	the licensee's incurred costs (NXP _{OR}) adjusted for CIX _{OD} $NXP_{OAD} = NXP_{OR} - CIX_{OD}$	£12m
UCR _{OAD}	the adjusted out-turn Unit Cost of Risk Benefit $UCR_{OAD} = \frac{NXP_{OAD}}{NRO_{OAD}} = \frac{£12.0m}{R£22.0m}$	0.55 £/R£

Final allowed expenditure calculation

- 1.5. The final allowed expenditure is calculated for each relevant delivery element in accordance with the formulae in Table 2 of Chapter 1 as follows:

Delivery Element (DE)	NRO_{FAC}	UCR_{FAC}	Final Allowed Expenditure ($NRO_{FAC} \times UCR_{FAC}$)
Baseline	$= NRO_{BL}$ $= £20.0m$	$= UCR_{BL} - DAF_{BL} \times (UCR_{BL} - UCR_{OAD})$ $= 0.5 \text{ £/R£}$	$= R£20.0m \times 0.5 \text{ £/R£}$ $= £10m$
Justified Under-Delivery	Not relevant	Not relevant	Not relevant
Unjustified Under-Delivery	Not relevant	Not relevant	Not relevant
Justified Over-Delivery	$= \text{Maximum } [0, JUS \times (NRO_{OAD} - NRO_{BL})]$ $= 75\% \times £2m$ $= £1.5m$	$= UCR_{BL} - DAF_{OJ} \times (URC_{BL} - UCR_{OAD})$ $= 0.5 - 0\% \times (0.5 - 0.55)$ $= 0.5 \text{ £/R£}$	$= £1.5m \times 0.5 \text{ £/R£}$ $= £0.75m$
Unjustified Over-Delivery	$= 0$	$= UCR_{BL} - DAF_{OU} \times (URC_{BL} - UCR_{OAD})$ $= 0.5 - 0\% \times (0.5 - 0.55)$ $= 0.5 \text{ £/R£}$	$= £0.0m \times 0.5 \text{ £/R£}$ $= £0.0m$
Total (NXP_{FAC})	$NXP_{FAC} = \sum_{DE} (NRO_{FAC} \times UCR_{FAC}) + CIX_{OD}$ $CIX_{OD} = 0 \text{ in this example.}$		$= £10.0m + £0.75m$ $= \text{£10.75m}$

1.6. The licensee's Final Allowed Expenditure (NXP_{FAC}) in this example is £10.75m. As the licensee spent £12.0m in delivering its Network Risk Outputs, it has over-spent by £1.25m. This £1.25m will be subject to the Totex Incentive Mechanism (TIM).

Penalty calculation

1.7. A penalty only applies in the case of unjustified under-delivery and is therefore not applicable in this scenario.

Under-delivery scenario 1

- 1.8. In this scenario the licensee has under-delivered Network Risk Outputs and under-spent compared to its baseline allowed expenditure. For simplicity of illustration, only the final parameter values determined by the Authority are given. The licensee's submitted values are not shown.
- 1.9. The following values were set at RIIO-2 Final Determination.

Term	Description	Value
NXP_{BL}	the total Baseline Allowed NARM Expenditure for the RIIO-2 period	£10.0m
NRO_{BL}	the total Baseline Network Risk Output	R£20.0m
UCR_{BL}	Baseline Unit Cost of Risk $UCR_{BL} = \frac{NXP_{BL}}{NRO_{BL}}$	0.5 £/R£
DB	Deadband around Baseline Network Risk Output Deadband Output Range: [$NRO_{BL} * (1 - DB)$] < NRO_{OAD} < [$NRO_{BL} * (1 + DB)$]	±5% £19m to £21m
DAF	Delivery Adjustment Factor Set at 0% for every delivery element	0%
Penalty Rate	Penalty rate for unjustified under-delivery	2.5%

The Authority's assessment of delivery and determination of final values

- 1.10. Following review of the licensee's submission and other relevant information, the Authority has determined the following values.

Term	Description	Value
NIR_{OD}	Contribution of Non-Intervention Risk Changes	0
CIO_{OD}	The Network Risk Outputs from projects that meet specified criteria for Clearly Identifiable Over-Delivery or Under-Delivery projects	0

Term	Description	Value
CIX _{OD}	the determined efficient additionally incurred costs or unspent allowances associated with Clearly Identifiable Over-Delivery or Under-Delivery projects	0
NRO _{OAD}	the Outturn Network Risk Output adjusted for NIR _{OD} and CIO _{OD} Delivery of R£18.0m equates to an <u>under-delivery</u> of R£2m (NRO _{OAD} – NRO _{BL}).	R£18.0m
JUS	The proportion of justified under-delivery. The licensee has delivered R£18.0m, which is outside of the deadband range (R£19.0m to R£21.0m) and therefore not automatically deemed to be justified. The Authority has determined that 75% of the total £2m under-delivery has been justified.	75%
NXP _{OAD}	the licensee’s incurred costs (NXP _{OR}) adjusted for CIX _{OD} $NXP_{OAD} = NXP_{OR} - CIX_{OD}$	£8m
UCR _{OAD}	the adjusted out-turn Unit Cost of Risk Benefit $UCR_{OAD} = \frac{NXP_{OAD}}{NRO_{OAD}} = \frac{£8.0m}{R£18.0m}$	0.44 £/R£

Final allowed expenditure calculation

1.11. The final allowed expenditure is calculated for each relevant delivery element in accordance with the formulae in Table 2 of Chapter 1 as follows:

Delivery Element (DE)	NRO _{FAC}	UCR _{FAC}	Final Allowed Expenditure (NRO _{FAC} x UCR _{FAC})
Baseline	=NRO _{BL} = £20.0m	= UCR _{BL} - DAF _{BL} x (UCR _{BL} - UCR _{OAD}) = 0.5 £/R£	= R£20.0m x 0.5 £/R£ = £10m
Justified	=Minimum [0, JUS x	= UCR _{BL} - DAF _{UJ} x	= -R£1.5 x 0.5 £/R£

Delivery Element (DE)	NRO_{FAC}	UCR_{FAC}	Final Allowed Expenditure (NRO_{FAC} x UCR_{FAC})
Under-Delivery	$(NRO_{OAD} - NRO_{BL})$ $= 75\% \times -R£2m$ $= -R£1.5m$	$(UCR_{BL} - UCR_{OAD})$ $= 0.5 - 0\% \times (0.5 - 0.44)$ $= 0.5 \text{ £/R£}$	$= -£0.75$
Unjustified Under-Delivery	$= \text{Minimum } [0, (1 - JUS) \times (NRO_{OAD} - NRO_{BL})]$ $= 25\% \times -R£2m$ $= -R£0.5m$	$= UCR_{BL} - DAF_{UU} \times (UCR_{BL} - UCR_{OAD})$ $= 0.5 - 0\% \times (0.5 - 0.44)$ $= 0.5 \text{ £/R£}$	$= -R£0.5 \times 0.5 \text{ £/R£}$ $= -£0.25$
Justified Over-Delivery	Not relevant	Not relevant	Not relevant
Unjustified Over-Delivery	Not relevant	Not relevant	Not relevant
Total (NXP_{FAC})	$NXP_{FAC} = \sum_{DE} (NRO_{FAC} \times UCR_{FAC}) + CIX_{OD}$ <p>CIX_{OD} = 0 in this example.</p>		$= £10.0m - £0.75m - £0.25m$ $= \textbf{£9.0m}$

1.12. The licensee’s Final Allowed Expenditure (NXP_{FAC}) in this example is £9.0m. As the licensee spent £8.0m in delivering its Network Risk Outputs, it has under-spent by £1.0m. This £1.0m will be subject to the Totex Incentive Mechanism (TIM).

Penalty calculation

1.13. The penalty is applied to the unjustified portion of under-delivery:

$$PEN = 2.5\% \times (1 - JUS) \times (NXP_{BL} - NXP_{FAC})$$

$$PEN = 2.5\% \times (1 - 75\%) \times (£10.0m - £9.0m)$$

$$PEN = £6.25k$$

1.14. The licensee incurs a penalty of £6,250 in this scenario.