Decision

RIIO-ED2 Final Determinations Finance Annex

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The next electricity distribution price control (RIIO-ED2) will cover the five-year period to 31 March 2028. In December 2021 the Distribution Network Operators (DNOs) submitted their Business Plans to Ofgem setting out proposed expenditure for RIIO-ED2. We assessed these plans and published our consultation on the Draft Determinations in June 2022.

Following consideration of consultation responses, this document and others published alongside it, set out our Final Determinations for companies under the RIIO-ED2 Price Control, which will commence on 1 April 2023.

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1. Introduction

Errata

This revised version of the Finance Annex contains two new appendix tables since the original 30 November 2022 publication of the Finance Annex: (a) Appendix 8 Revised financial values for electricity distribution networks, and (b) Appendix 9 Revised totex reconciliation. These tables incorporate the effects of errata changes in other Final Determinations documents and align to the values used in the Price Control Financial Model for the 3 February 2023 decision on the proposed modifications to the RIIO-2 electricity distribution licences.

We have not revised the core content of this annex because the errata have little impact on the values and do not change the resulting determinations. Similarly, we have kept the original appendices for reference because the 30 November 2022 version aligns to some policy values such as incentive rates and caps.

Background to the RIIO-ED2 Price Control

1.1 The next electricity distribution price control (known as RIIO-ED2) will cover the five-year period from 1 April 2023 to 31 March 2028. This document sets out our Final Determinations on our core methodology and how these have been applied to the finance proposals common to all Distribution Network Operators (DNOs).

1.2 We began the development process for RIIO-ED2 in August 2019 with an open letter[1], setting out the context and aims for the price control. We subsequently confirmed our RIIO-ED2 Framework Decision in December 2019[2]. In July 2020, we published our Sector Specific Methodology Consultation (SSMC)[3] on the detailed sector methodology that we proposed to apply to this framework and to help set the price control. We then confirmed our Sector Specific Methodology Decisions (SSMD)[4] with the publication of the Finance Annex in March 2021. Finally, we laid out our RIIO-ED2 Draft Determinations in June 2022[5].

[1] RIIO-ED2 Open Letter, https://www.ofgem.gov.uk/sites/default/files/docs/2019/08/open_letter_consultation_on_the_riio-ed2_price_control.pdf
[2] RIIO-ED2 Framework Decision, https://www.ofgem.gov.uk/sites/default/files/docs/2019/08/open_letter_consultation_on_the_riio-ed2_price_control.pdf
[3] RIIO-ED2 SSMC Finance Annex, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf
[4] RIIO-ED2 SSMD Finance Annex, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf
[5] RIIO-ED2 Draft Determinations, https://www.ofgem.gov.uk/sites/default/files/2022-06/RIIO-ED2%20Draft%20Determinations%20Finance%20Annex.pdf

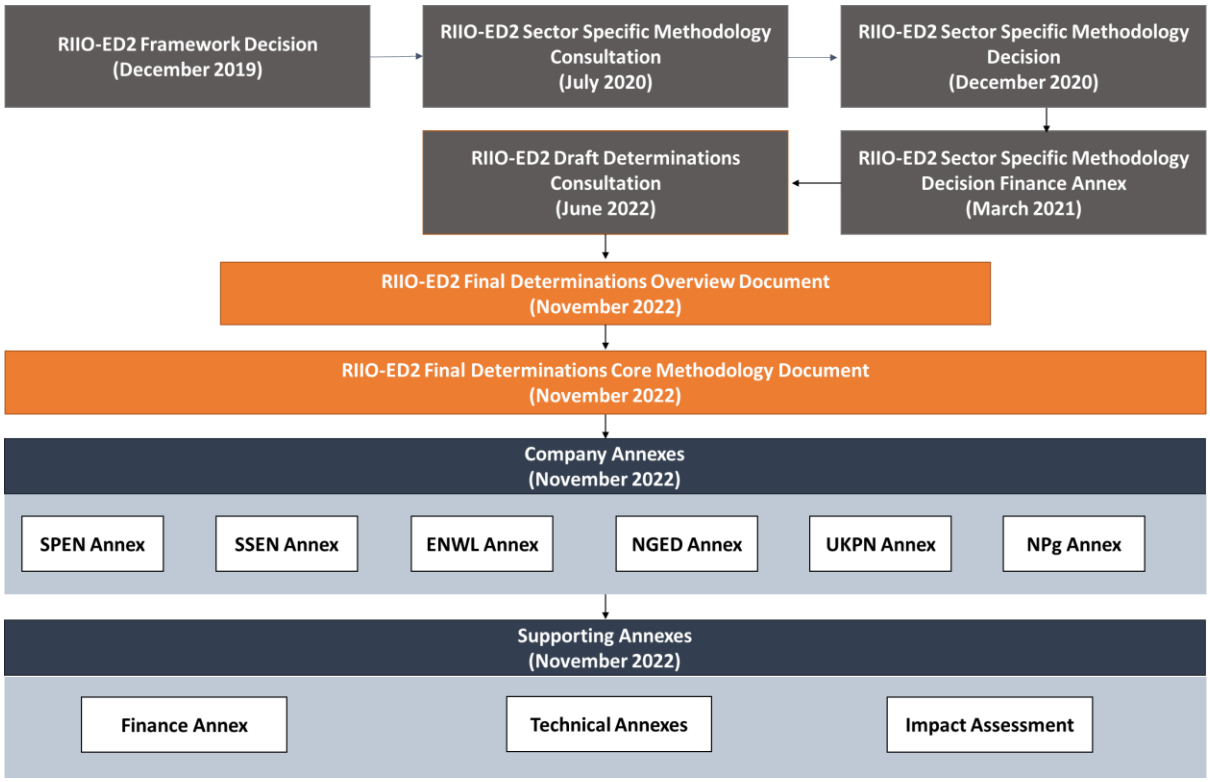
1.3 RIIO-ED2 is separate from the other price controls that apply to the Gas Distribution and Transmission sectors that run from 1 April 2021 to 31 March 2026 (RIIO-GD&T2). However, stakeholders will find that where issues overlap, our approach to RIIO-ED2 is similar to RIIO-GD&T2, and we have applied the lessons and learnings from RIIO-GD&T2 in our approach and decisions for RIIO-ED2. We have also carefully considered where RIIO-ED2 should differ from RIIO-GD&T2 and weighed up evidence presented by stakeholders about how we should approach these differences.

1.4 Our SSMD provided the framework for the DNOs to develop their RIIO-ED2 Business Plans. The DNOs submitted their final Business Plans to Ofgem on 1 December 2021 and these were published on company websites.

1.5 In June 2022 we published our Draft Determinations for consultation. The consultation closed on 25 August 2022. We have carefully considered all stakeholder responses to the consultation in reaching these Final Determinations.

1.6 Our Final Determinations document suite is set out in Figure 1. This document is the Finance Annex and contains our Final Determinations decisions on the regulatory finance building blocks of RIIO-ED2. In general, these apply across all DNOs. Company-specific considerations have been identified, where relevant.

Figure 1: Navigating the RIIO-ED2 Final Determinations documents



1.7 In response to the Draft Determinations, we also received 16 consultancy reports on finance issues. These reports are summarised in Table 1 below.

Table 1: Debt and Financeability focussed consultancy reports we received

Report	Author	Prepared for	Report Date	Report reference
D1	KPMG	ENWL	Aug-22	Analysis of infrequent issuer premium at RIIO-ED2
D2	Centrus	ENWL	Aug-22	RIIO-ED2 | ENWL 2038 Inflation Linked Derivatives and Counterfactual Analysis
D3	KPMG	ENWL	Aug-22	An assessment of risk allocation implied by the cost of debt allowance in RIIO-ED2
D4	Oxera	SSEN	Aug-22	Financeability of the RIIO-ED2 Draft Determinations
D5	Frontier	ENA	Aug-22	Inverse Inflation Exposure
D6	PA	ENA	Aug-22	Assessment of the capitalisation rate applied to uncertainty mechanisms in the RIIO-ED2 Draft Determinations

Table 2: Equity focussed consultancy reports and research we received

Report	Author	Prepared for	Report Date	Report reference
E1	Oxera	SSEN	Aug-22	Traded yield spreads of water and energy networks
E2	Imrecon	SSEN	Aug-22	Reframing our understanding of risk in regulated energy networks
E3	Oxera	SSEN	Mar-22	Assessing the risks of GB energy networks
E4	Frontier	ENA	Aug-22	RIIO-ED2 Cost of Equity Cross-checks
E5	NGED (WPD)	NGED (WPD)	Aug-22	Use of Uncertainty Mechanisms as part of RIIO-ED2 Draft Determinations

E6	Oxera	ENA	Aug-22	Market-to-asset ratios as a cost of equity cross-check
E7	Oxera	ENA	Aug-22	Assessing the new ONS CPIH back-cast
E8	Oxera	ENA	Aug-22	Cost of equity in RIIO-ED2 Draft Determinations
E9	Frontier	NGED (WPD)	Aug-22	Cost of equity – Response to RIIO-ED2 Draft Determinations
E10	Oxera	ENA	Aug-22	RIIO-ED2 balance of risks

1.8 In Appendix 2 and Appendix 3, we provide a point-by-point analysis of the main issues raised in these reports. To further understand the issues raised, we held bilateral meetings with the DNOs and other stakeholders.

1.9 Alongside this Finance Annex we have published supporting technical annexes, as listed in Table 3.

Table 3: Technical annexes published alongside this finance document

File	Author	File name	Purpose
1	Ofgem	RIIO-ED2 Enduring PCFM	Forecasts of allowed revenues for Electricity Distribution licensees during the RIIO-ED2 price control
2	Ofgem	RIIO-ED2 FDs Analytical PCFM	Forecasts of allowed revenues and financial metrics for Electricity Distribution licensees used for Final Determinations
3	Ofgem	Gridlines Audit Letter	A letter from Gridlines to summarise its review of the RIIO-ED2 PCFM
4	Ofgem	WACC Allowance Model	Presents our proposed implementation approach for debt and equity indexation during RIIO-ED2

2. Allowed return on debt

Setting a baseline allowance for the cost of debt

Purpose	To provide a reasonable allowance for debt costs that updates annually to reflect changes in market conditions.
Benefits	Providing an allowance that references an appropriate index retains incentive properties for networks to minimise their debt costs, which over time feeds through into lower costs for consumers. Adjusting for market rate movements protects both consumers and networks from ex ante forecast error.

Final Determination summary

2.1 The table below provides a summary of our Final Determination.

Parameter	**Final Determination (FD)**	**Draft Determination (DD)**
Index selection	To index the cost of debt allowance with reference to the yield of the iBoxx GBP Utilities 10yr+ index (ISIN reference DE0005996532).	Same as FD
Additional costs of borrowing	To add 0.25% to the index above for additional borrowing costs.	Same as FD
Infrequent issuer premium	To add 0.06% for those borrowers issuing less than £250m per annum on a notional licensee basis; this will apply for eleven licensees (all except SSES, NGED EMID and UKPN EPN).	Same as FD, except with a £150m per annum threshold
Calibrating the index – trailing average length	To calculate the allowance using a 17yr trailing average.	Same as FD
Calibrating the index – calibration adjustment	To include a fixed upwards adjustment of 0.55% to the 17yr trailing average[6], excluding additional costs of borrowing.[7]	No calibration adjustment was included

[6] This will remain fixed for the duration of RIIO-ED2.
[7] 0.80% when including 0.25% of additional borrowing costs.

Parameter	Final Determination (FD)	Draft Determination (DD)
Deflating into CPIH real yields	To deflate nominal 'all in' yields for each date of the trailing average to CPIH real yields using the OBR forecast for CPI in 5yrs' time, available for each date, using the Fisher equation. The trailing average of the resulting real yields provides the CPIH real allowed return on debt.	Same as FD
Exceptional cases	No exceptional circumstances or adjustments, beyond the infrequent issuer premium.	Same as FD

2.2 The following tables represent forecast Final Determinations of the cost of debt allowances, based on a 17-year trailing average of the iBoxx GBP Utilities 10yr+ index, plus 55bps upwards adjustment, plus 25bps for additional costs of borrowing, deflated to CPIH real using the long-term OBR forecast for CPI. The second row includes an infrequent issuer premium of 6bps which applies to all licensees except SSES, EMID, and EPN.

Table 4: Forecast cost of debt allowance

Forecast	2023/24	2024/25	2025/26	2026/27	2027/28	Average
17-year trailing average + 55bps calibration adjustment + 25bps additional cost of borrowing	3.04%	3.07%	3.05%	2.99%	2.92%	3.01%
with infrequent issuer premium	3.10%	3.13%	3.11%	3.04%	2.98%	3.07%

Background

2.3 In this section, we set out our decision for setting the cost of debt allowance and address the related issues raised in response to our Draft Determinations (DDs). The cost of debt allowance is an estimation of the return debt investors expect from an efficiently run company (including both embedded debt raised prior to the RIIO-ED2 price control period and new debt raised during the price control period).

2.4 Our intention is to provide a reasonable allowance for debt costs that updates annually to reflect changes in market conditions, based on an appropriate index. Consistent with DDs, we have decided to continue

with full indexation of the allowed return on debt. The allowed return on debt is based on benchmark nominal yields published by Markit iBoxx, over a rolling trailing average period that reflects the costs of both existing and new debt.

2.5 We calibrate the trailing average based on the principle of broadly matching debt allowances with expected efficient debt costs for the electricity distribution sector in RIIO-2. Since DDs, yields on GBP government and corporate debt have risen sharply and exhibited significant volatility. The use of full indexation means that the allowed return on debt moves with outturn rates. We consider that the recent movements in yields show the benefit of an indexation approach.

2.6 We deflate the trailing average of nominal yields from our benchmark index by inflation expectations to obtain a real cost of debt.

2.7 We allow additional costs of borrowing within our final allowance, reflecting those costs that we expect to be efficiently incurred by the notional entity.

Draft Determination responses

2.8 We received nine responses to our consultation question on the cost of debt. These are summarised below.

2.9 Appendix 3 has a summary of the consultant reports on the allowed return on debt and our response to them.

Responses to FQ1: Do you agree with our approach to estimating efficient debt costs and setting allowances for debt costs?

2.10 DNOs (ENWL, SPEN, SSEN, UKPN, NGED) suggested that a 17yr trailing average was insufficient to cover expected electricity distribution industry costs in RIIO-ED2. This was driven by an increase in yields and the absence of sufficient headroom in their view to cover macro-economic scenarios (including on interest rates and inflation). Those DNOs generally proposed increasing the trailing average period. SSEN considered applying an uplift to a 17yr trailing average as an alternative solution. Based on the data available at the time of their DD responses, the DNOs noted above proposed use of a 20yr trailing average. Each of the DNOs quoted 26-29bps of headroom in the base case in the RIIO-GD&T2 determination.

2.11 Multiple DNOs (ENWL, SPEN, SSEN) indicated that the 25bps additional costs of borrowing for DDs was insufficient, although they referenced previous submissions on the topic, rather than providing new evidence[8]. We responded to these points as part of our DDs[9].

[8] SPEN quoted a NERA report on additional borrowing costs from June 2021, where they had proposed 43bps of additional borrowing costs.
[9] RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

2.12 All DNOs indicated that the infrequent issuer premium threshold should be increased to £250m, with different levels of detailed included.[10]

2.13 ENWL disagreed with the proposed approach of setting an overall cost of debt at an industry level. ENWL discussed alternative approaches, including time weighted average and debt sharing approaches.

2.14 ENWL considered that the infrequent issuer premium should apply at the ownership level, not for the individual licensee.

2.15 NPg believed the choice of data used in estimating the cost of debt should be reviewed (around credit wrap and discounts to par on bonds) to ensure that additional costs of borrowing are sufficient.

2.16 One individual respondent agreed with our approach in general but believed the infrequent issuer premium could be applied at the ownership level, not for the individual licensee.

2.17 The RIIO-ED2 Challenge Group supported the general approach taken at DDs but believed the infrequent issuer premium should apply at the ownership level, not for the individual licensee. The Challenge Group also considered that 25bps additional costs of borrowing was overly generous. The Challenge Group was, however, supportive of our rejection of ENWL's proposals for an alternative approach. Citizens Advice considered that the cost of debt allowance was overly generous to the DNOs.

Final Determination and rationale

Index selection

2.18 The DD proposed the use of the iBoxx GBP Utilities 10yr+ index for RIIO-ED2 (ISIN reference DE0005996532)[11]. We considered that the index provided a better match to network debt costs than the non-financial corporate indices used in the RIIO-1 indexation mechanism. The GBP Utilities 10yr+ index includes 84 bonds with a value of £37bn+[12], so we consider this to be a broad and representative index (the composition of the index is consistent with that at DDs).

2.19 Stakeholders did not suggest an alternative index to our preferred index in their DD responses. We have decided that the iBoxx GBP Utilities 10yr+ is the appropriate index to use for RIIO-ED2, as this is a suitable proxy for network debt costs and is a broad representative index.

2.20 The other element to our decision on the selection of the benchmark index is whether to apply any adjustment to the iBoxx benchmark to reflect 'on the day costs'. At DDs, we discussed the concept of the 'halo

[10] For example, ENWL submitted a consultancy report on the infrequent issuer premium, discussed in Appendix 3
[11] RIIO-ED2 Draft Determination - Finance Annex, para 2.13.
[12] As of 14th October 2022.

effect', which covers the ability of network companies to consistently issue debt at rates below the relevant iBoxx benchmark[13].

2.21 We noted that our estimate of the 'halo effect' across an average of industry-wide bonds was 11bps on an unweighted basis, but that the size of the halo effect in more recent years was materially above this long-term average. The size of this halo effect is uncertain and DNOs did not agree with our estimation approach for the halo effect. Any halo effect on embedded debt is captured implicitly as part of our overall calibration exercise, therefore this only applies for new debt. On a weighted basis between embedded and new debt, the impact of the halo effect on electricity distribution sector interest costs should be relatively small.

2.22 As a result, we have decided to not apply any explicit adjustment to the index. However, the presence of a potential halo effect on new debt is considered within our index calibration decision.

Additional costs of borrowing

2.23 In our SSMD and DD, we stated a preference for separate additional borrowing costs and a yield allowance[14]. In DDs, we proposed to include an allowance of 25bps for annual additional borrowing costs. This was based on a bottom-up analysis of additional cost components, with a top-down cross-check of the overall allowance from such an approach. The results of the bottom-up analysis are shown in Table 5.

Table 5: Analysis of additional borrowing costs

Additional cost component	**Ofgem estimate**	**Estimate basis**
Transaction costs	6bps	Based on networks' data, excluding one bond that we considered an outlier.
Liquidity/ Revolving Credit Facilities (RCF) cost	4bps	Based on Regulatory Financial Performance Reporting (RFPR) and group account data, with assumed commitment fee cost.
Cost of carry	10bps	Based on RFPR and group accounts data on cash on balance sheet, with differential cost between debt and cash.
CPIH basis risk mitigation	5bps	Allowances on new debt for CPIH linked costs, with an allowance for risk mitigation on embedded debt costs.

[13] RIIO-ED2 Draft Determination - Finance Annex, paras 2.14-2.17.
[14] RIIO-ED2 SSMD, para 2.35

Additional cost component	Ofgem estimate	Estimate basis
Total	25bps	

2.24 From a top-down perspective, we noted in DDs[15] that an allowance of 25bps for additional borrowing costs is materially higher than the 10bps included in the Competition and Markets Authority's (CMA) PR19 Final Decision on its redetermination for four water companies[16].

2.25 Four DNOs in their responses to DDs have continued to highlight that our proposed additional costs of borrowing are insufficient. The DNOs referenced previous submissions, rather than raising new arguments. Overall, we do not consider that sufficiently compelling evidence has been presented to indicate a need to change our approach or the assumptions we have used, especially given the top-down cross-check we reference in paragraph 2.23. We have, however, updated our evidence base for FDs where new evidence was available.

2.26 We discuss each of the four components of the additional cost of borrowing allowance below in more detail.

Transaction costs

2.27 The allowance for transaction costs reflects both ongoing and up-front costs in relation to debt issuance. The costs include underwriting/ arrangement/ listing fees, rating fees and legal fees.

2.28 No new arguments were presented in response to DDs on transaction costs. We have decided on an allowance of 6bps for transaction costs, as per our DD position, based on evidence previously submitted to us on behalf of DNOs.

Liquidity / Revolving Credit Facility (RCF) cost

2.29 This allowance is associated with the additional costs tied to liquidity and RCFs. Our proposed approach at DDs was to set an allowance based upon RFPR and group account data about actual RCF holdings[17]. We then multiplied this proportion by our estimate of a suitable commitment fee.

2.30 As set out in DDs, we assume that the notional licensee's RCF is not drawn down and that any draw-down costs would be covered through the calibration of the debt allowance. Our approach assumes that companies arrange facilities sized at around 10% of debt balances. DD responses did not provide new evidence on this item. We therefore continue to find that the evidence-based assumption is appropriate for RIIO-ED2 FDs, so we have decided to retain this 10% assumption.

[15] Paragraph 2.20 RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)
[16] CMA Final Report - Redetermination of PR19 determinations, Table 9-31, Final report (publishing.service.gov.uk)
[17] RIIO-ED2 Draft Determination - Finance Annex, para 2.25.

2.31 Our estimate at DDs of a commitment fee was in the range of 35-45bps, as per the RIIO-GD&T2 Final Determinations. We note that a report by NERA on behalf of the Energy Networks Association (ENA) prior to DDs agreed with this range[18]. We have worked closely with industry stakeholders to get an estimate of an efficient commitment fee range and have consulted on this since RIIO-GD&T2. We have decided to take the mid-point of this commitment fee range, namely 40bps, reflecting our best view for the point estimate.

2.32 Our FDs therefore include an allowance of 4bps, based on the two chosen inputs above (i.e. 10% x 40bps).

Cost of carry

2.33 The allowance for the cost of carry covers the issuance of debt ahead of need (i.e. before a return can be earned on the assets that debt finances) to ensure the sufficiency of cash flows to meet operational requirements. At DDs, we consulted on an allowance of 10bps to cover this cost[19].

2.34 There are two inputs into our calculation. First, the proportion of cash on networks' balance sheets reflects finance that has been raised but not invested. We have used RFPR and group account data to establish suitable levels of cash held across networks and network group companies. Second, we assess the resultant cost of carry (expressed in percentage terms). This is based on the five-year average difference between the benchmark iBoxx GBP Utilities 10yr+ index and the three-month cash deposit rate, as per the approach adopted for the RIIO-GD&T2 Final Determinations.

2.35 We have considered evidence from DNOs in RIIO-ED2 and continue to find that this approach is suitable for estimating the cost of carry.

2.36 We consider that adopting a long-dated iBoxx (i.e. 10yr+) index value as the basis for the cost of carry is likely to mitigate risks that the allowance for additional costs is insufficient.

2.37 We have updated our evidence on the spread between the iBoxx index values and the three-month- deposit rate to reflect yields since DDs. This has not changed our estimated range.

2.38 We have decided, as proposed at DDs, to adopt a point estimate from the upper bound of our plausible range (2-10bps). In forming our range, we have had regard to the different levels at which the calculation could be carried out (e.g., group vs. operating level) and the possibility that end-of-year balances may be lower (or higher) than balances at other points during the year. Licensees might also have requirements to hold cash for a longer period, given smaller debt balances.

[18] RIIO-ED2 Draft Determination - Finance Annex, para 2.25.
[19] RIIO-ED2 Draft Determination - Finance Annex, para 2.28.

2.39 Some DNOs have argued that infrequent issuers could face a higher cost of carry. This further supports the use of this upper bound, given our analysis on infrequent issuers at a licensee level (see section below on the infrequent issuance premium).

CPIH basis risk mitigation

2.40 This allowance reflects costs faced in relation to index-linked embedded and new debt, resulting from our decision at the SSMD stage to switch indexation of the Regulatory Asset Value (RAV) from RPI at RIIO-1 to CPIH at RIIO-2[20].

2.41 At DDs, we proposed a total allowance of 5bps[21]. This was made up of 3bps for embedded debt and an allowance of 2bps for new debt.

2.42 The embedded debt allowance was based on the potential cost of mitigating RPI/CPIH basis risk (through swaps) and uses an assumption of 15bps additional cost multiplied by the proportion of index-linked debt (25%) and the implied weight for embedded debt (78%)[22]. The allowance of 2bps for new debt was based on an assumed 30bps additional cost of CPI or CPIH-linked issuance (which has been informed by evidence provided for our RIIO-GD&T2 Final Determinations on the premium at issuance for CPI- and CPIH-linked debt vs. RPI-linked debt) multiplied by the assumed proportion of index-linked debt (25%) and the implied weight for new debt (22%).

2.43 No new evidence was presented by DNOs in their DD responses on the inputs to these cost estimates, though reference was made to their previous submissions. ENWL considered that their own share of index-linked exposure should be considered, with company-specific allowances set. One individual respondent noted that new evidence may be useful in understanding the appropriateness of these estimates.

2.44 We consider that the allowance should be industry-wide, rather than company specific. This is consistent with our approach on additional costs of borrowing and debt calibration. We have not found or been presented with evidence that undermines our assumptions on the additional cost elements of the allowances and consider the evidence we relied on for the DD proposal remains robust. Given this, we have decided to include an allowance of 5bps for CPIH basis risk mitigation, using the methodology proposed at DDs.

Infrequent issuer premium

2.45 In DDs, we discussed the rationale and basis on which an infrequent issuer premium may be applied to the allowed cost of debt.[23]

[20] RIIO-ED2 SSMD - Finance Annex, para 2.41.
[21] RIIO-ED2 Draft Determination - Finance Annex, para 2.30.
[22] This proportion is calculated using our chosen 17yr trailing average.
[23] RIIO-ED2 Draft Determination - Finance Annex, paras 2.31-2.38.

2.46 The infrequent issuer premium reflects an increase in the cost of new debt for those notional licensees that are expected to issue smaller size new debt or issue new debt less frequently than other networks, due to their smaller RAV sizes and/or lower RAV growth for RIIO-ED2.

2.47 At the DD stage, we proposed to apply a 6bps infrequent issuer allowance on the overall cost of debt. We proposed that the premium would be applied at a licensee level for those meeting a given issuance size threshold. The threshold was defined as average RIIO-ED2 annual issuance of £150m; the premium would apply to licensees under this threshold. Based on calculations at DDs, three licensees would have received this premium (LPN, NPgN and NGED SWALES).

2.48 Our estimate at DDs of 6bps on the total cost of debt was based on a premium of 26bps on the cost of new debt and no premium on embedded debt. The 26bps premium on the cost of new debt reflected the use of a Constant Maturity Swap (CMS)[24] to hedge interest rate risk from less frequent issuance (an approach that was introduced (to calibrate the size of the infrequent issuer premium) in our Final Determinations for RIIO-GD&T2). The 6bps was estimated based on the implied proportion of new debt estimated to be issued for RIIO-ED2 (22%).

2.49 In their responses to DDs, five DNOs (ENWL, SPEN, SSEN, NPg and UKPN) focused on three issues with the approach we proposed in DDs. Firstly, that the 6bps on the cost of debt was insufficient. Secondly, whether the eligibility should be assessed on an ownership basis, rather than on a licensee basis. Thirdly, that the infrequent issuer premium threshold should be increased to £250m p.a.

2.50 The RIIO-ED2 Challenge Group indicated that an infrequent issuer premium is not necessary, especially for licensees that are a part of large groups.

2.51 We have decided on a 6bps infrequent issuer premium which will be applied at the individual licensee level. We have also decided to increase the eligibility threshold for the infrequent issuer premium to £250m p.a.

2.52 We consider that 6bps is an appropriate estimate of an infrequent issuer premium. As at DDs, this continues to be based on a 26bps premium applied to new debt, multiplied by our proportion of new debt (22%), based on the costs of a CMS, as used in RIIO-GD&T2. DNOs responses did not, in our view, provide sufficiently justified alternatives to the CMS or provide sufficiently compelling evidence that the allowance based on

[24] This is a variant of an interest rate swap.

the CMS is insufficient to cover the risk of less frequent issuance relative to licensees that issue at least £250m per annum[25].

2.53 Noting that the appropriate size of the uplift is challenging to quantify with precision, we consider 26bps is an appropriate uplift for new debt. Given the use of a single eligibility threshold point, and licensees either receiving a premium or not, our approach needs to be both proportionate and take account of the relative issuance risk profiles of licensees within the sector, including the risk of over-remunerating costs for those licensees raising debt close to our chosen infrequent issuance threshold. Our modelling shows that the smallest licensee, by modelled annual issuance by licensee, is around half of the size of the largest issuer in the sector over RIIO-ED2.

2.54 We continue to consider it appropriate to apply the eligibility threshold for infrequent issuance at the individual licensee level for RIIO-ED2. This is consistent with our focus on notional licensees, rather than considering actual ownership, and consistent with the approach that we applied at RIIO-GD&T2. Whilst we acknowledge that actual companies may issue debt as part of a larger group and there are arguments for why this could reasonably inform eligibility, we do not consider there to be clear justification to move away from a licensee basis given the principle of a notional licensee underpins other parameters (and our financeability assessment) on finance issues.

2.55 Respondents to DDs highlighted that a £250m annual threshold would be more consistent with the size of benchmark debt, with £250m used as the minimum threshold for bonds to be included in the iBoxx GBP Utilities 10yr+ index used as the benchmark for our cost of debt index. A view that £250m constitutes a minimum size issuance is consistent with our DD position, although we used the concept of tapped issuance financing strategy for why a £150m annual threshold was used. Respondents to the DDs noted that tapped issuance was not commonly observed for utilities and was an approach more commonly applied in the social housing sector.

2.56 On balance, we have decided to apply a £250m p.a. eligibility threshold to better reflect the circumstances faced by individual licensees for RIIO-ED2. We have used the 'higher totex' scenario as the reference for estimating RAV growth[26] for this eligibility assessment. This higher totex case is also used in our debt calibration and the scenario testing in our financeability assessment (see further discussion in paragraph 2.85).

[25] We note that KPMG, on behalf of ENWL, suggested an additional cost of 7-18bps on the cost of new debt (1-4bps on the overall cost of debt) would cover credit risk not hedged by the use of a CMS. We refer to specific points raised by KPMG on behalf of ENWL in Appendix 3.

[26] This includes base ex-ante totex allowances and a chosen scenario of ex-post variant expenditure provided via Uncertainty Mechanisms.

2.57 As a result of this decision, eleven licensees will receive the 6bps allowance for RIIO-ED2. Each recipient has average annual issuance less than the £250m p.a. threshold. There are three licensees whose expected issuance is greater than the £250m p.a. threshold so do not receive the premium - these are SSES, NGED EMID and UKPN EPN.[27] This assessment is for RIIO-ED2 only, and we expect to revisit our approach and assumptions of infrequent issuance at future price control reviews. Average annual issuance is shown in Table 6 below.

Table 6: Modelled average annual issuance (higher totex case)

Licensee	**Modelled average annual issuance, £m p.a.**
ENWL	210
NPgN	154
NPgY	221
NGED WMID	234
NGED EMID	258
NGED SWALES	148
NGED SWEST	220
UKPN LPN	160
UKPN SPN	167
UKPN EPN	264
SPD	188
SPMW	193
SSEH	231
SSES	301

2.58 We do not include an infrequent issuer premium for embedded debt, consistent with the approach applied at RIIO-GD&T2 and our DD proposals. We consider that doing so based on actual debt costs would dilute incentives to minimise debt costs.

[27] If there are any totex allowance changes as a result of the Final Determinations Questions (FDQ) or statutory consultation processes, then we will refresh our analysis on which licensees qualify for the allowance prior to our decision on 3 February 2023 on the licence modifications implementing our FDs.

2.59 There is also a risk of double counting and providing an overly generous allowance, given our calibration approach broadly matches expected industry debt costs to expected values of the allowance.

Calibrating the index – trailing average

2.60 As we set out at DDs, the calibration of the allowed return on debt is intended to broadly match expected efficient debt costs of the DNOs across RIIO-ED2[28]. Having selected the index that we consider most reflective of 'on the day' debt costs, we use the trailing average length to best achieve this policy principle.

2.61 Our approach represents a continuation of policy principles established over previous RIIO price control decisions, namely that the cost of debt allowance is set using a notional company approach rather than reflecting actual individual company costs of debt. Calibration of this notional approach is informed by actual company debt costs at the sectoral level – a position upheld by the CMA in relation to the WWU appeal[29]. This approach also has regard to the need to ensure that licensees are able to finance their activities by looking at different scenarios.

2.62 Our DD position was that a rolling 17yr trailing average of the iBoxx GBP Utilities 10yr+ index was appropriate to achieve the overarching policy principle of broadly matching expected industry costs with the allowed return on debt over the RIIO-ED2 price control. However, we highlighted that the length of the trailing average would be revisited ahead of FDs[30].

2.63 Five DNOs responded to DDs that the recent rise in spot yields in corporate debt markets meant that a 17yr trailing average length would lead to significant underfunding of expected industry debt costs in RIIO-ED2. They argued that such an approach would run contrary to Ofgem's principle of broadly matching expected industry debt costs and the expected allowance. The solutions the DNOs proposed to achieve this principle were to either: increase the length of the trailing average to obtain a higher expected debt allowance over RIIO-ED2 (e.g. to 20yrs); or apply an uplift to a 17yr index[31].

2.64 The five DNOs also said that our FD position would need to include sufficient headroom to cover industry debt costs in different macro-economic and interest rate scenarios. Responses highlighted that the RIIO-GD&T2 price control included headroom to cover both the costs of

[28] RIIO-ED2 Draft Determination - Finance Annex, paras 2.40-2.44.
[29] CMA Final Determination, Volume 3: Individual grounds, Paragraph 14.144, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf
[30] RIIO-ED2 Draft Determination - Finance Annex, para 2.63.
[31] The majority of DNOs in their DD responses had proposed a longer trailing average, whilst SSE included reference to an uplift approach. Subsequent engagement with the ENA also had reference to an uplift approach.

derivatives and different interest rate and inflation environments, equivalent to 26-29bps.

2.65 For our FDs, we have updated our estimate of expected debt costs in RIIO-ED2 to reflect current yields, inflation and likely RAV growth (hence borrowing requirements of licensees).

Approach to assessing industry debt costs

2.66 Our estimate of forecasting network debt costs involves detailed modelling of the embedded and forecast new debt of networks. This uses evidence submitted to us from the networks on individual debt instruments. For these Final Determinations, the approach we have taken to model expected debt costs is consistent with the detailed steps set out in paragraphs 2.57-2.60 of the DD Finance Annex[32].

Pooling network debt costs

2.67 We set out in DDs that we considered it most appropriate to focus on RIIO-ED2 sector costs only, due to cost estimates being more robust, and more representative of the notional electricity distribution licensee and characteristics of their debt[33]. No stakeholders discussed this element of our approach in their DD responses. For FDs, we have decided to focus on electricity distribution sector costs.

Use of derivatives

2.68 In DDs, we considered two pools of debt for calibration: one pool that excludes all derivatives, and another pool that includes derivatives.

2.69 We stated that estimates excluding derivatives are more appropriate, but that we consider estimating industry debt costs including the cost of derivatives to be appropriate as a broad cross check[34].

2.70 We stated that the key reasons we consider it is appropriate to focus on the pool of debt costs excluding derivatives are:

- We consider that the debt allowance can reasonably be achieved using standard debt instruments and derivatives are not a necessary feature for the notionally efficient operator. Where companies choose to use derivatives, it should be because they consider it appropriate. We do not consider that additional compensation is required.
- Derivative use varies between licensees and is likely to reflect company-specific risk management decisions. The use of derivatives leads to different levels of risk exposure, relative to debt instruments. We consider that the costs and benefits should be borne by equity investors.

[32] In relation to specific points raised by NPg, our modelling includes costs based on yields at issuance and does not adjust for bonds issued at different credit ratings due to structural features.
[33] RIIO-ED2 Draft Determination - Finance Annex, para 2.47.
[34] RIIO-ED2 Draft Determinations - Finance Annex, paras 2.49 to 2.56.

- Assessing derivatives at a single point in time creates complications where derivatives are used to profile cash inflows and outflows. This approach could create an incentive for companies to enter into derivative contracts immediately before the calibration exercise to profile cash flows.[35] This could indicate higher costs in the upcoming price control than might otherwise have been the case, which could then lead to a higher allowance. Future derivative use is also very difficult to predict. For this reason, a long-term approach to assessing the economic value of the derivatives over their full term would be needed to address the issues with an assessment at a given point in time.
- The exercise to assess the overall value of derivatives over the full term would add significant complexity and amplify the time and resource burden of the calibration exercise. We stated that such an assessment would be disproportionate given the potential benefits from doing so, given our view that the debt allowance can reasonably be achieved without derivatives and that any derivatives ought to be fair value.[36]

2.71 DNOs' DD responses suggest that allowances should be set to include funding that is sufficient to include derivative costs.

2.72 We set out in Table 7 and Table 8 below forecast industry debt costs including and excluding derivatives, though we continue to place primary weight on debt costs excluding all derivatives. In DDs and as part of the RIIO-GD&T2 FD Finance Annex, we explained why we consider that costs including derivatives should be given limited weight[37] in our assessment (i.e. it should be a broad cross check only) and we remain of this view.

2.73 For the reasons set out above, we continue to consider that the allowed return on debt is sufficient without the use of derivatives. Derivatives represent choices made by the networks and are influenced by their shareholders' risk appetite and cashflow profiling decisions. We consider that this risk sits best with shareholders, not consumers. We also have concerns around the bespoke nature of derivatives, the difficulty of assessing whether the derivatives were entered into at market rates or whether excessive fees have been paid to intermediaries.

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[35] At least one electricity distribution network has used derivatives to move cash flows between price control periods, with costs for RIIO-ED2 now expected to be higher than they would have been without these derivatives. Bespoke derivatives can include the expectation that the derivative counterparty is a net payer in the swap in early years and a net receiver in the latter years.

[36] As noted by the CMA (2021), all standard derivatives should have a net present value (NPV) of zero at the point of deployment (i.e. are deployed as a "fair bet"). CMA Final Determination, Volume 3: Individual grounds, Paragraph 14.224, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

[37] Ofgem (2020) RIIO-GD&T2 DD Finance Annex, paras 2.49- 2.56

Alternative calibration options

2.74 Our DD position of a 17yr trailing average was criticised by networks as no longer being likely to fund expected industry debt costs over RIIO-ED2, at the time of their response.

2.75 Multiple networks (ENWL, SPEN, SSEN, UKPN, NGED) highlighted that a longer trailing average would increase the expected allowed return on debt and would be more suitable for calibration than a 17yr trailing average. Given a downwards trend in spot yields over the previous 20-25yrs, a longer trailing average would include more expensive debt in the index than more recent years. SSEN also suggested an alternative approach of applying a fixed uplift to a 17yr trailing average.[38]

2.76 The calibrations considered at DDs were based on either a fixed trailing average (on a rolling basis[39]) or an extending trailing average, where the trailing average increased over the control[40]. Given the volatility and movements in spot yields for our preferred benchmark index since DDs, we have considered whether the use of a longer trailing average to achieve our policy principle of broadly matching expected industry debt costs and expected allowed costs is suitable.

2.77 The downside to extending the trailing average to align with our policy principles is that the allowed return on debt under longer trailing average periods would be less responsive to movements in spot yields than expected actual industry debt costs:

- Where spot yields increase, networks may face increased risk of under-funding of debt costs.
- Where spot yields decrease, customers risk paying a higher cost through the allowed return on debt than is necessary to fund actual industry debt costs.

2.78 We have therefore considered an alternative approach to calibration, namely using a trailing average with a fixed calibration uplift/increment, as proposed by SSEN and the ENA following our DDs.

2.79 Under such an approach, the allowed return on debt would reflect an indexed trailing average plus a fixed increment (this would not change for the duration of RIIO-ED2), plus additional borrowing costs and any infrequent issuer premium. This increment could be positive (i.e. a higher allowed return on debt) or negative (i.e. a lower allowed return on debt). We refer to this fixed increment from here on as the 'calibration adjustment.'

[38] In subsequent engagement with Ofgem, the ENA also discussed such an approach.
[39] This means that for each additional year of outturn data included in the trailing average period, the most historical year of data drops out.
[40] For example, a trailing average that begins at 10yrs and extends to 14yrs after four years of the price control, when it remains at 14yrs for the final year of the five-year price control. This is the approach applied for the RIIO-GD2 and RIIO-T2 price controls.

2.80 Assuming the inputs to our cost of debt modelling are a fair assessment of forecast interest rates in RIIO-ED2, using a calibration adjustment should not lead to any ex-ante directional bias.

2.81 For example, a 17yr trailing average with +20bps calibration adjustment may give the same expected allowed return on debt over RIIO-ED2 as a 20yr trailing average with no calibration adjustment. However, if spot debt costs fall in future, the allowed return on debt under the shorter trailing average with the calibration adjustment will be lower (and vice-versa).

2.82 There are many potential trailing averages with calibration adjustments that could achieve our policy principle of broadly matching expected efficient industry debt costs with an expected allowance:

- Shorter trailing averages with upwards calibration adjustments would be more responsive to movements in rates in a context of sizable debt issuance expected over RIIO-ED2.
- Longer trailing averages would require a smaller calibration uplift and would be more consistent with previous decisions on the trailing average period for RIIO-ED1 and RIIO-ED2 DDs. However, longer trailing averages would mean the price control allowance is slightly less responsive to future movements in spot rates.

2.83 After careful consideration, we have concluded that the use of a calibration adjustment approach is appropriate under current financial market conditions. We consider that such an approach is simple and transparent and is consistent with the policy principles set out over successive price control decisions and with our RIIO-ED2 SSMD and DD positions on the allowed return on debt.

Testing calibrations under relevant scenarios

2.84 We have tested the suitability of calibrating the cost of debt index to different trailing average periods with forecast efficient industry debt costs under different scenarios; these scenarios involve varying assumptions in relation to expected totex, inflation and interest rates i.e. iBoxx and LIBOR, over RIIO-ED2. We have also tested the calibrations including and excluding the costs of derivatives. We used data up to 31 October 2022 for our assessment. This captures current data and is consistent with the cut-off dates used for indexation of debt and equity.

2.85 The results of this scenario analysis are summarised in Table 7 and Table 8 below. For totex, we considered two key scenarios: i) a baseline totex scenario (i.e. allowed totex = baseline allowances); and ii) a higher case scenario that includes baseline totex allowances and a provision for additional totex allowed through Uncertainty Mechanisms (so both ex-ante and ex-post variant expenditure). The higher case scenario does not represent an Ofgem forecast or an indication of future re-opener allowances, but we consider it a plausible and appropriate case of

possible ex-post variant expenditure during RIIO-ED2.[41] The analysis in Table 7 and Table 8 shows the results of inflation and interest rate scenarios applied to this higher case totex scenario[42].

2.86 We have not presented options that apply extending trailing averages (like the approach applied in RIIO-GD&T2). This is because the SSMD and DD positions referred to a fixed trailing average length and, whilst we considered alternative approaches, we consider a fixed trailing average suitable, and the range of options shown highlights the key issues faced in calibrating an index in the current interest rate environment. Table 7 and Table 8 also do not include any calibration adjustment. The size of any calibration adjustment is intended to be a fixed scalar which is calibrated once an approach to the trailing average period is chosen.

Table 7: Calibration options - expected allowed return on debt minus expected industry debt costs in RIIO-ED2 (excluding derivatives and the infrequent issuer premium)

Index calibration	**Baseline totex**	**Higher totex**	**Inflation + 1%[43]**	**Inflation - 1%**	**iBoxx & LIBOR +1%**	**iBoxx & LIBOR - 1%**
10yrs	-1.01%	-1.02%	-1.14%	-0.90%	-1.12%	-0.93%
15yrs	-0.58%	-0.58%	-0.70%	-0.47%	-0.73%	-0.44%
17yrs	-0.38%	-0.38%	-0.50%	-0.27%	-0.55%	-0.23%
18yrs	-0.29%	-0.30%	-0.42%	-0.19%	-0.47%	-0.14%
20yrs	-0.17%	-0.18%	-0.30%	-0.07%	-0.36%	-0.01%
22yrs	-0.06%	-0.07%	-0.18%	0.05%	-0.25%	0.11%
24yrs	0.08%	0.07%	-0.05%	0.19%	-0.12%	0.26%

2.87 Note: all options include 25bps of additional borrowing costs as part of the allowance and expected industry debt costs.

2.88 As interest rates over the medium term have decreased, use of a longer trailing average (for the averaging periods considered) increases the allowed return on debt. However, the results above show that the expected allowed return on debt (excluding derivatives) is less than the

[41] We estimate the higher case to be 127% of RIIO-ED1 (5-year annualised) allowed totex. This compares to 119% in the baseline case, 138% in DNOs' final submitted business plans and 133% in a maximum high case that we consider plausible following the cost assessment undertaken for the price control.
[42] We considered alternative scenarios, including larger shocks e.g. 2% on inflation or interest rates, although we present a sub-set of those scenarios.
[43] The inflation scenario is limited to the impact on companies' index-linked debt exposure. We do not make any changes to allowed debt costs.

expected industry cost of debt over RIIO-ED2 for all scenarios up to and including a 20yr trailing average (i.e. under-funding). The 24yr trailing average is slightly more than sufficient in the baseline totex case, but not under all scenarios modelled.

2.89 The same analysis is shown in Table 8 below for industry debt costs including derivatives. As the inclusion of derivatives increase expected industry debt costs over RIIO-ED2, the results indicate higher underfunding for scenarios than when excluding derivatives. For example, in contrast to the analysis excluding derivatives, in both the baseline and higher totex cases a 24yr trailing average period results in underfunding of expected industry debt costs including derivative costs.

Table 8: Calibration options - expected allowed return on debt minus expected industry debt costs in RIIO-ED2 (including derivatives)

Index calibration	**Baseline totex**	**Higher totex**	**Inflation + 1%**	**Inflation - 1%**	**iBoxx & LIBOR +1%**	**iBoxx & LIBOR - 1%**
10yrs	-1.16%	-1.16%	-1.35%	-0.98%	-1.26%	-1.07%
15yrs	-0.72%	-0.73%	-0.91%	-0.54%	-0.87%	-0.58%
17yrs	-0.52%	-0.53%	-0.71%	-0.34%	-0.69%	-0.37%
18yrs	-0.44%	-0.45%	-0.63%	-0.26%	-0.61%	-0.28%
20yrs	-0.32%	-0.32%	-0.51%	-0.14%	-0.50%	-0.15%
22yrs	-0.20%	-0.21%	-0.39%	-0.03%	-0.39%	-0.03%
24yrs	-0.06%	-0.07%	-0.25%	0.11%	-0.26%	0.11%

2.90 Note: all options include 25bps of additional borrowing costs as part of the allowance and expected industry debt costs.

Chosen approach

2.91 We do not believe it is necessary to calibrate the index to fully compensate networks in all potential macro-economic environments or company specific scenarios, as this could lead to consumers overpaying to cover risks that we consider should be borne by equity holders. Our approach to the calibration of the index is that consumers should pay no more than is necessary to be consistent with our duties, in particular that companies are able to finance their activities, which we assess for a notional firm at an industry level.

2.92 Our analysis has considered the potential for our modelling to represent a conservative expectation of industry debt costs, given that we have assumed new debt is issued at a rate equivalent to the iBoxx GBP Utilities 10yr+ index and our analysis has indicated the potential for a

halo effect[44]. We also do not rely solely on one estimate of the expected industry debt costs and have seen during the consultation process how expected RIIO-ED2 costs can change in a short period of time. Our decision-making has also been informed by assessing expected debt costs under a range of different totex, inflation and interest rate scenarios.

2.93 Looking at the scenario analysis in the round, we have decided for these Final Determinations to adopt an index that uses a 17yr trailing average with a calibration adjustment of +55bps (this is prior to applying a further 25bps for additional costs of borrowing, or infrequent issuer premium, where relevant). The calibration adjustment will be a fixed scalar (i.e. uplift) that will remain unchanged for the duration of RIIO-ED2.[45]

2.94 Table 9 shows the difference between expected industry debt costs and expected allowed debt costs, excluding derivatives, for each of the scenarios in Table 7 and Table 8, using our chosen approach.

Table 9: Difference between expected industry debt costs and expected allowed debt costs, RIIO-ED2 average, excluding derivatives

Index calibration	**Baseline totex**	**Higher totex**	**Inflation + 1%**	**Inflation - 1%**	**iBoxx & LIBOR +1%**	**iBoxx & LIBOR - 1%**
17-year trailing average + 55bps calibration adjustment + 25bps additional cost of borrowing	0.17%	0.17%	0.05%	0.26%	0.00%	0.32%

2.95 Note: all options include 25bps of additional borrowing costs as part of the allowance and expected industry debt costs.

2.96 We have decided that a 17yr trailing average with a calibration adjustment represents the most appropriate approach, in light of our detailed modelling and feedback from DDs. We find the 17yr trailing average to be appropriate because:

[44] As discussed in para 2.19, a halo effect means that new debt may be issued at a rate below the iBoxx index benchmark.
[45] As a result, it will be only the underlying index value (based on a 17-year trailing average) that will update over the course of the price control.

- Under the RIIO-ED1 'trombone' trailing average, in the current financial year (2022/23) the trailing average is 17yrs. Use of a 17yr trailing average reflects greater stability in underlying assumptions.
- The SSMC, SSMD and DD focused on a 17yr trailing average period. DD respondents did not have principled objections to this so long as it met our policy objective of funding expected industry debt costs for the period of RIIO-ED2. We consider that with the calibration adjustment, our chosen approach achieves this objective.
- The profile of expected industry costs and the expected allowance do not vary significantly from one another in any given year when using a 17yr trailing average in our modelling.

2.97 While there are arguments in favour of using either a shorter trailing average or longer trailing average, we consider that a 17yr trailing average appropriately balances a range of relevant considerations.

2.98 As discussed above, the main drawback of extending the trailing average from the 17yrs set out in DDs is that a longer trailing average is less responsive to changes in market rates. If spot rates increase, a less responsive index increases the risk of under-funding licensees. If spot rates decrease, a less responsive index means reductions in debt costs feed through more slowly, increasing the risk that consumers could overcompensate DNOs following the fall in interest rates. The extent of the increase in the trailing average period (compared to DDs) would have needed to be significant to achieve the broad industry costs matching principle and our analysis also suggests that a 24yr trailing average with no calibration adjustment may not have provided sufficient returns in certain scenarios. [46]

2.99 Whilst trailing average periods shorter than 17yrs improve the responsiveness of the index, these also have drawbacks. Firstly, expected industry debt costs and expected allowed debt costs vary materially within the RIIO-ED2 years under our modelling with shorter averaging periods, e.g. 10yrs. Secondly, DNOs noted that they expected a longer trailing average period or the same trailing average with an uplift. No shorter trailing average option was raised. Thirdly, a larger fixed uplift reduces the proportion of the debt allowance that comes via the trailing average itself.

2.100 We consider that application of a 55bps calibration adjustment is sufficient to compensate for expected industry debt costs in RIIO-ED2. The size of the calibration adjustments is a judgement, specific to this RIIO-ED2 price control, based on the evidence from our analysis of a range of modelled scenarios. The calibration adjustment provides headroom in our modelling for each of our seven scenarios analysing expected industry debt costs excluding derivatives (Table 7) and as a

[46] The iBoxx GBP Utilities 10yr+ index only begins in January 1998, so a longer trailing average than 24yrs would create a practical challenge.

broad cross-check is also sufficient to cover the combined expected electricity distribution sector debt and derivatives costs the baseline and higher totex case scenarios in our analysis.

Deflating into CPIH real yields

2.101 We decided in the RIIO-ED2 SSMD to implement an immediate switch from RPI indexation to CPIH indexation[47]. This requires us to estimate a real CPIH cost of capital, hence the real CPIH cost of debt. The benchmark iBoxx GBP Utilities 10yr+ index includes nominal yields and so this needs to be deflated into a real equivalent.

2.102 In our DD, we proposed to use long-term OBR forecasts of CPI inflation to directly deflate nominal yields into CPIH real allowances[48]. We proposed to use inflation expectations at each date to create a series of implied real values, rather than deflate a trailing average of nominal yields by a current estimate of inflation.

2.103 In applying this approach, we continued to use the Fisher equation, as per the approach used to set real allowances in previous RIIO price controls. The inflation assumption used in our calculations is the latest OBR forecast of CPI inflation in five years' time.

2.104 DNOs supported our proposed approach to deflating nominal yields set out in the DDs. Other respondents did not directly respond to the use of inflation to obtain a real cost of debt.

2.105 In light of this and considering the benefits of retaining a stable and predictable approach for RIIO-ED2, we have decided to deflate nominal yields by the OBR Year 5 forecasts, as proposed in DDs.

2.106 We note that in DDs, we asked specific questions on the approach to inflation within the cost of capital[49]. We intend to consult in early 2023 on these broader inflation questions. We discuss inflation in more detail in Chapter 4 of this finance annex.

Exceptional cases

2.107 We have previously sought to assess whether there are factors that sit outside of a company's control that should be reflected in the cost of debt allowance as part of the indexation mechanism. Examples of this include the infrequent issuer premium and the use of RAV-weighted averaging in the cost of debt allowance for SHETL in both RIIO-1 and RIIO-2. The latter case reflected the fact that SHETL's RAV profile and

[47] RIIO-ED2 SSMD Finance Annex, paragraph 7.9.
[48] RIIO-ED2 Draft Determinations - Finance Annex, paras 2.65-2.68. We note that the OBR does not forecast CPIH inflation.
[49] RIIO-ED2 Draft Determinations - Finance Annex, Chapter 4.

expected RAV growth were exceptional and exogenous to the company's financing decisions. As a result, its forward-looking costs were adjusted.

2.108 ENWL has previously advocated for an alternative approach to the cost of debt allowance approach proposed in DDs and decided above, which it criticises as being a 'one size fits all' approach that creates 'winners' and 'losers'. ENWL proposed a debt performance sharing mechanism or a time-weighted issuance approach ahead of DDs[50].

2.109 We set out in DDs[51] why we did not consider the alternative approaches suggested by ENWL were appropriate for RIIO-ED2.

2.110 In its responses to DDs, ENWL has continued to argue that our approach to estimating the cost of debt is inappropriate and that the two alternative approaches are preferrable. We have responded to the individual points raised in consultancy reports commissioned by ENWL in Appendix 3.

2.111 We consider that indexation and calibrating the index to sector averages retains incentives for networks to raise debt efficiently and prudently and that the detailed bottom-up approach to calibration is appropriate because:

- we have carefully considered electricity distribution sector actual debt costs in detail
- we consider that it is more accurate than the alternative approaches proposed
- it provides a logical transition from RIIO-ED1 allowances
- an aggregate notional approach does not change incentives around substitution between debt and equity
- it carries suitably low risk of under or overcompensating networks for debt costs.

2.112 In DDs, we set out that a weighted issuance approach would move risk from companies to consumers, which we did not think was appropriate[52]. We also note that in its Final Determination in the RIIO-GD&T2 appeals, the CMA said that "we continue to view it as fairer to all customers that they are not generally exposed to the specific financing choices of their regional monopoly energy networks."[53]

2.113 We do not consider it necessary or appropriate to set the allowed return on debt based on individual company costs, partially or fully. This would not provide companies with the required incentives to manage financing

[50] RIIO-ED2 Draft Determination - Finance Annex, para 2.71.
[51] RIIO-ED2 Draft Determinations - Finance Annex, paras 2.72-2.73
[52] RIIO-ED2 Draft Determinations - Finance Annex, para 2.72.
[53] CMA Final Determinations, Volume 3: Individual Grounds, Paragraph 14.188, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

risk efficiently and prudently and would expose the consumer to the risk of moral hazard, particularly given the range of choices companies face in forming their actual financing decisions[54]. Moral hazard could occur if a company engages in riskier financing activity in the knowledge that another party (consumers) would incur the cost if negative consequences materialise. Outcomes where firms were able to recover their own debt costs, irrespective of their level, would not be consistent with a competitive market outcome.

2.114 Remunerating individual company actual costs of debt would represent a significant change in the approach adopted by GEMA over at least 20 years across the different sectors we regulate. This could call into question the stability and predictability of the regime, which would have negative consequences for consumers. It would also retrospectively expose the consumer to risks around financing decisions that we consider better sit with shareholders.

2.115 Such an approach also runs the risk of consumers paying for inefficient debt costs, given practical challenges of assessing efficiency. While assessing the efficiency of publicly traded bonds against market rates is possible, there are strategic choices around currency, debt type and tenor that are more difficult to assess on bonds. The same pricing benchmarks do not exist for bank debt and there are specific challenges associated with derivatives, e.g. how to assess break clauses. There is a further question around how to adjust for different financial structures with respect to gearing. These practical challenges exacerbate the principle-based drawbacks of a sharing mechanism.

2.116 For the reasons set out above, we do not consider that it would be appropriate to change the approach to setting the allowed return on debt in the case of ENWL.

[54] Including the mix of debt and equity.

3. Allowed return on equity

3.1 The determination of the allowed return on equity is a significant component of allowed returns and the cost to consumers of network services.

3.2 In this section, we summarise stakeholder responses to our Draft Determinations regarding the proposed allowed return on equity and our views on them. We then set out our decision on what would provide networks with a reasonable baseline allowed return on equity.

Background

Purpose	Returns to equity investors remunerate their investment in network services and comprise a baseline allowance plus performance incentives. In this chapter we outline the steps we have taken to set the baseline allowance, before summarising the package of financial incentives for RIIO-ED2.
Benefits	Accurate remuneration will secure network investment during RIIO-ED2 and help keep consumer charges in line with efficient costs.

3.3 In our RIIO-ED2 Framework Decision,[55] in the absence of compelling evidence to suggest that a different methodology should be used for the electricity distribution sector, we decided to set the baseline allowed return on equity using the same methodology as applied to the other RIIO sectors (GD&T).

3.4 In our SSMC Finance Annex,[56] we sought views on how to apply this methodology to the electricity distribution sector. Specifically, we asked:

> *FQ6 In light of the equity methodology we set out in Draft Determinations for GD&T, do you have a view on how implementation could best be applied to the* electricity distribution *sector?*

3.5 Equity issues for electricity distribution are very similar to RIIO-GD&T because the risks and returns for investors will be driven by common issues. In our RIIO-ED2 SSMD, we considered that there was no compelling evidence to support implementing a cost of equity

[55] RIIO-ED2 Framework Decision, Page 45
[56] RIIO-ED2 SSMC Finance Annex, Page 12

methodology in the electricity distribution sector that was different from RIIO-GD&T2, nor that different systematic risk assumptions applied for the electricity distribution sector compared to the RIIO-GD&T sectors.

3.6 In our Draft Determinations, we reflected the CMA's findings from the RIIO-GD&T2 appeals[57] because the issues are similar across the sectors, even though RIIO-ED2 remains a separate price control. The main change is that we proposed to remove the Expected Outperformance adjustment of 25bps from Step 3.

Final Determination for baseline allowed return on equity

3.7 Table 10 summarises our Final Determination.

Table 10: Summary of Final Determination for RIIO-ED2 (60% notional gearing, CPIH-real)[58]

Equity steps and parameters	Final Determination	Draft Determination
Risk-free rate forecast	1.23%	-0.74%
Total Market Returns	6.50%	6.50%
Notional equity beta	0.759	0.759
CAPM implied cost of equity	5.23%	4.75%
Step 2 - cross-checks and assessed cost of equity	Suggests lower values. However, we use 5.23%.	Suggested lower values. However, we used 4.75%.
Step 3 - baseline allowed return	5.23%	4.75%

Risk-Free Rate (RFR)

3.8 In Draft Determinations,[59] our proposal was to use RPI index-linked gilts (ILGs), adjusted to CPIH-real terms, as the basis for the RFR assumption.

Summary of consultation responses

Responses to FQ2: do you have any views on the model to implement equity indexation?

[57] RIIO-ED2 Draft Determinations – Finance Annex
[58] For simplicity, we summarise our decisions here using mid-point values for reference. The remainder of the chapter sets out further detail on each parameter, in both policy and decision terms, including the ranges that we considered for each parameter.
[59] RIIO-ED2 Draft Determinations – Finance Annex

3.9 None of the DNOs or NGN commented on the model functionality but repeated their view that the RFR sits above ILGs because ILG prices are impacted by a convenience premium, for example.

3.10 The RIIO-ED2 Challenge Group (CG) remains supportive of the principle of equity indexation and agrees with the arrangements proposed.

Responses to FQ3: given upcoming change to the definition of RPI, should the RPI-CPIH inflation wedge be based on a single year or 20 years of forecasts?

3.11 All DNOs said Bank of England data on implied inflation ILG forward curves does not support the view that there will be a substantial change in RPI in 2030. The DNOs said this may be explained by the remaining uncertainty on the future of RPI given a pending Judicial Review[60] of the UK Statistics Authority's (UKSA's) decision to reform the RPI index.

3.12 SPEN and UKPN believe that Ofgem should adopt the OBR's long-term RPI-CPIH wedge forecast of 100bps, instead of option 'a' (using the OBR's 5 year ahead forecast of 70bps). SPEN also suggested that, if Ofgem choose to account for the RPI reform (option 'b') the RPI-CPIH wedge should be adjusted to around 59bps, based on Oxera's analysis on zero-coupon RPI and CPI swaps and the historical CPI-CPIH wedge[61].

3.13 SSEN said it would need more information to make a decision on whether RPI-CPIH inflation wedge should be based on a single year or 20 years of forecasts. SSEN suggest that, under both methodologies, Ofgem has understated the RPI-CPIH wedge by 30bps, while referring to Oxera[61].

3.14 NGED suggest the average RPI-CPIH wedge since 2005 (0.85%) should be used to convert the real rate from RPI to CPIH. NGED also suggest 20-year RPI-CPI swap rates could be used and said Oxera's estimate equals 0.56%[61].

3.15 Citizens Advice said the inflation wedge should be based on 20 years of inflation forecasts. Centrica stated that:

> "In light of the upcoming change to the definition of RPI in 2030, the RPI-CPIH inflation wedge should be based on a longer-run view of inflation (e.g. 20 years of inflation forecasts)".

3.16 The CG said it did not have a strong view on which approach was correct but said: "there appears to be some merit intellectually and in practice in (b)" (using 20 years of forecasts).

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[60] https://www.pensionsage.com/pa/Pension-schemes-set-for-RPI-appeal-court-case.php

[61] Oxera, Cost of equity in RIIO-ED2 Draft Determinations, prepared for the ENA, August 2022

Final Determination

3.17 We have decided to implement the same RFR method as we used for RIIO-GD&T2: we adopt the 'single year' approach for the RPI-CPIH wedge estimation rather than the 20-year geometric wedge.

3.18 Table 11 below provides an update on latest ILGs which we use for the purposes of this Final Determination, as estimated in an updated version of the Weighted Average Cost of Capital (WACC) allowance model.

Table 11: ILGs and the forward curve, 20-year tenor

Component	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**Average**	**Ref**	**Source**
ILG (RPI, spot)	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%	A	Bank of England
Uplift (RPI)	0.41%	0.07%	0.14%	0.16%	0.14%	0.18%	B	Bank of England
ILG (RPI, forward)	0.76%	0.41%	0.48%	0.51%	0.48%	0.53%	C	C = A+B
ILG (CPIH, spot)	1.05%	1.05%	1.05%	1.05%	1.05%	1.05%	D	D = (1+A) * (1+0.7%)-1
Uplift (CPIH)	0.41%	0.07%	0.14%	0.16%	0.14%	0.18%	E	E = F - D
ILG (CPIH, forward)	1.46%	1.11%	1.18%	1.21%	1.18%	1.23%	F	F = (1+C) * (1+0.7%)-1

Source: Ofgem analysis of Bank of England data, WACC allowance model

Rationale

3.19 We see no strong reason to apply a different methodology to the electricity distribution sector compared to the RIIO-GD&T sector. For example, DNOs did not provide any substantially new evidence on the 'convenience premium' to take a different view for electricity distribution than we did for RIIO-GD&T2[62]. We still believe ILGs are a good proxy for the RFR as these are generally agreed to be very low risk.

3.20 In response to the DNOs' view that there is uncertainty on the future of RPI, we believe there is now more certainty that the change to RPI will happen considering what has happened since August. On 1st September 2022, the High Court dismissed a claim for judicial review brought by BT Pension Scheme Trustees Ltd and others against the UK Statistics

[62] RIIO-2 Final Determinations – Finance Annex (REVISED)

Authority (UKSA) and the Chancellor of the Exchequer.[63&64] The claimants challenged a decision by the UKSA to change the methods used to compile RPI. Mr Justice Holgate found against the claimants on each of the three grounds of challenge. On the same day, a statement from the trustees said the Schemes were considering whether to appeal this decision.[65&66] Subsequently, the BT Pension Scheme published an article[67] (dated 20th September 2022) saying:

> "… the Schemes sought permission from Mr Justice Holgate to appeal the judgment. This application was rejected, and, after careful consideration, the Trustees… have taken the decision not to pursue an application to the Court of Appeal."

3.21 The decision by the High Court to dismiss the claim, and the decision by the Schemes not to pursue an appeal to the Court of Appeal, provide a clearer basis for RPI measurement from 2030 onwards. In principle, the 20-year geometric approach should be more accurate than using a single year because it considers more information that should be reflected in ILG prices.

3.22 However, in our view, using a single-year estimate for the RPI-CPI wedge is a satisfactory approach as it is a long-standing accepted methodology for RIIO-ED2 which has been well tested with stakeholders. We did not find conclusive evidence that a 20-year geometric wedge would lead to a better RFR estimate. We found that information from the swap market was difficult to reconcile with 'breakeven' inflation from the gilt market and the difference between the markets made us less confident about changing from the 'single year' approach to the 20-year geometric approach.

3.23 To conclude, we have decided to continue using the single-year estimate for the RPI-CPI wedge even though it leads to a slightly higher RFR estimate than using the 20-year geometric approach and even though the change to RPI seems likely to happen. Accordingly, we were not persuaded to increase the RFR assumption further still, as suggested by DNOs, to reflect 'convenience yield' arguments or 'corporate bond' information. In our view, the single-year approach to the inflation wedge results in a sufficient assumption for the RFR.

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[63] BT Pension Scheme Trustees -v- UK Statistics Authority | Courts and Tribunals Judiciary
[64] Approved Judgment 1 September 2022, BT Pension Scheme v UKSA (judiciary.uk)
[65] BTPS Portal - News Detail
[66] BT, Ford and M&S schemes consider appealing against RPI judgment - DB & Derisking - Pensions Expert (pensions-expert.com)
[67] BTPS Portal - News Detail

Total Market Returns (TMR)

3.24 In Draft Determinations,[68] we proposed a TMR range of 6.25% to 6.75% with a mid-point of 6.5%.

Summary of consultation responses

Responses to FQ4: Is there evidence that suggests we should change our approach to TMR for RIIO-ED2?

3.25 All DNOs and NGN suggest we use a new back-cast data series as published by the ONS in May 2022[69] when converting historical UK realised returns into real-CPIH terms. The DNOs refer to Oxera analysis that using the new CPIH data would increase equity returns by ~0.25% (CPIH-real).

3.26 SPEN said that failing to adopt the change would be an error. SSEN said this new evidence highlights that Ofgem has made errors in the choice of historical inflation series.

3.27 The RIIO-ED2 CG said there is no need for a change in approach to TMR. The CG believe the highest acceptable level for the mid-point TMR for RIIO-ED2 is 6.5% CPIH.

3.28 Citizens Advice suggest TMR should reflect the totality of opportunities available to the investors and recommend looking at "National Accounting Data as a proxy for total market return as an alternative to the quoted equity market, the use of which biases the estimates of TMR upwards".

Responses to FQ5: Can stakeholders confirm their view on the trade-off between: the objectivity of using outturn averages; versus the benefits of putting more weight on current expectations?

3.29 All DNOs and NGN recommended that we place primary reliance on long-run historical realised returns when estimating the expected real TMR.

3.30 NGN said there is no perfect single source of information on TMR. NPg said that relying on outturn averages is both more objective and also contributes to regulatory stability giving benefits to both investors and consumers. UKPN agreed that outturn averages should be the prime methodology, but that Ofgem has erred in calculating the TMR by using a geometric mean with an uplift rather than the arithmetic average.

3.31 ENWL said that using equity cross-checks (rather than outturn averages) would undermine regulatory stability and predictability. SSEN said reliance on observable data over a long period outweighs any benefit of forecasting TMR. NGED said that most weight should be placed on the

[68] RIIO-ED2 Draft Determinations – Finance Annex
[69] Office for National Statistics, 'Consumer price inflation, historical data, UK 1950 to 1988', 18 May 2022

historical ex-post approach based on its consistency, predictability, and objectivity.

3.32 The CG said it can see no need for a change to setting the TMR.

3.33 Citizens Advice said "while outturn averages may be objective, the choice and interpretation of these averages is subjective". Citizens Advice suggested Ofgem use current expectations to help reflect the way in which network companies diverge from conventional cyclical equity comparators.

Responses to FQ6: Do stakeholders agree with our proposal to apply the same TMR for RIIO-ED2 (a mid-point of 6.5% CPIH) as we did for RIIO-GD&T2?

3.34 All of the DNOs and NGN said Ofgem's mid-point TMR should be 6.75% or above given the new CPIH data. All DNOs refer to two Oxera reports in support of their views.[70]

3.35 SPEN suggests it is an error to place undue weight on one deflationary approach, in the context of using both the consumption expenditure deflator (CED)/RPI and CED/CPIH. SPEN suggest that CED may be upwards biased because it is likely to be constructed in a similar way to RPI and therefore could include a formula effect.

3.36 UKPN suggests that the TMR should be 7.1%-7.2% after correcting for two errors: 1) the new CPIH data from ONS; and 2) the use of an arithmetic rather than geometric mean to calculate TMR.

3.37 NGED suggest the mid-point TMR should be 7%, with reference to a report by Frontier Economics which has a range 6.7% to 7.3% (CPIH real).[71]

3.38 The CG believe the highest acceptable level for the mid-point TMR for RIIO-ED2 is 6.5% CPIH.

Final Determination

3.39 We have decided on a TMR range of 6.25% to 6.75% (CPIH real), with a mid-point of 6.5%, in line with our position at DD and in line with our final determination for RIIO-GD&T2.

Rationale

3.40 We agree with DNOs that:

- the ONS published new data in May 2022, which was not discussed in our RIIO-ED2 DDs or considered in the RIIO-GD&T2 price controls

[70] Oxera, Cost of equity in RIIO-ED2 Draft Determinations, prepared for the ENA, 25 August 2022. And 2) Oxera, Assessing the new ONS CPIH back-cast, prepared for the ENA, 15 August 2022

[71] Frontier Economics, Cost of Equity – Response to RIIO ED2 Draft Determinations, a report prepared for NGED (WPD), 23 August 2022

- the CPIH-back-cast is a relevant consideration for ex-post realised returns
- we place most weight on ex-post measures of returns when estimating TMR
- using back-cast CPIH alone would increase ex-post TMR estimates by approximately 0.2% to 0.25%

3.41 However, we were not persuaded to increase our TMR assumption to reflect the new CPIH-back-cast data for the following reasons.

3.42 First, our approach to TMR estimation does not place sole reliance on any one estimation approach because there is no perfect single source of information on TMR, as noted by NGN.[72] Further, the ex-post data is only one reference point for TMR estimation - to rely exclusively on one method implies that investors' expectations are precisely equal to that method. As noted by Citizens Advice, outturn data is objective, but the interpretation of it is subjective. The CPIH back-cast data is only one of many estimates of historical inflation; other measures of historical inflation (CPI and RPI) lead to lower estimates of ex-post TMR.

3.43 Secondly, we asked the ONS about the relative advantages of each historical inflation series (RPI, CPI and CPIH) for the period 1950 to 1988. The ONS told us that:

> "The extended historical series essentially relies on a time-series model to estimate the formula effect over the period and remove it from RPI… this also relies on some strong assumptions around how RPI categories map to COICOP (classification of individual consumption by purpose), and of course any forecasting model like this can only be indicative."
>
> "… the historical data are purely indicative, and are provided for analytical purposes. They're much less robust than the current national statistics so that should be factored into any decision on how to use them. There will always be a large degree of uncertainty involved with historical modelling, particularly over such a protracted period of time."
>
> "RPI has the advantage of having been collected and compiled in real time over the period 1950 to 1988 - the importance of which shouldn't be under-estimated. However, there are also a number of shortcomings of the RPI that make it less robust as a measure of inflation when compared to alternatives like CPIH and CPI."

[72] DNOs also said 'primary reliance' and 'most weight', not exclusive reliance or all weight, should be placed on ex post approaches.

> "… the estimates for CPIH and CPI Housing were modelled independently of one another, with specifications that reflect the properties of the formula effect at their respective aggregate division levels. This means that the difference - which conceptually is the OOH [Owner Occupiers' Housing costs] component (including Council Tax, which is a cost for all households) - is really a modelling residual and won't necessarily be well behaved or a good indication of how owner occupiers' housing costs have changed over time."
>
> "The extended historical series essentially relies on a time-series model to estimate the formula effect over the period and remove it from RPI… this also relies on some strong assumptions around how RPI categories map to COICOP (classification of individual consumption by purpose), and of course any forecasting model like this can only be indicative."

3.44 Thirdly, most TMR evidence suggests that investors are assuming a lower TMR than 6.5%, including:

- Professional forecasts (see RIIO-ED2 DDs[73] and para 3.139 below)
- Outturn data for World and World excluding US regions, both of which tend to be lower or similar to outturn data for the UK region

3.45 Fourthly, all of the cross-checks we provided in DDs suggested the cost of equity was lower than the Step 1 CAPM value. We consider the reason for this may be that the TMR assumption reflects realised TMR more than the expected TMR. It seems less likely that beta and/or RFR estimates are sufficiently over-estimated to explain the difference between Step 1 CAPM values and Step 2 cross-check values.

3.46 Aside from the CPIH back-cast data, we did not receive any other detailed evidence to justify a change to the TMR mid-point (6.5%, CPIH). In response to UKPN's suggestion to use a different averaging approach, our view is that 6.5% is robust because it is consistent with multiple averaging techniques. For example, 6.5% can be achieved by either: 1) adding an uplift to the geometric mean, or 2) making a deduction from the arithmetic mean.

3.47 In response to Citizens Advice's suggestion to use National Accounting Data, we are not currently aware of any robust evidence on this that would necessarily improve TMR estimation although we welcome further evidence on this for future price controls. We agree with Citizens Advice that TMR estimation should reflect a broad portfolio of assets, and that using only equity market information may be unduly narrow putting upward pressure on ex-post TMR estimates.

[73] See Table 17 here: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

Beta

3.48 In Draft Determinations,[74] we proposed an unlevered beta range of 0.285 to 0.335 and a notional equity beta range of 0.694 to 0.819.

Summary of consultation responses

Responses to FQ7: Do you believe that DNOs have a higher or lower level of systematic risk than the GD&T companies during their respective RIIO-2 periods?

3.49 All DNOs said they hold a higher level of systematic risk than the RIIO-GD&T2 price controls. They also suggest the comparator set should include European energy networks.

3.50 SPEN refer to two reports from Oxera[75] which provide "further justification as to why it is an error for Ofgem to give weight to UK water comparators...".

3.51 SSEN said that RIIO-ED2 is riskier than RIIO-GD&T2 because of: RoRE variability; asymmetric ODIs; and aggressive totex reductions. SSEN also refer to reports from Oxera[76], Imrecon[77], and Frontier Economics[78] (as listed in Table 2 above).

3.52 UKPN said that RIIO-ED2 is risker than RIIO-GD&T2 because: the debt index has less headroom; the incentive package is more asymmetric; the framework is more dynamic and complex as evidenced by 33 uncertainty mechanisms (UMs) proposed for RIIO-ED2 compared with 17 for RIIO-GD&T2; and a higher risk of mis-calibration given the volume of UMs.

3.53 NPg said "the risks created by decarbonisation are already current and material for DNOs, whereas for gas networks future stranding is less pressing and indeed may be dealt with comprehensively through already existing regulatory measures (or adaptations of these arrangements) and/or the opportunity to repurpose gas networks to carry zero carbon gases."

3.54 ENWL said "the scale of RIIO-2 baseline totex… relative to RIIO-1 closing RAV is significantly greater for ED2 relative to other energy sectors both on an individual and aggregated basis". ENWL said that higher relative investment implies the value of real options is greater, which in turn should mean a higher beta.

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[74] RIIO-ED2 Draft Determinations – Finance Annex
[75] 1) Oxera, Assessing the risks of GB energy networks, March 2022. And 2) Oxera, Cost of equity in RIIO-ED2 Draft Determinations, prepared for the ENA, 25 August 2022.
[76] Oxera, Traded yield spreads of water and energy networks, prepared for SSEN, August 2022
[77] Imrecon, Reframing our understanding of risk in regulated energy networks, prepared for SSEN, August 2022
[78] Frontier Economics, RIIO-ED2 Cost of Equity Cross-checks, prepared for SSEN, August 2022

3.55 NGED referred to its draft business plan where it estimated a notional equity beta of 0.76 to 0.82, which was supported by a report (dated November 2021) from Frontier Economics. In response to DDs, NGED refers to an updated Frontier Economics report[79] (dated August 2022) which "indicates a similar range, from 0.73 to 0.80, which again has a mid-point that is higher than the RIIO-GD&T2 value (of 0.759)".

3.56 NGN believe the gas distribution sector faces higher risks than DNOs, driven primarily by the higher tail-end risks resulting from the range of possible future demand scenarios for gas distribution network usage.

3.57 Centrica and Citizens Advice believe DNOs have a lower level of systematic risk than the RIIO-GD&T2 price controls.

3.58 Centrica identified three areas that provide upside opportunities for the DNOs instead of exposing the DNOs to higher systematic risk: 1) the incorrect assumption that the largest downside shown in any RoRE chart has precisely the same probability as the largest upside; 2) proposals that provide the DNOs with significant protection against downside risk; and 3) areas in which the proposed allowed return on capital is unnecessarily generous.

3.59 Citizens Advice refer to: 1) a lack of differentiation between evidence of outturn betas from volatile and stable market periods; 2) risk-reduction mechanisms in the RIIO-ED2 price control; and 3) that short-term betas can be distorted.

3.60 The CG note there are differences both up and down but continue to regard the overall net position between subsectors as very similar.

Responses to FQ8: What are your views on the relative risk comparison shown in Table 10?

3.61 Some DNOs were supportive of Table 10 in the RIIO-ED2 DD Finance Annex, in terms of value and content, while others were sceptical about whether it adds value or helps reliable inferencing.

3.62 NPg said a qualitative comparison is useful because there are no pure play electricity distribution companies in GB. NPg also said it was broadly in agreement with the specific risks identified in Table 10 in terms of the comparison between DNOs and GDNs. NPg believes stranding risk should be relatively low across all sectors.

3.63 SPEN support the view that DNOs have larger investment programmes as a proportion of RAV, compared with other sectors.

3.64 ENWL does not think Ofgem should use this type of analysis. It said "Table 10 presents a superficial and highly subjective interpretation of the relative risks of DNOs to other energy networks. Although all appear to be relevant risks to a greater or lesser degree, there is no attempt to

[79] Frontier Economics, Cost of Equity – Response to RIIO ED2 Draft Determinations, 23 August 2022, Section 4

consider the relative impact of each. We struggle to see how any assessment on risk can be conducted without any consideration of scale or impact". ENWL said Ofgem should consider in more depth: the relative scale of totex to RAV; implications of Net Zero; real options; the balance between ex-ante allowances and uncertainty mechanisms; and new evidence from Oxera.[80]

3.65 SSEN said "Ofgem's relative risk analysis is relatively simplistic and does not consider quantitative comparisons with other sectors including RIIO-ED1". SSEN said RIIO-ED2 exhibits: material financeability pressures; totex reduction challenges; and large asymmetric Outcome Delivery Incentives (ODIs).

3.66 UKPN "believe that Ofgem's assessment of relative risk in Table 10 of the [RIIO-ED2 Draft Determinations] Finance Annex is incorrect and under-estimates the risks for DNOs relative to GD&T". UKPN refers to its response to FQ7 in support of its view. On gas stranding risk, UKPN said "we note that Ofgem's baseline Future Energy Scenario for RIIO-ED2 is System Transformation which assumes that the majority of home heating transitions to hydrogen".

3.67 NGED believes Table 10 to be incomplete. NGED refers to advice from Oxera[81] and said that Ofgem should recognise the additional risk in the electricity distribution sector from: the level of investment; the focus on downside incentives; the level of uncertainty mechanisms; and potential changes in the sector (e.g. Ofgem's proposals in respect of the Access Significant Code Review (SCR)).

3.68 NGN said "the key problem is that this list of qualitative factors gives no sense of what the quantitative impact should be. While Ofgem may not be able to provide quantified estimates, we believe a qualitative expected orders-of-magnitude comparison should at least be possible". NGN set out their views and made suggestions in relation to columns 1 to 3 of Table 10 which discuss stranding risk and investments in distribution networks leading to lower risk for DNOs, and larger RoRE ranges; higher totex incentive rates and a larger scale of investment relative to RAV leading to higher risk for DNOs.

3.69 Centrica agree with the assessment relating to the areas in which systematic risk is lower than or is similar to that for the other network sectors. However, Centrica do not agree with the assessment that the DNOs are exposed to higher systematic risk in the three areas identified. Centrica believe all three areas identified in column 3 of Table 10 provide upside opportunities for the DNOs.

3.70 Citizens Advice do not believe increased investment opportunity and increased incentive opportunity within RIIO-ED2 should be used as

[80] Oxera, RIIO-ED2 balance of risks, prepared for the ENA, August 2022
[81] Oxera, RIIO-ED2 balance of risks, prepared for the ENA, August 2022

arguments for increased systematic risk of a company that justifies a higher cost of capital.

3.71 The CG believe relative risks are well set out in Table 10 of DDs.

Responses to FQ9: Do you have any evidence that suggests the beta for GD&T companies has materially changed since RIIO-GD&T2 Final Determinations in December 2020?

3.72 DNOs responded with different views, some said there was no evidence of major change while some said there was evidence to support a change.

3.73 NPg does not consider it likely that the underlying systematic risk of energy networks has changed materially since the RIIO-GD&T2 FD. However, NPg referred to its response to FQ7 for reasons why the RIIO-GT&T2 estimation method will understate the systematic risk of the electricity distribution sector.

3.74 NGED said "…the data does not support any significant change in assumed beta values since RIIO-GD2/T2". NGED also said "Larger variations are generally observed in beta estimates based on shorter sample lengths [but]… material changes in a short timescale is (sic) highly unlikely to reflect a true under-lying change in the systematic risk of the relevant companies." NGED added "Frontier consider it appropriate [in the June 2022 report] to slightly decrease their previous range for the unlevered beta compared to their earlier (November 2021) report by 0.01, to 0.30-0.33, with a new midpoint at 0.315".[82] However, NGED concluded that "…there have been increases in risk (see FQ7 above) that are not yet reflected in the data from which these beta values are calculated and so these should instead be taken into account when choosing a point value within the range.".

3.75 SPEN believes the beta used for RIIO-GD&T2 materially understates the systematic risk exposure faced by RIIO-GD&T2 networks (regardless of whether there was a change or not).

3.76 ENWL suggested the assessment of beta for RIIO-ED2 should be a fresh build up, rather than starting from a previous assessment for a different sector. ENWL said that beta should "…be estimated in a way that is consistent with the chosen horizon (20Y for Ofgem as per the tenor of the ILGs used for RFR)".

3.77 UKPN believe the relevant question is whether Ofgem has set the equity beta for electricity distribution correctly. UKPN believe Ofgem has erred and underestimated the RIIO-ED2 equity beta because: disproportionate weight is placed on water companies; the differential between the energy

[82] Frontier Economics, Cost of Equity – Response to RIIO ED2 Draft Determinations, a report prepared for NGED (WPD), 23 August 2022

beta and the water beta is insufficient; and Ofgem does not include beta evidence from other relevant comparators.

3.78 SSEN said "[y]es, new evidence is available following the RIIO-GD&T2 determinations which highlights that the asset beta has materially changed". SSEN refer to two Oxera reports[83] relative to regulated European energy networks. SSEN said there are six European networks that are appropriate comparators for inclusion.

3.79 The CG said that it "can see no reason for Ofgem to take a view of the appropriate beta different to that which it expressed in the FDs for the GD&T subsectors in December 2020".

3.80 NGN said that even if their view on the appropriate estimation methodology and the value of beta for the GDNs might differ from Ofgem's judgement, RIIO-GD2 is now settled and there is no beta modification possible. NGN added: "In relation to Ofgem's methodology used to estimate betas for the RIIO-ED2 price control, we believe that Ofgem has erred by placing too much weight on a sample of comparators that is not representative of the risk associated with energy networks".

3.81 Citizens Advice said: "Ofgem should be looking at how companies respond to periods of significant strong or weak market performance to reflect the cyclicality of companies to geta better picture of systematic risk". They encourage Ofgem to "look closer at how share prices, MAR, investor expectations all provide indicative evidence that safe havens for capital such as regulated assets benefit are at times inversely related to wider market performance".

Final Determination

3.82 We have decided on an unlevered beta of 0.311 in line with our position at DDs and in line with our final determination for RIIO-GD&T2.

Table 12: Unlevered beta, asset beta and notional equity beta range

Component	**Low**	**Mid**	**High**	**Ref**	**Source**
Observed gearing	50%	50%	50%	A	Ofgem judgement
Notional gearing	60%	60%	60%	B	Ofgem judgement
Unlevered beta	0.285	0.311	0.335	C	Ofgem judgement
Debt beta	0.075	0.075	0.075	D	Ofgem judgement
Asset beta	0.323	0.349	0.373	E	=C+(A*D)
Notional equity beta	0.694	0.759	0.819	F	= (E – (B*D)) / (1-B)

[83] 1) Oxera, Assessing the risks of GB energy networks, March 2022. And 2) Oxera, Cost of equity in RIIO-ED2 Draft Determinations, prepared for the ENA, 25 August 2022.

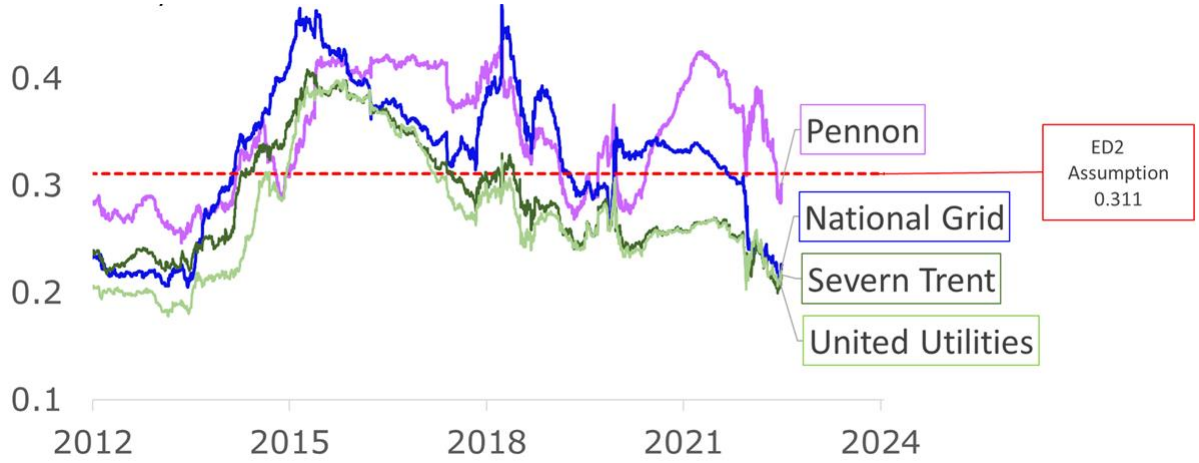
Source: Ofgem analysis

Rationale

3.83 We continue to believe that DNOs hold a similar level of systematic risk to the RIIO-GD&T networks because we have not seen good evidence to the contrary and because the best evidence still supports our view. We were not presented with any persuasive arguments that DNOs would have materially different risk than the RIIO-GD&T networks.

3.84 We continue to believe that UK companies, not European companies, provide the best proxies for DNOs. We also continue to believe that UK water companies provide a good reference point for DNOs. The CMA agreed, during the RIIO-GD&T2 appeals, that water companies are useful comparators for energy networks.[84] Frontier appear to have a similar view, as it said "…given the limited number of available companies, it is reasonable to construct a sample using all GB comparators which includes National Grid as the pure play energy network, and the three water companies, Severn Trent, Untitled (sic) Utilities and Pennon".[85] Figure 2 below shows that: 1) National Grid plc closely tracks UK water companies; and 2) short run beta values are now well below the RIIO-ED2 assumption of 0.311.

Figure 2: Short-run estimates are currently below the RIIO-ED2 assumption (2-year estimation window for unlevered beta)



3.85 We agree with NPg that it is unlikely that underlying systematic risk of energy networks has materially changed since the RIIO-GD&T2 FD. We also note that Frontier's suggested beta mid-point (0.315)[86] is very similar to our final determination of 0.311.

[84] Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)
[85] See Consultancy report E9: Frontier, cost of equity for Frontier's advice to NGED (WPD) dated August 2022
[86] Frontier Economics, Cost of Equity – Response to RIIO ED2 Draft Determinations, a report prepared for NGED (WPD), 23 August 2022

3.86 In response to DNO submissions that RIIO-ED2 is riskier than RIIO-GD&T2, we highlight that multiple price controls (not just RIIO-GD&T2) are captured in our beta assumption. Also, if RIIO-ED2 were higher overall risk than RIIO-GD&T2, we would have expected this to be reflected in an upward trend for National Grid Plc's beta since its acquisition of WPD (now NGED). However, if anything, Figure 2 suggests a falling beta for National Grid plc, not a rising one.

3.87 Similarly, in response to DNO submissions that electricity distribution is higher overall risk than RIIO-GD&T (e.g. due to the debt index, scale of investment, Net Zero, UMs, real options, incentive mechanisms, totex cuts/baselines etc), we refer again to Figure 2. If electricity distribution were notably higher risk than RIIO-GD&T, we would have expected the most recent 2-year beta for National Grid plc to have increased, given the now larger exposure to electricity distribution assets and lower exposure to RIIO-GD&T assets. However, if anything, Figure 2 suggests the opposite inference.

3.88 Further, in response to UKPN's argument that UMs indicate higher risk, we have a long-standing view that UMs reduce risk, as noted in the 2010 RIIO Handbook.[87] Oxera also appear to agree that UMs reduce risk for network investors.[88] Citizens Advice also said that UMs lower risk.[89] We also note that in the RIIO-GD&T2 appeals, the CMA said that "[w]e consider that the UMs can help mitigate some form of uncertainty arising in the price control".[90] Further, any risks associated with UMs, such as implementation or timing risks, are unlikely to be systematic (beta) risks, in our view.

3.89 We considered whether 0.311 was too precise and whether we should round-up or round-down the unlevered beta. However, we agree with the CG that there is no good reason to take a different view for the DNOs than was taken for the RIIO-GD&T2 networks (which was found by the CMA to be 'not wrong' on appeal).

3.90 In response to the suggestion from Citizens Advice to look at how companies respond to periods of strong or weak market performance, we find Figure 2 helpful: it supports the view that UK networks are seen as a 'safe haven' during times of wider market turbulence and during times of unexpectedly high inflation.

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[87] Handbook for implementing the RIIO model (ofgem.gov.uk)

[88] See Consultancy report E10: Oxera, balance of risks

[89] https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf#page=183

[90] https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf#page=278

Outcome of Step 1: The Capital Asset Pricing Model evidence

Table 13: Step 1, CAPM-implied cost of equity, RIIO-ED2 forecast (60% notional gearing)

Component	Low	Mid	High	Ref	Source
Risk-free rate	1.23%	1.23%	1.23%	A	Table 11
Notional Equity beta	0.694	0.759	0.819	B	Table 12
Total Market Return	6.25%	6.50%	6.75%	C	Paragraph 3.39
CAPM-implied cost of equity	4.71%	5.23%	5.75%	D	D = A + B * (C-A)

Step 2: Cross-checks

3.91 In Draft Determinations,[91] we presented a summary of cross-check evidence. Our consultation position was that cross-checks provide greater support for the lower half of the CAPM-implied range from Step 1.

Summary of consultation responses

Responses to FQ10 Do you agree with our interpretation of the cross-check evidence?

3.92 DNOs generally disagreed with our interpretation of cross-checks.

3.93 SPEN said it disagreed with our interpretation and referred to two additional areas about MAR evidence that were not considered in the RIIO-2 appeals. First, there is 'stickiness' in investors' expectations around the terminal value, as per Oxera's report.[92] Second, SPEN said that "MARs are explained by higher valuations for equities in general, and not the "generosity" of regulatory settlements", while referring to Frontier's report.[93]

3.94 SSEN said it disagreed with our interpretation. It referred to Oxera's cross-check (Asset Risk Premium (ARP) versus Debt Risk Premium (DRP)) and said there are flaws in the MAR and OFTO data respectively. SSEN refer to Frontier Economics[94] who find MARs unreliable when estimating the cost of equity.

3.95 NPg said Ofgem's cross-checks are flawed and incomplete. NPg believe the limited robustness of many cross-checks is not properly accounted for and Ofgem's set of cross-checks is not "appropriately supplemented".

3.96 ENWL said Ofgem's cross-checks have significant flaws. It said that there is a material inconsistency in the evidential bar, where Ofgem has a

[91] See Table 18 here: RIIO-ED2 Draft Determinations – Finance Annex
[92] Oxera, Market-to-asset ratios as a cost of equity cross-check, August 2022
[93] Frontier, RIIO-ED2 Cost of Equity Cross-checks, August 2022
[94] Frontier Economics, RIIO-ED2 Cost of Equity Cross Checks, August 2022

lower threshold for including imperfect cross-checks than it applies to those proposed by companies.

3.97 UKPN said limited weight should be placed on the proposed cross-checks. It believes Ofgem should expand its portfolio of cross-checks to include alternative market-based valuation methods. It refers to Frontier's report[95] and said that a Dividend Growth Model cross-check suggests a higher cost of equity, with a mid-point of 5.7%.

3.98 NGED said "if weight was to be attached to cross-checks they would on balance support use (sic) of a higher cost of equity".

3.99 Citizens Advice said:

> "[w]e see no evidence to give confidence that the CAPM results are not too high. It is not a sufficient reason to ignore cross-check evidence because it is not 'perfect'".

3.100 NGN did not agree with our interpretation, stating that "Ofgem gives weight to a set of cross-checks where there is a weak conceptual underpinning and/or limitations in the evidence base while failing to consider other valid cross-checks, which have a lot more robust economic underpinnings."

3.101 The CG and Centrica both agreed with Ofgem's interpretation of the evidence.

Responses to FQ11: Do you agree with our updated MAR and OFTO cross-check techniques, in terms of drawing better inferences for RIIO-ED2?

3.102 DNOs did not consider these cross-checks to be robust. Most DNOs referred to consultancy reports from Frontier[96] and Oxera.[97]

3.103 SPEN said OFTOs were not relevant comparators given the difference in risk exposure. SPEN said that bid prices cannot be equated to expected returns given "…expectations for cost, tax and financial outperformance and other factors.".

3.104 NPg said "[t]he main shortfall with relying on MAR estimates is that these capture short-term market fluctuations". NPg refer to Frontier Economics' analysis and said networks "have a lower valuation than the wider FTSE 100 index, indicating that there is no evidence to suggest that the networks are overvalued". On OFTOs, NPg said "we agree with Ofgem that these [OFTO bids] have some relevance in that OFTO bids also relate to electricity network assets" but NPg said OFTOs have lower revenue risk; operational risk; and business risk.

3.105 ENWL said significant flaws remain with both cross-checks. It said "Ofgem has failed to provide substantive evidence of the causal link

[95] Frontier Economics, RIIO-ED2 Cost of Equity Cross-checks, August 2022
[96] Frontier Economics, RIIO-ED2 equity cross checks, August 2022
[97] Oxera, Market to asset ratios as a cross check for the cost of equity, August 2022

between traded RAV premia, expected outperformance and the deviation of required return from allowed return".

3.106 SSEN said "MAR and OFTO data is unobservable, unreliable, and contains a series of interpretation errors by Ofgem. There are more reliable cross checks including the use of ARP vs DRP cross checks as supported by analysis from Oxera… Ofgem have erroneously interpreted the impact of RAV growth, different asset classes and the presence of terminal values which more than explain returns or transaction premiums."

3.107 UKPN said "… market valuation is influenced by factors which are unpredictable, not based on fundamental valuation models and certainly outside the regulators' control". UKPN said "there are several reasons why observed levels of MARs above 1x do not automatically mean that investors' required cost of equity is below the regulatory allowed CAPM-based estimate".

3.108 NGED said "…new evidence demonstrates no correlation between allowed return and MARs… [and] new evidence demonstrates that, despite MARs being greater than 1, networks are not overvalued… [and] Ofgem's updated MARs cross checks are flawed".

3.109 Citizens Advice agree with the approach proposed in Draft Determinations.

3.110 NGN said "we do not believe that Ofgem's analysis allows drawing better Cost of Equity inferences for RIIO-ED2". It referred to reports from Frontier Economics and Oxera.

3.111 The CG said "We agree with Ofgem's interpretation of the evidence, as set out in paragraph 3.65 of the DD and also with its conclusion that the evidence points to a lower Cost of Equity allowance than 4.75%".

3.112 Centrica "agree with the updated (Market to Asset Ratios) MAR and Offshore Transmission Network Operator (OFTO) cross-check technique".

Responses to FQ12: Do you agree with the cross-checks we have used and are there other cross-checks we should consider?

3.113 DNOs suggested Ofgem consider cross-checks proposed by Oxera[98], Frontier[99] and KPMG[100]. Oxera propose we consider the differential between the ARP and DRP. Frontier propose we consider Dividend Growth Models (DGMs) and long-term profitability. KPMG propose multi-factor models as a cross-check.

3.114 SPEN said "Frontier's results reveal that the implied cost of equity, across all scenarios and for all companies, is higher than the 4.75% allowed equity return proposed by Ofgem in its RIIO-ED2 DD" based on DGMs.

[98] Oxera, Cost of equity in RIIO-ED2 Draft Determinations, August 2022
[99] Frontier, RIIO-ED2 Cost of Equity Cross-checks, August 2022
[100] DNOs did not submit this report for us to consider in more detail.

3.115 NPg said "The DGM estimates the cost of equity using the networks' stock prices which are based on the present value of the sum of discounted future dividend payments. This is preferable to the MAR cross-check in that the DGM considers future cash flows and requires fewer assumptions."

3.116 ENWL said "Multi-factor models are well established in academic research and can be used as an alternative to the CAPM as it is considered to have statistically more explanatory power when explaining returns.". ENWL also said "We are firmly of the view that financeability is a critical and unique cross-check that should be included in the toolkit".

3.117 SSEN said "the fact a premium is paid today in a transaction facilitates the expectation that a premium will be paid in the future" in reference to MAR evidence.

3.118 UKPN said "…our DGM analysis indicates that the 4.75% suggested by Ofgem could indeed be too low." with regards to DGMs. UKPN said "… we continue to believe that the ARP-DRP cross check remains a valid cross check for the cost of equity. OXERA has recalculated the ARP-DRP differential and have shown that it decreases from 1.73% in RIIO-ED1 to 0.93% in RIIO-ED2. This further strengthens the argument that Ofgem should revise its cost of equity upwards".

3.119 NGED said "there are a range of additional cross-checks that Ofgem should have considered - ARP-DRP, DGM and a long-term profitability cross-checks (sic) – and all of these support a higher cost of equity than Ofgem has proposed in the Draft Determinations". On the DGM, NGED said that Frontier's DGM cross-check "… is more established and more reliable than Ofgem's, therefore provides further strong evidence that the 4.75% cost of equity proposed in the RIIO-ED2 draft determination is too low. NGED said Frontier's "… DGM model does not require any prior belief or assumption to be made on what an appropriate or target cost of equity should be, whereas the approach adopted by Ofgem and other regulators to use the MAR requires a prior judgement of what an appropriate MAR value should be. However, [Frontier's] DGM does require estimates of short and long-term dividend growth rates". On profitability, NGED also said that "Ofgem should assess, as a cross-check, how the proposed level of allowed equity returns compares to the outturn level of profitability for comparable businesses, or even the market as a whole."

3.120 Citizens Advice believe "the cross-check generated by applying an equity beta of 0.9 to the investment managers TMR is upwardly biased as an equity beta of 0.9 is implausible". Citizens Advice add:

> *"We think that MAR evidence represents a key indicator of generosity to companies. We want to see cross-checks that show due consideration to the evidence of estimated risk of outperformance. Currently we think that this is missing and*

> *Ofgem is putting too much store by the indicators of past performance in differently defined price controls".*

3.121 The CG said:

> *"We consider evaluation of actual recent transactions, both related to land-based networks of various kinds and to OFTOs, to constitute important, and necessary, cross-checks to Ofgem's CAPM-based analysis".*

3.122 NGN expressed view that the set of cross-checks used by Ofgem is incomplete. NGN suggest including additional cross-checks and affording appropriate weight when interpreting results, which include: CAPM multi-factor models cross-check, Oxera's ARP–DRP cross-check, the DGM and the longer-term profitability cross-checks suggested by Frontier Economics.

3.123 Centrica agree with the cross-checks used.

Responses to FQ13: Do you consider we should put greater weight on cross-checks or reconsider our CAPM parameters in light of the adjusted cross-check results?

3.124 DNOs generally did not suggest greater weight should be placed on the proposed cross-checks.

3.125 NPg said "We agree with Ofgem's conclusion not to apply a specific adjustment to the cost of equity following the range of cost of equity estimates obtained from the cross-check evidence."

3.126 ENWL said "… we do not support putting greater weight on these cross-checks or reconsidering CAPM parameters in the event Ofgem's approach remains unchanged".

3.127 SSEN said "Ofgem incorrectly gives significant weight to cross checks with flaws and limitations in their evidence base and less weighting to more superior cross checks such as the asset risk-debt risk premium (ARP-DRP) framework".

3.128 UKPN said "We remain of the view that limited weight should be placed on the cross checks proposed by Ofgem and they should not be used as the prime method to set the cost of equity".

3.129 NGED said "The primary method of setting CoE should continue to be CAPM, which is what the DDs do, with cross checks used as a sense check only. Given the concerns and limitations… the cross checks should not be used to override the CAPM result."

3.130 Citizens Advice said "We think Ofgem should reconsider the CAPM parameters", deeming the cost-of-equity allowances and incentive scheme parameters to be too generous.

3.131 NGN said "the evidence suggests completely the opposite conclusion [to that of Ofgem's] – that an upward revision to the allowed Cost of Equity is required".

3.132 The CG were persuaded that the cross-checks supported a lower equity allowance. They said:

> *"…our current view is that Ofgem will need to reconsider the appropriate response to its own convincing arguments that the cost of equity for the DNO sub-sector is lower than 4.75%"*
>
> *"[we] see no reason not to set the Cost of Equity allowance nearer to the level to be derived from analysis of recent transactions".*

3.133 Centrica "believe greater weight should be placed on the cross-checks and the Capital Asset Pricing Model (CAPM) cost of equity should be adjusted in light of the evidence derived from the cross-checks".

Final Determination

3.134 After considering responses on cross-checks, we have decided not to change our CAPM mid-point, consistent with RIIO-ED2 DDs and RIIO-GD&T2 FDs.

Rationale

3.135 In our view, the cross-check evidence does not support the DNOs' view that our CAPM mid-point is too low. If anything, the cross-check evidence is more consistent with the view that our CAPM mid-point is higher than the true cost of equity, as suggested by Citizens Advice and the CG. We agree with UKPN not to use cross-checks as the prime method for setting equity allowances.

3.136 We agree with the DNOs that no cross-check is perfect, and we are open to considering other cross-checks. However, we were not persuaded by the cross-checks proposed by DNOs. The DGM proposal from Frontier relies heavily on short and long-term dividend growth rates, as noted by NGED. The ARP-DRP differential tends to rely heavily on previous regulatory decisions or on small samples of data. A profitability cross-check would be back-ward looking and heavily dependent on previous regulatory decisions. DNOs did not submit the KPMG report on multi-factor models and so we were unable to consider this in any detail.

3.137 We agree with the DNOs that MARs could reflect 'stickiness' in investors' expectations, and that the terminal value could be above 1. However, this suggestion is consistent with our interpretation that the expected return on equity is higher than the cost of equity.

3.138 We considered whether there were material changes in cross-check evidence that might alter the summary we provided in the ED2 DDs.[101] Overall, the cross-check evidence has not fundamentally changed. DNOs told us that MARs, for listed network companies, trended lower during

[101] See Table 18 here: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

2022 compared to previous years. However, on 25th November, SSE announced an agreement to sell 25% of its electricity transmission business, SSEN Transmission, to Ontario Teachers' Pension Plan Board (OTPP) - this transaction suggested a large MAR of 1.67, we estimate.[102] In our view, there is a clear read-across to RIIO-ED2 because we use the same methodology to set allowed returns for RIIO-ED2 as we did for RIIO-GD&T2. This deal between SSE and OTPP suggests investors are confident about financeability, and confident that expected returns exceed required returns. We believe this shows that investors are confident about all energy networks, given the similarities between the price controls.

3.139 We note three professional forecasts of TMR have increased (Blackrock[103], Quilter[104] & Aberdeen[105]) although Vanguard[106] decreased. We have not seen any material change in the other cross-checks: Modigliani-Miller; OFTOs; or Infrastructure Funds.

Step 3: Setting a baseline allowed return

3.140 In Draft Determinations,[107] we proposed a baseline allowed return on equity of 4.75% in line with our CAPM mid-point. We proposed not to adjust for expected outperformance of 25 bps, as anticipated in our RIIO-ED2 SSMD Finance Annex.

Summary of consultation responses

Responses to FQ14: Do you agree that we should not adjust for expected outperformance when setting baseline allowed returns on equity?

3.141 DNOs and NGN agreed with the DD proposal not to adjust for expected outperformance.

3.142 SPEN said "This is consistent with the outcome of the CMA's final determination in the RIIO-GD&T2 appeals."

[102] See SSE publication here. We derive a MAR of 1.67 using SSE's values for 'cash proceeds' of £1.465bn divided by the equity stake of 25% plus the value of 'net debt and debt-like items' of £2.488bn, all divided by a RAV of 'almost £5bn'. (1.465/25% + 2.488) / 5 = 1.67.
[103] https://www.blackrock.com/institutions/en-us/insights/charts/capital-market-assumptions
[104] https://platform.quilter.com/investments-and-funds/adviser-models/strategic-asset-allocations/latest-asset-allocation-quarterly-reviews/?concertinaId=concertina__link--61542-1#:~:text=0.71%25%20to%20become-,7.48%25%20p.a,-.%20Expected%20volatility%20increases
[105] https://abrdnforecaster.com/forecaster
[106] https://www.vanguard.co.uk/content/dam/intl/europe/articles/shared/isgvemo-chartbook-eu-en-pro.pdf#page=9
[107] RIIO-ED2 Draft Determinations – Finance Annex

3.143 NPg said "There is simply no way for these fundamental deficiencies with the outperformance wedge to be fixed, and as a result it would be wrong for Ofgem to introduce an outperformance wedge at RIIO-ED2."

3.144 ENWL said "While removal of the outperformance wedge is welcome, we do have concerns that Ofgem has simply offset this change by significantly increasing the scope and likelihood of incentive penalties and totex under-funding."

3.145 SSEN said "In line with the CMA we believe it would be incorrect for Ofgem to implement any other form of mechanism for outperformance within its cost of equity allowance"

3.146 UKPN said "Yes, we agree that Ofgem should not adjust for expected outperformance when setting baseline allowed equity returns".

3.147 NGED said "We consider that the points made by the CMA are equally relevant to the RIIO-ED2 price control."

3.148 Citizens Advice said "We do not think that Ofgem has taken the correct approach by not explicitly recognising the significant scope for outperformance in RIIO-ED2". It added that "[we] have always been supportive of the concept of the outperformance 'wedge'" but state "…it is better that Ofgem should find a different method of dealing with the problem".

3.149 Centrica does "…not agree with the proposal to not adjust for expected outperformance" since "The CMA did not state that expected outperformance, or what we phrase as 'embedded' outperformance, should not be addressed".

Responses to FQ15: Do you believe there is new evidence which would support an adjustment downwards (e.g. expected outperformance) or (e.g. aiming up) that we have not yet considered?

3.150 DNOs referred to asymmetric risks and suggest aiming upwards to obtain a "fair bet". DNOs referred to an Oxera report in support of their suggestion to 'aim up'.[108]

3.151 SPEN said "Given Oxera's findings that there is negative skew of the balance of risks in the RIIO-ED2 package, as set out in the RIIO-ED2 DD, and that these sources of downward bias cannot be addressed at source by the Final Determinations, and the very material and essential investment required to make progress to achieving Net Zero Ofgem should aim up within its cost of equity range when selecting its point estimate for the allowed equity return for RIIO-ED2 in order to restore balance to the price control and ensure a 'fair bet' for DNOs."

3.152 NPg said "… the costs to society of setting the WACC too low are much higher than those related to setting the WACC too high". NPg said

[108] Oxera, RIIO-ED2 balance of risks, Prepared for the Energy Networks Association, August 2022

Oxera's report "… identifies a wide range of areas where the calibration of the price control in the DD leads to DNOs facing asymmetric downside risk, i.e. more probability of negative outcomes than positive. Oxera notes that the best way to address such risk is at source, by getting the calibration right. An alternative method if skew is not addressed at source would be to aim up".

3.153 ENWL said "The degree of implied asymmetry in the proposed RIIO-ED2 package supports the requirement to aim up from the mid-point of the CoE range to compensate investors for the expected loss".

3.154 SSEN said "Ofgem should aim up when setting the CoE as good regulatory practice and to ensure consumers are protected from under investment when delivering NetZero. Substantial academic and empirical evidence support aiming in at least the 75th percentile if not significantly higher towards the 90th percentile".

3.155 UKPN said "…one of the reasons that the CMA aimed above the midpoint of its cost of equity range [in the PR19 redeterminations] was the asymmetric nature of the incentive framework to which the water companies were exposed." UKPN also said "the CMA noted that "GEMA submitted that it accepted, in principle, that material net asymmetric risk in a price control settlement would warrant a degree of aiming up on the allowed return on equity."[109] UKPN added "… in addition to the asymmetric nature of the incentive framework Oxera illustrates in their paper, Ofgem's approach to a range of elements of the RIIO-ED2 price control are asymmetric. This includes totex benchmarking, RPEs, ongoing efficiency, and severe weather."

3.156 NGED said "Given the level of investment required to deliver net zero, the focus on downside only incentives, the level of uncertainty mechanisms in RIIO-ED2, and the significant potential changes and risk in the sector, it is critical that Ofgem sets appropriate financial parameters... The consequences arising from setting the allowed return too low are far greater than the consequences of setting it too high."

3.157 NGN said "We are not aware of any robust evidence which would support a downward adjustment, but there are some indications implied by the robust set of Cost of Equity cross-checks to the contrary". NGN "believe that the correct calibration of the price control should be done at the source, ensuring that the financial package represents a "fair bet"".

3.158 Citizens Advice said that "CMA decision requires something to be done on outperformance" and "[we] do not think that Ofgem has taken the correct approach by not explicitly recognising the significant scope for outperformance in RIIO-ED2."

[109] Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk) paragraph 5.837.

3.159 The CG said "…there is compelling evidence of systemic outperformance of price reviews, probably based primarily on information asymmetry".

3.160 Centrica said "There is evidence in the consultation that supports an adjustment downwards. A downward adjustment is also necessary because of the interaction with the Returns Adjustment Mechanism RAM".

Final Determination

3.161 We have decided not to adjust for expected outperformance and to set the baseline allowed return on equity at the mid-point of our CAPM range, 5.23% CPIH-real, as shown in Step 1 (see Table 13) above.

Rationale

3.162 We agree with the DNOs that it would be consistent with CMA's final determination in the RIIO-GD&T2 appeals not to adjust downwards for expected outperformance.

3.163 We agree with the CG that there is evidence of systematic outperformance and we have been mindful of this when finalising the RIIO-ED2 package. In response to the Citizens Advice suggestion to use a 'different method', we have attempted to set fair targets and a fair bet for companies and consumers.

3.164 We do not believe the RIIO-ED2 settlement is skewed against the DNOs as suggested by Oxera, UKPN, ENWL, NPg and SPEN. For more information on the overall package of incentives including final RoRE calibrations, see the 'Core Methodology' document and company-specific annexes published alongside this finance annex. It is not correct to assume that the package is asymmetric simply because the maximum rewards are smaller than the maximum penalty, with reference to RoRE ranges. It is entirely possible that rewards are more likely than penalties even though the maximum reward is smaller than the maximum penalty. We also note that investors' expectations should reflect the impact of RAMs thresholds, which dampen the impact of maximum downsides as shown in the RIIO-ED2 DDs.[110]

3.165 In response to SSEN and SPEN, we do not believe that aiming up is an effective method of ensuring investment for Net Zero because it would risk over-remuneration without guaranteeing investment. This issue was explicitly considered in 2021 during the RIIO-GD&T2 appeals, where the CMA concluded[111] that:

> *"…aiming up to address Net Zero risk today would provide shareholders with an additional return with no commensurate benefit to current or future customers in terms of bringing*

[110] RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)
[111] Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)

> *forward necessary investment. This would also likely lead to a situation of 'double' rewarding shareholders if risks do crystalise and mitigation mechanisms are put in place in the future."*

3.166 In response to SSEN's point about good regulatory practice, our view is that good regulatory practice will reflect the relevant circumstances and available evidence. This issue was also considered in 2021 during the RIIO-GD&T2 appeals, with the CMA noting[112] that:

> *"… with regard to the principle of regulators aiming up in previous price controls, we note GEMA's evidence that it has also aimed straight and aimed down in previous price controls, ie not all the precedent supports aiming up."*

Return on Regulatory Equity (RoRE)

3.167 In this section, we present our view on the package of incentives for RIIO-ED2. Figure 3 below reflects:

- Outcome Delivery Incentives (ODIs), showing the plausible upside and downside returns;
- Totex upside and downside, assuming 10% under-or-overspends;
- Return Adjustment Mechanisms (RAMs) thresholds, as described in chapter 8; and
- Baseline RoRE values for RIIO-ED2.

[112] Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)

Figure 3: RIIO-ED2 ex ante RoRE ranges (Post RAMs)

Source: Ofgem analysis

3.168 We consider that our RIIO-ED2 price control package strikes an appropriate balance between the scope for outperformance for high performing companies and the scope for underperformance for poorly performing companies.

3.169 We also highlight that there is a difference between possible outcomes and probable outcomes. It would be incorrect to assume that the largest downside shown in any RoRE chart has precisely the same probability as the largest upside. Figure 3 presents the post-RAMs RoRE ranges to help demonstrate the final calibration of the RIIO-ED2 package after accounting for the potential impact of RAMs thresholds. For further detail, please see Figure 8 in Appendix 5 where we present the pre-RAMs RoRE ranges. Additional information can also be found in the company-specific annexes and the supporting files we have published alongside these Final Determinations.

4. WACC allowance

Background

Purpose	The real WACC allowance remunerates debt and equity investors for their investment in network services. It reflects expected inflation and is supplemented by outturn inflation which is added to RAV on an annual basis
Benefits	Accurate remuneration will secure network investment during RIIO-ED2 and help keep consumer charges in line with efficient costs.

4.1 Our Final Determination on the baseline allowed return on capital for RIIO-ED2 is summarised in Table 14, and reflects our decisions from chapters 2 (allowed return on debt), 3 (allowed return on equity) and 5 (financeability).

Table 14: Final Determinations on the baseline allowed return on capital[113] (average for the five years ending 31st March 2028, CPIH real)

Component	**Frequent issuers of debt (EMID, EPN and SSES)**	**Infrequent Issuers of debt (All DNOs except EMID, EPN and SSES)**	**Ref**	**Source**
Notional Gearing	60%	60%	A	Paragraph 5.1
Cost of equity allowance	5.23%	5.23%	B	Paragraph 3.7
Cost of debt allowance	3.01%	3.07%	C	Table 4
WACC allowance (vanilla)	3.90%	3.93%	D	D = A * C + B * (1 – A)

Source: Ofgem analysis

4.2 The WACC allowance in Table 14 will change during RIIO-ED2 to reflect the combined effect of the debt indexation and equity indexation mechanisms, as shown in the 'WACC allowance model' published

[113] We present here a forecast of baseline allowed returns. Final allowances for debt and equity will reflect changes in market observations for debt costs and Index Linked Gilts, as per the WACC allowance model. Equity values on a post-tax real basis, debt values on a pre-tax real basis. Values may not sum due to rounding.

alongside these Final Determinations.[114] The WACC allowance in Table 14 is in CPIH real terms, reflecting expected inflation for equity and debt investors, in line with our policy of adding outturn CPIH inflation to the RAV.

4.3 In Draft Determinations, we highlighted that there may be risks and costs to consumers during periods of high inflation.[115] We noted that the WACC allowance was based on expected inflation whereas the RAV is adjusted annually to reflect outturn inflation. In the RIIO-ED2 DDs, we asked three consultation questions associated with this.[116] In the remainder of this chapter, we summarise stakeholder responses to these questions, before confirming our position.

Summary of consultation responses

Responses to FQ16: Do you think we should adjust our approach to allowed returns (noting our approach to expected inflation for WACC and outturn inflation for RAV as described above) so that outturn inflation does not permit the notional company to generate real equity returns that are materially higher or lower than our cost of equity allowance? What would be the consequences to consumers and DNOs of doing so?

4.4 All DNOs as well as SGN, United Utilities (UU) and NGN do not believe any adjustment to the approach to allowed returns should be made in RIIO-ED2. Their reasoning is summarised below.

4.5 UKPN suggest the rating agencies would view such a change negatively. SPEN and SSEN believe it would lead to a higher cost of capital. SSEN said "Ofgem's approach would lead to a higher cost of capital to compensate investors either due to reopening a price control and the concerns around regulatory stability, or the introduction of inflation risk on a whim due to what many economic commentators believe are short term market conditions", whereas SPEN said that "Companies will have to react and rebalance their portfolios, incurring additional costs despite potentially being neutral under the current approach". NPg add: "If Ofgem were to make changes now, this would contradict the companies' legitimately-held expectations about the risks they were bearing at the time they made long-lasting decisions about their debt structure. All investors would then wish to modify their financial structure to return to their chosen overall exposure on inflation and this would impose significant costs, without anything like sufficient notice".

[114] The WACC allowance model now bases its forecast of the utilities iboxx based on a twenty-year time horizon, in order to match the tenor of the risk free rate forecast. Additionally, the previous debt forecast assumed an immediate reversion in the spread between nominal gilt rates and the utilities iboxx rate to the three-year average level, whereas the updated version phases that impact over one year.
[115] See page 58 here: RIIO-ED2 Draft Determinations – Finance Annex
[116] See page 60 here: RIIO-ED2 Draft Determinations – Finance Annex

4.6 SGN suggest the change would be a signal of regulatory uncertainty and would discourage investments required for the transition to Net Zero.

4.7 Citizens Advice believe that Ofgem should adjust its approach. They said: "We believe that current forecast inflation rates, and the degree of uncertainty around them, are beyond what could reasonably have been expected when the approach to allowed returns was being designed".

4.8 The CG do not urge any action but encourage Ofgem to give it thorough review and analysis in the coming months. Centrica also recommend considering whether the approach should be adjusted in greater detail.

Responses to FQ17: If you believe we should make such an adjustment, what is the best method for making it?

4.9 All DNOs, SGN, UU and NGN do not believe any adjustment to the approach to allowed returns should be made. ENWL, UKPN and NGN believe that such a fundamental change, if considered, should be subject to extensive analysis and consultation as part of a future price control process.

4.10 Citizens Advice believe Ofgem should make an adjustment to the current approach. They state that the RIIO-ED2 framework already includes a return adjustment mechanism that is designed to protect consumers and companies against returns that significantly vary from expectations and believe a return adjustment mechanism should also apply to real equity returns arising from inflation.

Responses to FQ18: If you don't believe we should make such an adjustment, how should we ensure that the fairness of the price control is maintained to prevent ex post returns from deviating from ex ante expectations for both consumers and investors?

4.11 NPg, SPEN, SSEN, UKPN, NGED, SGN and NGN believe no steps should be taken as there is no indication that the current approach is unfair. SPEN's view is that there is no reason to expect outturn inflation to be systematically above or below that forecast over time.

4.12 ENWL agree with the idea that it is potentially unfair when ex post returns materially deviate from ex ante expectations. ENWL believe this situation can be caused by number of factors (basis risk, inflation etc.) so would be opposed to any adjustment to the debt allowance mechanism adjusted for one set of beyond investor/consumer-control circumstances (i.e. inflation) without considering all other similar circumstances.

4.13 The CG do not urge any sudden actions but consider this issue to be one of the key potential risks of the RIIO-ED2 price control which needs to be given thorough review and analysis over the coming months.

Final Determination

4.14 We have decided not to adjust our approach to inflation for RIIO-ED2 but will consider the issue in more detail on a cross-sectoral basis during

2023. This means that the real WACC allowance is based on expected CPIH inflation whereas the RAV is adjusted annually to reflect outturn CPIH inflation.

Rationale

4.15 We agree with the DNOs that any adjustment to the approach to inflation should be subject to further analysis and consultation.

4.16 Our approach to inflation is a cross-sector issue. We intend to consult further on this issue and consider it in more detail during 2023, where we can consolidate stakeholder views and our consideration of these in more detail.

5. Financeability

Financeability measures

Purpose	To check that all components of our FDs, when taken together, allow a notional efficient operator to generate cash flows sufficient to meet its financing needs.
Benefits	Allowing continuing investment in networks, which benefits consumers by allowing the continuation of stable and well-functioning networks that support energy supply at an efficient cost to consumers.

Final Determination summary

5.1 The table below provides a summary of our Final Determination.

Parameter	**Final Determination (FD)**	**Draft Determination (DD)**
Notional gearing	60%	60%
Financeability Check	We consider all licensees are financeable on a notional capital structure basis, taking account of cost and incentive allowances, cost recovery and allowed returns in these FDs.	We also considered all licensees were financeable at DD.

Background

5.2 In performing its duties, Ofgem must have regard to the need to secure that licence holders are able to finance the activities which are the subject of obligations on them.

5.3 We use a financeability assessment to ensure that, when all the individual components of our determination are taken together (including totex, allowed return, notional gearing, depreciation, and capitalisation), a notional efficient operator is able to generate cash flows sufficient to meet its financing needs.

5.4 As discussed in Chapters 2 and 3 above, we have updated the assumptions for equity and debt based on further work undertaken since DDs and business plan submission and changes in macro-economic factors such as interest rates and inflation forecasts.

5.5 Our Business Plan Guidance (BPG)[117] required companies to submit a financeability assessment in their Business Plans, accompanied by Board assurance that either the plan is financeable on both the notional and actual capital structure bases or that they have considered all applicable mitigating measures to improve financeability. The BPG also required companies to provide an explanation of their target credit rating supported with evidence of the financial metrics on both a notional and an actual basis. We use this information to inform both our assessment of company Business Plans and our own financeability assessment.

5.6 In their Business Plan submissions, networks expressed some concerns over either the Ofgem working assumption inputs or the outputs of their financeability assessments.

Draft Determination responses

5.7 A summary of responses to DDs is set out below. Responses to consultancy reports that the DNOs have submitted on our financeability assessment are provided in Appendix 3.

Responses to FQ19: Do you agree with our approach to assessing financeability?

5.8 All DNOs disagreed with the base case assumptions we used for totex in the DD financeability analysis, as they consider they represent an underestimate of likely costs given the important role of Uncertainty Mechanisms in the RIIO-ED2 price control package.

5.9 Other inputs to our financeability testing that were challenged by the DNOs include the proportion of index-linked debt and capitalisation rates that we assumed in the analysis. Several DNOs also suggested that our financeability assessment failed to account for the proposed totex allowances in DD being below DNO business plan forecasts and as a result the analysis failed to account for the impact the efficiency challenge has on credit metrics and financeability.[118]

5.10 DNOs believe that we have not considered the full risks of financeability including the full extent of downside risks, combinations of performance and macro factors (inflation and interest rate risk) and high risk of being downgraded to sub-investment grade under certain scenarios.

5.11 ENWL, NPg and UKPN suggest that the basis for our financeability testing was wrong. ENWL and UKPN consider that the use of a credit rating simulator places insufficient weight on the 1.4x Adjusted Interest Cover Ratio (AICR) threshold they state is used by Moody's as a hard threshold for a Baa1 credit rating under the agency's ratings methodology. ENWL and NPg believe that our approach focusses too much on the short term.

[117] RIIO-ED2 Business Plan Guidance, Paragraphs 6.5-6.8, https://www.ofgem.gov.uk/sites/default/files/2021-09/ED2%20Business%20Plan%20Guidance%20-%20September%202021_1.pdf

[118] If the notional licensee is not able to perform to the totex targets set by the price controls.

5.12 There were mixed views between DNOs on the base case financeability testing. All DNOs noted some concerns around the package not being financeable across the board (debt and equity), with some suggesting that the DDs did not give sufficient weight to the requirements of equity financeability as compared to debt financeability. SPEN said that Ofgem should have provided more evidence around equity financeability in RIIO-ED2. NGED and NPg noted general concerns around the approach.

5.13 ENWL, SPEN, SSEN, UKPN, NGED believe individual actual companies are not financeable based on the DD. ENWL mention additional risks around infrequent issuance on financeability, in relation to higher variance of debt costs than a frequent issuer.

5.14 ENWL and SSEN state that our assessment is premised on significant equity injections into the network businesses, which masks financeability problems. SSEN believe that the DD attempted to mask financeability issues within RIIO-ED2 by using levers to solve credit rating ratio issues instead of increasing the cost of equity.

5.15 Citizens Advice agreed with our approach to financeability.

5.16 The Challenge Group agreed with Ofgem's use of a notional company approach, the level of credit ratings modelled and shared Ofgem's concern around excessive focus on individual credit metrics.

Responses to FQ20: Do you have any evidence that would enable us to improve our calibration of stress test scenarios?

5.17 ENWL submitted reports from KPMG and Oxera that set out that we had not suitably considered the range of downside risk in focusing on a downside risk scenario of -200bps RoRE.

5.18 NPg said that Ofgem should broaden its period of assessment to regulatory periods beyond RIIO-ED2 to capture the financeability impact of the transition to a 45-year asset life.

5.19 UKPN said that a higher cost of equity is required and that Ofgem's model overstates the calculated AICR.

5.20 Citizens Advice believe that Ofgem needs to produce probability weighted RoRE ranges.

5.21 The RIIO-ED2 Challenge Group is of the view that all business plans were financeable based on the data set out in Table 20 of the Finance Annex of DDs.

Final Determination

Approach

5.22 We consider the general approach to the financeability assessment that we applied at DDs remains appropriate. We focus on the notional company for assessing price control parameters and review notional company financeability analysis for individual notional licensees with

reference to modelled credit metrics and ratings under different scenarios.

5.23 While we have considered actual company debt positions and structure to inform the notional structure, consistent with our RIIO-ED2 SSMD, RIIO-ED2 DDs and Final Determinations for RIIO-GD&T2, we treat actual company financing decisions as matters for companies themselves. We do not believe we are required to ensure that actual licensees are financeable in any and all circumstances (whatever risks they have taken or however inefficient they may be) and so do not agree with some DNO responses that we should give greater weight to the financeability of actual licensee companies (and their actual financing structures and decisions) than we did at DDs. For the same reason, we do not agree with some DNO submissions that our baseline financeability testing should model overspend if the notional company totex allowances are less than the cost forecasts that the DNOs had originally submitted in their business plans.

5.24 As we noted in DDs[119], the CMA agreed with this position in its Final Determinations in the RIIO-GD&T2 appeals where it concluded that "[w]e do not agree that the financeability duty requires GEMA to ensure that each licensee can recover all of the costs which it has reasonably incurred."[120] The CMA also said that use of a notional company approach does properly have regard to the need to secure that licensees are able to finance their activities, bearing always in mind GEMA's principal objective to protect the interests of existing and future consumers.[121] Therefore, we have decided to focus on the notional company for setting price control parameters.

5.25 Our overall conclusions on the financeability of this price control are based on a broad in-the-round assessment. We continue, however, to view modelled credit metrics and credit ratings as a key consideration in this assessment. We have sought to ensure that this modelling is transparent and objective. Consistent with our DD approach (and our approach in the RIIO-GD&T2 determinations), we have therefore used the scorecard methodology of one credit rating agency, Moody's, as the basis for our modelling, as this methodology is the most replicable of the main credit rating agencies.

5.26 In our analysis we have considered:

[119] ED2 Draft Determinations - Finance Annex, para 5.11.
[120] CMA Final Determinations, Volume 3: Individual Grounds, Paragraph 14.86, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf
[121] CMA Final Determinations, Volume 3: Individual Grounds, Paragraph 14.81, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

- financial projections from our financial model(s) as used to calculate revenues in line with these FDs;
- the strength of quantitative metrics of credit quality, particularly those emphasised by credit rating agencies or that are under pressure;
- the strength of qualitative factors; and
- stress test results.

5.27 Consistent with the approach we took in DDs, Ofgem does not target any particular credit rating or credit ratio for notional companies. We agree with the Challenge Group's view that, in principle, there would be benefits for notional companies if credit quality was stable at two notches above minimum investment grade (i.e. BBB+/Baa1). However, there are circumstances in which a lower rating would be acceptable, with reference to:

- ratings migration of GBP investment grade bonds indicating that the average rating has fallen in the broader market over the last 12 years
- ratings migration of European utility companies
- whether a lower powered (less risky) price control could require less headroom in the base case to absorb shocks
- whether targeting a lower credit quality could cost consumers less than any adjustments required to maintain notional company credit quality at BBB+/Baa1.

5.28 We do not take the view that a BBB+/Baa1 credit rating should be adopted as a fixed target for notional companies.

5.29 We note responses from a number of DNOs that rating agencies use and apply thresholds for specific metrics (e.g. AICR) in their rating assessments in order for network companies to achieve particular investment grade levels, in particular BBB+/Baa1.[122]

5.30 As we have indicated in previous price controls[123], we have concerns with basing price control review financeability assessments on individual metrics, or on particular thresholds for these metrics that the rating agencies themselves may choose to apply for their own rating assessments. The application of strict thresholds is not necessarily representative of an in-the-round assessment, as such thresholds may be applied differently by different credit rating agencies.

[122] For example, we understand that Moody's guidance indicates that an AICR of 1.4x is the minimum expectation for a Baa1 credit rating for energy networks.
[123] For example, see RIIO-ED1 Draft Determinations Financial Issues Appendix 1 for a full discussion of this issue and A1.23 in particular, which concludes that the limitation of this ratio stems from the use of a real terms capital maintenance concept in the numerator and a largely nominal concept in the denominator.

5.31 Strict application of thresholds for individual metrics can result in the modelled credit ratings being highly sensitive to very small variations: for example, our modelling results below show that in some cases a small reduction in one ratio would result in a two-notch reduction in the overall rating, irrespective of the strength of other quantitative and qualitative factors. Applying mechanistic changes to the price control on the basis of such sensitivity may risk undermining the stability of our regulatory decision-making, particularly as other considerations are relevant beyond the impact on credit ratings.

5.32 We therefore continue to believe our financeability testing should take an in-the-round assessment that targets each notional company being broadly of comfortable investment grade credit quality, rather than applying strict threshold levels to particular credit metrics that must be met in all circumstances. As part of this in-the-round assessment, where metrics are highly pressured, or particularly low, relative to the overall modelled credit rating, we consider whether weakness in one particular metric over the upcoming price control period may be offset by other factors before concluding that an adjustment would be warranted. These factors include:

- strength in other relevant credit metrics, having regard also to the degree of severity of any sources of weakness;
- forecast future structural trends in the metric, which may inform our view as to whether it is serving as a leading indicator of more serious weaknesses in credit quality;
- the resulting exposure of companies to credit rating downgrades as a result of plausible downside scenarios, having regard to whether this exposure is proportionate; and
- the costs of applying an adjustment.

5.33 We agree with the DNOs - consistent with the approach that we took at RIIO-ED2 DDs and in our Final Determinations for RIIO-GD&T2 - that our financeability testing should consider financial ratios on the basis of both baseline totex allowances and scenarios where there could be additional totex allowed through variant ex-post expenditure. Our financeability results for these FDs consider a baseline totex case and a higher totex case should additional allowances be forthcoming during the price control, e.g. via the load related expenditure volume driver[124].

5.34 We do not agree with the DNOs that the starting assumptions we make in our base case modelling for the notional company on index-linked debt are unjustified. Our assumption at DDs[125] was broadly consistent with the assumption we made at Final Determinations for RIIO-ED1 and

[124] The higher totex case is defined in paragraph 1.84 of this Finance Annex.
[125] 25% index-linked debt.

analysis that we have undertaken of the level of index-linked debt and financing in the sector over RIIO-ED2.[126]

5.35 We have updated our position on capitalisation rates and therefore the assumptions that inform our financeability assessment are as set out in Chapter 10. Given our totex allowances reflect Ofgem's view of efficient costs, we consider the assumption in the DD baseline modelling that the notional efficient entity spends according to the totex allowances is appropriate and consistent with the principles of our approach to financeability testing.

5.36 We consider that equity financeability is met by ensuring the allowed return on equity is set objectively based on an assessment of relevant evidence including those risks face by equity holders. We consider that these conditions are met in these Final Determinations and the illustrative RoRE ranges set out in Chapter 3 considered alongside the impacts of the RAMs thresholds we have decided to introduce for RIIO-ED2, provide a reasonable and financeable range of returns for networks and shareholders.

5.37 Our baseline and higher totex case modelling for DDs and these FDs assumes de-gearing from RIIO-ED1 levels. In our modelling, we also include equity injections where the modelled level of gearing exceeds a pre-defined level, namely five percentage points above our notional gearing assumption (in practice, this is limited to only a limited number of licensees in our baseline modelling and certain stress test scenarios we have tested in our analysis). The equity injection returns the notional licensee to the level of notional gearing.

5.38 We consider that these modelling assumptions are consistent with the behaviour of a notional efficient operator, ensuring that rapid growth in gearing does not create financeability challenges. We do not consider the assumed equity injections in our modelling are an issue for our conclusions on financeability. Our allowed return on equity is consistent with the opportunity cost of these equity injection requirements (including associated transaction costs), and so they are Net Present Value (NPV) neutral in their impact. As a result, we also do not consider it problematic for the conclusions of our financeability assessment that during a period of high RAV growth in the electricity distribution sector equity holders in certain notional licensees (under certain scenarios and a notional dividend yield of 3% in our analysis), may receive negative cash flows (i.e. a negative net dividend yield) for the duration of the price control to manage the level of gearing during a period of RAV growth.

[126] Our modelling indicates index-linked financing of 22-26% for RIIO-ED2 for the combined debt portfolio (new + embedded debt). The bottom-end of the range excludes derivatives, the top-end includes derivatives.

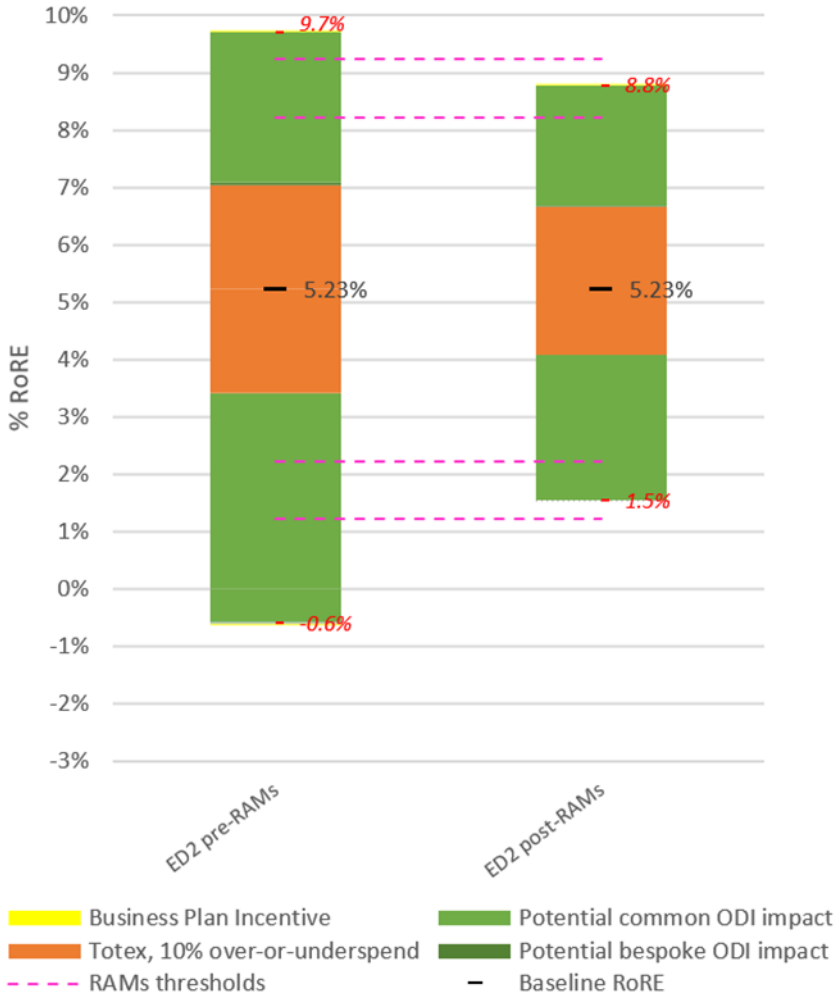
5.39 In contrast, we note that a number of DNOs' responses to DDs have requested a materially higher allowed return on equity to increase headroom within the price control, improve financial ratios and mitigate the need for dividend sacrifice in the notional company modelling. We have not changed our view, expressed in our DDs, that it would be inappropriate to apply an uplift to the allowed return on equity simply to improve an individual financial metric[127]. We set out in DDs the measures (if needed) that we considered applicable for any identified notional financeability constraints.[128] We remain of the view that this position is appropriate.

Calibration of stress test scenarios

5.40 We have carried out scenario analysis for each notional licensee reflecting our FD package and in particular the range of RoRE outcomes based on company performance. RoRE analysis allows us to stress test notional businesses by examining a reasonable range of returns to which networks may be exposed. Figure 4 below illustrates the potential range of returns based on common ODI caps and collars and an illustrative 10% over/underspend on totex.

[127] ED2 Draft Determinations - Finance Annex, para 5.25.
[128] ED2 Draft Determinations - Finance Annex, para 5.26.

Figure 4: Illustrative RoRE ranges, RIIO-ED2



5.41 The objective of our stress tests is to assess whether the FD package provides an appropriate degree of robustness to downside scenarios. In performing our duties, we must have regard to the need to secure that network companies are able to finance the activities which are the subject of obligations imposed by or under the relevant legislation. DNOs are also required by their licences to take all appropriate steps within their power to ensure that at all times they maintain an investment grade credit rating.[129]

5.42 This does not, however, imply that we are required to secure that notional licensees can maintain an investment grade credit rating in any and all scenarios, including in all underperformance scenarios. In the DDs, we noted that our financeability assessment should not be determined by the extreme tail of the probability distribution of potential

[129] Standard Licence Condition 40 – Credit rating of the licensee, Electricity Distribution Consolidated Standard Licence Conditions (ofgem.gov.uk)

outcomes[130]. We have not tested financeability to the very extreme downside limit shown in our illustrative RoRE range above.

5.43 We consider that using 'plausible downside scenarios' is appropriate. We noted in the DDs that Ofwat and the CMA at PR19 had used scenarios with more moderate downside than implied by ODI collar rates.[131] We do not consider it realistic to assume that licensees' totex and ODI performances are perfectly correlated; nor should our stress testing preclude the possibility that there may be offsetting positive performance in other areas of the price control.

5.44 As at DDs, we continue to assume that a plausible downside scenario for an individual notional licensee might reasonably fall in the range of 100-200bps RoRE. Our estimate of the plausible downside scenario has been informed by a bottom-up assessment of potential outturn performance under the FD package, and historical performance and regulatory determinations (both previous Ofgem decisions and the PR19 decisions noted above).

5.45 For these FDs, we have modelled the upper bound of this range, as well as having regard to the 'tipping point' downside scenario beyond which an individual notional licensee might have a sub-investment grade credit rating.

5.46 As part of our calibration of downside scenarios for DDs, we reviewed evidence on credit rating migration rates. We have not been presented with any evidence to cause us to revisit our interpretation of this evidence for FDs.

Analysis results

5.47 Financeability analysis enables us to test whether our proposed FD package allows the notional efficient operator sufficient headroom to service its debt.

5.48 We have performed an updated financeability analysis based on these FDs and an in-the-round approach to financeability assessment as set out above that finds each notional licensee broadly achieving comfortable investment grade credit quality.

Central results

5.49 For financeability testing purposes, we have tested different outturn totex scenarios including a:

- Baseline case scenario: which uses our FD baseline totex allowances and other baseline modelling assumptions (see below).

[130] ED2 Draft Determination Finance Annex (2022) Paragraph 5.56.
[131] ED2 Draft Determination Finance Annex (2022) Paragraph 5.57.

- Higher case totex scenario: which assumes additional totex is allowed through Uncertainty Mechanisms (both ex-ante and ex-post).[132]

5.50 For both scenarios, our modelling assumes that each licensee's incurred totex during the price control period is equal to its allowances.

5.51 As noted in Chapter 2 (see para 2.85), the higher case totex scenario does not represent a forecast or indication of future re-opener allowances but is considered a plausible and appropriate case that captures the important role of Uncertainty Mechanisms (in particular, the load related expenditure reopeners) in the RIIO-ED2 FD package. The baseline and higher case financeability testing scenarios are consistent with the totex cases applied in our cost of debt assessment (both the index calibration and the eligibility assessment for the infrequent issuer premium).

5.52 Alongside these totex scenarios, we have used the following starting assumptions for the notional company in our baseline case and higher case scenario modelling:

- The allowed return (WACC allowance) as set out in Chapter 4.
- Totex allowances are assumed to equal network totex cost forecasts for RIIO-ED2.
- No Business Plan Incentive (BPI) awards or penalties were included as we assume a notional efficient operator would not be subject to these.
- Net debt is reset to the FD notional gearing level at the start of RIIO-ED2, with any opening de-gearing assumed to be achieved by an equity injection (with an equity issuance allowance paid and used).
- Debt costs are assumed to equal the allowances set out in Chapter 2.
- 25% of the network's debt is assumed to be CPIH linked.[133]
- Tax allowances are equal to tax costs, as calculated using the price control financial model (PCFM).
- Opening RAV values to be based on totex forecasts for RIIO-ED1 as provided in licensees' Business Plan Data Template submissions, and inclusive of any known logged-up adjustments.
- Lagged revenue impacts arising from RIIO-ED1 are excluded (e.g. inflation true-up, cost pass-through adjustments, output incentive revenue and over / under collection of revenue).
- Depreciation rates are based on our decisions set out in Chapter 10.

[132] See discussion in Chapter 2 - para 2.82 - for how the higher totex case compares to the baseline case.
[133] We note assuming all debt is CPIH-linked is a conservative assumption, in line with the switch to RAV indexation. If the notional company were assumed to retain RPI-linked debt or transition to CPIH debt overtime, all other things being equal this would increase headroom in the financeability assessment.

- Capitalisation rates are based on our decisions set out in Chapter 10.
- Notional dividend yield assumed at 3% of regulatory equity.
- Equity issuance transaction costs of 5% of any amount forecast to be issued.

5.53 Table 15 and Table 16 set out the resulting financial ratios of our FDs for both the baseline case and higher case scenarios and a simulated credit rating consistent with the methodology that we applied at DDs. We present AICR and Funds From Operations (FFO) over Net Debt. For both the baseline and higher case scenarios, we also show the ratio of equity issuance to dividends over RIIO-ED2 that are modelled in both cases[134].

Table 15: Baseline case modelled notional credit ratings and metrics (RIIO-ED2 average)

	AICR	**FFO/Net Debt**	**Scorecard rating**	**Equity issuance/ dividends**
ENWL	1.31	11.8%	Baa1	-
NPgN	1.39	12.6%	A3	-
NPgY	1.37	11.9%	A3	-
WMID	1.42	13.1%	A3	-
EMID	1.40	12.5%	A3	-
SWALES	1.35	11.1%	Baa1	-
SWEST	1.38	11.1%	Baa1	-
LPN	1.41	13.3%	A3	-
SPN	1.40	13.5%	A3	-
EPN	1.40	13.2%	A3	-
SPD	1.41	13.3%	A3	-
SPMW	1.41	12.8%	A3	-
SSEH	1.37	11.3%	Baa1	147%
SSES	1.36	11.8%	A3	-

[134] A positive equity issuance amount is shown for SSEH in Tables 5.1 and 5.2, as modelled gearing exceeded 65% and equity issuance reduces gearing to 60% notional gearing. The ratio is shown as zero for other licensees as no additional equity is issued in the modelling over and above the reduction in gearing at the start of the RIIO-ED2 price control.

Table 16: Higher case modelled notional credit ratings and metrics (RIIO-ED2 average)

	AICR	**FFO/Net Debt**	**Scorecard rating**	**Equity issuance/ dividends**
ENWL	1.30	11.6%	Baa1	-
NPgN	1.39	12.4%	A3	-
NPgY	1.37	11.7%	Baa1	-
WMID	1.40	12.7%	A3	-
EMID	1.39	12.1%	A3	-
SWALES	1.34	10.9%	Baa1	-
SWEST	1.37	10.8%	Baa1	-
LPN	1.40	13.0%	A3	-
SPN	1.40	13.3%	A3	-
EPN	1.39	13.0%	A3	-
SPD	1.39	12.9%	A3	-
SPMW	1.40	12.5%	A3	-
SSEH	1.33	10.3%	Baa2	205%
SSES	1.34	11.3%	Baa1	-

5.54 The financial ratios results in Table 15 and Table 16 indicate to us that there is sufficient headroom in the baseline case and in our higher case to consider each notional company financeable. All licensees are investment grade, with one, two or three notches of headroom based on the scorecard rating approach (i.e. not applying specific ratio threshold levels), consistent with the approach that we took at DDs.

5.55 The above modelled credit ratings are based on Moody's scorecard calculation methodology before adjusting the overall rating based on an AICR threshold of 1.40 for a Baa1 rating. We do, however, present and consider the modelled AICR metrics themselves. Even where this ratio (or any other individual metric) may indicate current or future pressures on the cashflow sufficiency and finances of the notional company, we note that different agencies take different views on the importance or otherwise of particular ratios. This is illustrated by the significant number of companies that have 'split ratings' (i.e. are not rated at the equivalent category by all agencies that rate them).

5.56 We are content that, in general, the notional company credit quality may be considered as two notches above minimum investment grade in the round, even if there is a possibility that one or more rating agencies may rate it slightly lower or higher. As we found at DDs[135], AICR metrics are tight for all licensees relative to typical investment grade levels for that metric alone. However, in these baseline case and higher scenarios, we are comfortable with the spread of modelled credit ratings, with all licensees being at a rating level of Baa2, one notch above minimum investment grade, or higher, for these FDs.

5.57 Nevertheless, we are cognisant of the pressure on AICR resulting from expected returns (for both equity and debt) being at close to historically low levels while more expensive embedded debt remains in the industry debt portfolio and the role of AICR in the assessment of credit rating levels for energy and other network utility sectors. We therefore consider in the following sections whether this indicates an inadequate degree of resilience to downside scenarios and - specifically in relation to AICR - whether long-term trends indicate further deterioration or recovery.

5.58 We note that the net equity issuance results imply no dividend yield for one licensee (SSEH) under both totex assumptions[136]. We do not consider this to be problematic in principle: investment demands may sometimes result in the need for investment inflows, and we consider the package as a whole is compatible with equity financeability.[137] Consistent with DDs, there is also some variation in the modelled AICR across the sector. For example, ENWL has a tighter AICR than other notional licensees, although its credit metrics overall are consistent with headroom above a minimum investment grade level. For the reasons set out above we are content with this position and take comfort from the results of our downside scenario testing for all licensees including ENWL (see below) and that our baseline and higher cases also do not draw on additional levers (including the potential for a reduction in dividend yield relative to our baseline assumption) that could improve credit metrics.

Scenario analysis

5.59 Under the range of plausible downside scenarios that we have reviewed - including a 200 bps RoRE downside, 10% overspend and -1% inflation sensitivity - all licensees are modelled as Baa3 or higher when using both the base and higher totex cases. This indicates that all notional licensees would retain an investment grade credit rating although in the higher case scenario, the sector AICR falls to 1.0-1.1 in the 200bps RoRE downside. Under the FD package, the tipping point when a notional licensee turns to sub-investment grade is around 300bps RoRE downside

[135] RIIO-ED2 Draft Determinations - Finance Annex, Table 20.
[136] The modelled equity issuance is higher than assumed dividends in RIIO-ED2.
[137] The licensee affected by this in the baseline scenarios is SSEH and we understand this is in large part driven by the Shetland Link transfer, which can be considered a special case.

with the higher totex scenario. Taking into account our own analysis and evidence provided to us in response to DDs, we consider this a remote scenario.

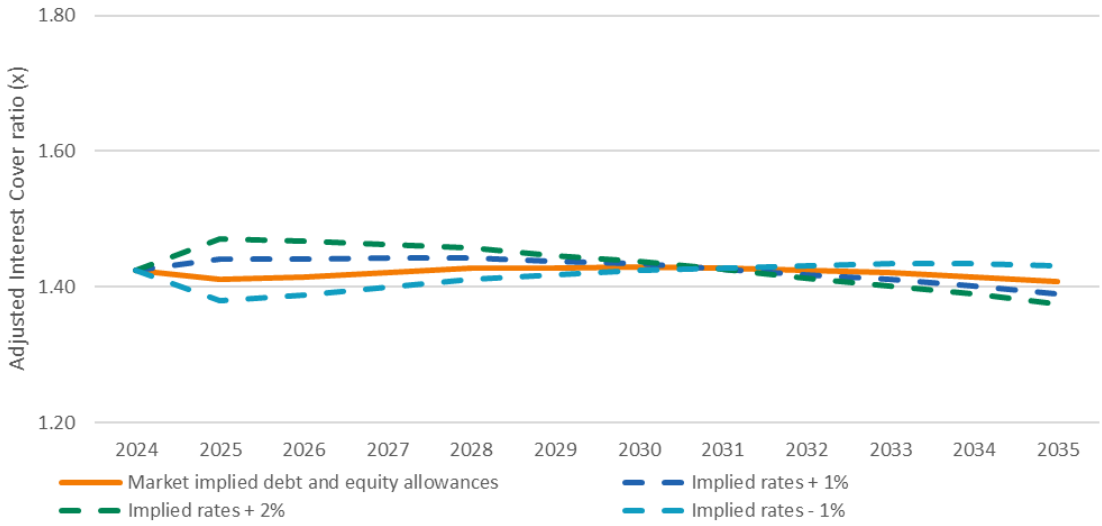
Longer-term analysis

5.60 Consistent with our position at DDs, for RIIO-ED2, allowances for both debt and equity will change to reflect market rates for index-linked gilts and corporate debt as both are subject to indexation. We therefore consider it appropriate to consider possible evolution of the debt and equity allowances and whether debt servicing is projected to improve or worsen over the longer term in different possible rate environments.

5.61 We have considered in particular whether there are likely to be longer term constraints on AICR, which may indicate longer term financeability concerns that may need to be addressed. In doing so, we looked at the economic form of this ratio rather than extending the more detailed Licence Model (LiMo). This is because the economic form serves to extract from shorter term impacts and does not require a lot of detailed assumptions a long way into the future. We therefore consider the economic form of this ratio is an appropriate and proportionate tool for looking at longer-term expected trends.

5.62 We show the results of our analysis on the basis of a 60% notional gearing assumption in Figure 5. Because this is a stylised analysis (and uses the economic form of the ratio) the AICR starts at a different (higher) level than in our analysis above. Based on current rate projections, this analysis indicates that the sector AICR is not expected to deteriorate over subsequent price controls. Drivers of this trend include expensive historical debt dropping out of the trailing average, but overall a projected flat cost of debt and equity allowance in future price control periods subsequent to RIIO-ED2. The trend is also sensitive to projections for expected inflation as well as market rates.

Figure 5: Expected evolution of the AICR ratio (stylised ED industry)[138]



5.63 We have also reviewed longer term forecast trends in the FFO / Net Debt ratio in the sector. There is a downwards trend in this ratio after RIIO-ED2 for multiple price controls in our simplified modelling. This is a logical implication of the transition to 45-year depreciation introduced at RIIO-ED1. While acknowledging that this ratio will need to be kept under review, we are comfortable that it does not indicate an immediate financeability concern for RIIO-ED2. Our modelling is consistent with notional licensees maintaining comfortable investment grade ratings for RIIO-ED2.

Conclusions and implications

5.64 Based on our 60% notional gearing assumption and decisions on capitalisation and depreciation rates, we consider our Final Determinations are financeable. We have therefore decided that no further adjustments to the price control package on financeability grounds are necessary.

[138] The stylised electricity distribution AICR is modelled consistently in RIIO-ED2 with future price control periods based on the simplified approach described above. For this reason, the level of AICR differs to the modelled ratios reported in tables above.

6. Financial resilience

Financial resilience measures

Purpose	Financial resilience measures aim to protect consumers from adverse consequences of financial distress.
Benefits	Having measures in place that provide early warning of financial distress, consider potential mitigations and/or restrict certain activities in the event of financial deterioration make failure less likely and/or increase the chance and quantum of recovery for the benefit of consumers.

Final Determination summary

6.1 The table below provides a summary of our Final Determination position.

Parameter	**Final Determination (FD)**	**Draft Determination (DD)**
Timing of financial resilience report	A financial resilience report will be required within 60 days of the relevant trigger event.	Same as FD.
Trigger event	This happens if the credit rating falls to BBB/Baa2 and is placed on negative watch.	Same as FD.

Background

6.2 In our SSMD for RIIO-ED2, we said that, in our view, some changes were required to assist us in monitoring the credit quality of all licensees and to clarify upfront the reporting expectations for networks whose actual issuer credit ratings fall materially below those generally expected for the notional company.[139]

6.3 We also decided that a Financial Resilience Report will be required if the licensee's highest issuer rating across rating agencies held is at BBB/Baa2 (or equivalent) and is on negative watch, unless the licensee has any debt covenants linked to particular ratings from specified ratings agencies. In this case, the requirement will also be triggered if any rating

[139] RIIO-ED2 SSMD Finance Annex, Paragraph 5.3, https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision

that is the subject of a debt covenant is one notch above the minimum covenant requirement and is on negative watch, or the rating is lower than one notch above the minimum rating requirement. So, for example, if the covenant is for maintenance of an investment grade rating by S&P, the requirement for a Financial Resilience Report will be triggered if S&P's rating is at BBB and the licensee is on negative watch, or if the licensee's rating is lower than BBB.[140]

6.4 We also noted that we do not consider there to be any sector-specific reasons why this licence requirement should be different from the RIIO-GD&T sectors and that we expected to consult on the same drafting across sectors, subject to consultation on the RIIO-ED2 Draft Determinations and the statutory consultation process.[141]

6.5 In Draft Determinations, we proposed that DNOs be required to provide the Financial Resilience Report and, where possible, the ratings reports to Ofgem within 60 days of the trigger event described in the SSMD (as set out in paragraph 6.2 above).

Draft Determination responses

6.6 We received seven responses on financial resilience.

Responses to FQ21: Do you agree with the requirement to provide the Financial Resilience Report within 60 days?

6.7 NPg, SPEN, UKPN and the RIIO-ED2 Challenge Group did not have issues with our DD proposals.

6.8 ENWL did not object to additional financial resilience measures but did not want this to inappropriately place the onus on companies to address financeability challenges that Ofgem should be acting upon.

6.9 SSEN and NGED requested further information on what would be contained within the Financial Resilience Report.

Final Determination position

6.10 We have decided to implement the approach proposed in Draft Determinations, which is to require a Financial Resilience Report within 60 days of a trigger event occurring.

6.11 We consider that 60 days is a reasonable and proportionate timeframe for submitting a Financial Resilience Report which provides early signals around financial distress. This would help to mitigate the risks to consumers from the consequences of a licensee's rating falling further.

6.12 As set out in the SSMD, the drafting of the RIIO-ED2 licence condition will be subject to consultation as part of the RIIO-ED2 licence

[140] RIIO-ED2 SSMD Finance Annex, Paragraph 5.14, ibid.
[141] RIIO-ED2 SSMD Finance Annex, Paragraph 5.16, https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision

modifications. However, we see no reason why it should differ from the RIIO-GD&T2 equivalent.

6.13 Therefore, subject to consultation on the specific drafting, we expect the Financial Resilience Report will require the following:

- an assessment of the licensee's current and forecast financial standing, including an assessment of resilience to downside scenarios relating to either operational performance or macro-economic events;
- financial projections for the next three regulatory years (including the remainder of the current year) or the remainder of the price control period, whichever is longer; and
- details of potential mitigating actions the licensee could take to improve its financial resilience and an indication of whether such actions are planned.

6.14 The financial projections would include: (a) a forecast balance sheet; (b) income statements; (c) cashflow statements; (d) key financial metric projections; and (e) results of any stress tests that the licensee considers to be appropriate.

6.15 We do not consider that the Financial Resilience Report replaces or changes our role in relation to financeability.

7. Corporation Tax

Purpose	To provide a tax allowance compensating networks for efficient corporation tax payments.
Benefits	Providing a notional allowance enables networks to recover amounts required to cover their costs, while incentivising them to manage their tax affairs efficiently, thereby keeping costs lower for consumers.

Background

7.1 In RIIO-ED1, a financial model is used to calculate a tax allowance on a notional basis, as a proxy for efficient corporation tax costs, for each of the relevant licensees.

7.2 The RIIO-ED1 allowance is supplemented by two specific uncertainty mechanisms:

- a tax trigger mechanism that reflects changes in tax rates, legislation and accounting standards, and
- a tax clawback mechanism that claws back the tax benefit a licensee obtains as a result of gearing levels that are higher than assumed for the notional company.

Final Determination summary

7.3 The table below provides a summary of our Final Determination.

Parameter	**Final Determination**	**Draft Determination**
Annual allowance rates	To use four main capital allowance pools and the applicable annual allowance rates that are set out in the relevant legislation.	Same as FD
Tax allocation rates	To make these allocation rates PCFM variable values within the PCFM, which will enable them to be updated through the Annual Iteration Process.	Same as FD
Additional protections - Tax reconciliation and tax review	To use the tax deadband level set in RIIO-ED1 as the materiality threshold	Same as FD

Parameter	Final Determination	Draft Determination
	for the tax reconciliation and to require networks to submit their CT600 forms to us alongside the tax reconciliation.	
Tax Trigger	To make no changes to the existing materiality thresholds or the existing notification and determination process for Type B tax trigger events.	Same as FD
Tax clawback	To allow networks a level of headroom in the tax clawback calculation.	Same as FD

Summary of Draft Determination proposals, responses, Final Determination and rationale

Tax allocation rates

FQ22 - Do you agree with our proposals to make allocation and allowance rates variable values in the RIIO-ED2 PCFM?

7.4 In our RIIO-ED2 Draft Determinations,[142] we proposed to make the tax allocation rates PCFM variable values within the PCFM, which will enable them to be updated through the Annual Iteration Process.

7.5 We received seven responses to this question. All respondents agreed with our proposal to make the allocation rates PCFM variable values.

7.6 ENWL agreed in principle but requested further clarification as to the timing and frequency of the updates for the allocation rates as well as requesting that a methodology be set out to ensure DNOs calculate these rates in a consistent way.

7.7 As is the case for RIIO-GD&T2, we intend for this information be included in the PCFM Guidance, which will be consulted on as part of the RIIO-ED2 Regulatory Instructions and Guidance (RIGs) development. Allocation rates will be subject to the Annual Iteration Process and as such they can be updated annually and in line with any updates made to totex values. We will also include a template in the RIIO-ED2 Regulatory Reporting Pack containing the calculations needed to derive the capital allowance allocation rates in the regulatory reporting template that will ensure consistency of calculation across DNOs.

[142] See paragraph 7.39 of: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

7.8 ENWL also noted that it seemed "somewhat contradictory" not to allow for capitalisation rate variances whilst enabling variability in this area.

7.9 We do not agree that this is contradictory as the capital allowance allocation rates relate only to the tax allowance for which our policy is to pursue a notional calculation with some additional mechanisms to reflect actual expenditure, whereas the capitalisation rates in the PCFM determine the proportion of totex that is added to the RAV, which is an unrelated policy area.

7.10 We have decided to make these allocation rates variable values. This modelling simplification should better enable the notional allowance to reflect the networks' actual tax payments by enabling any changes to tax rates to be fully reflected in allowances without the use of a complex macro.

Additional protections - tax reconciliation and tax review

FQ 23 - Do you agree with the proposed additional protections?

7.11 In our RIIO-ED2 SSMD,[143] we decided to introduce a number of additional protections to supplement the notional tax allowance, including a tax reconciliation and associated tax review process.

7.12 In our RIIO-ED2 Draft Determinations,[144] we proposed to introduce a requirement for companies to submit their latest CT600 returns to us to review in conjunction with their tax reconciliations as the CT600 tax liability will be the starting point for the reconciliation and would allow us to validate the value used in the submitted template.

7.13 We also proposed to use the same process for the tax review for RIIO-ED2 as applies to the RIIO-GD&T2 companies on the basis that the tax reconciliation and tax allowance policy for RIIO-ED2 would be aligned with that of RIIO-GD&T2 and we saw no reason why electricity distribution should differ from those sectors.

7.14 We received seven responses to this question, two of which were not in favour of the tax reconciliation and tax review process.

7.15 NPg considers that these protections would remove or reduce the incentive for licensees to efficiently manage their tax bill and would be an increased administrative burden for both Ofgem and licensees.

7.16 It suggests instead that the protections should be applied at the close-out of the price control rather than in-year.

7.17 SSEN also does not support the introduction of the tax reconciliation or tax review process and notes that it is accredited under the Fair Tax

[143] See paragraphs 6.21 – 6.26 of the Finance Annex: RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[144] See paragraph 7.26 of: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

Mark scheme, which should be sufficient to "substantiate the validity of our tax charge". SSEN's view is the draft tax reconciliation template that was consulted on for RIIO-2 GD&T companies is overly detailed.

7.18 We note that the introduction of the tax reconciliation and tax review process was decided in our RIIO-ED2 SSMD[145] on the basis that we think it will improve transparency in this area through more robust reporting and monitoring and that there is no reason why the tax policy applied to RIIO-ED2 should differ from those of the RIIO-GD&T2 sectors.

7.19 The remaining responses were broadly supportive of the additional protection, although all but one raised some concerns.

7.20 ENWL raised concerns over the form of the tax reconciliation template and the level of detail that may be required in the accompanying commentary, noting that it should be proportionate and appropriate.

7.21 NGED noted that there are legitimate reasons why there may be differences between a company's notional and actual tax payments and that any tax reconciliation should be designed in a way to ensure legitimate differences do not trigger a tax review.

7.22 SPEN agree with the principle of a tax review mechanism but was concerned by the timing of reconciliations. It considers it would be more appropriate to review the differences between the notional and actual tax paid at the end of the price control due to the complexity around timing. It also noted that a further complication arises in SPEN's case as it has a 31 December year-end which is not aligned with the 31 March Regulatory Year end.

7.23 The RIIO-ED2 Challenge Group agreed that all the proposals in relation to tax are practicable and in the interests of consumers.

7.24 We have considered stakeholder responses and the concerns raised over the tax review and as a result have proposed some amendments to the licence condition and the Price Control Financial Handbook (PCFH) drafting in this area. These will be consulted on as part of the RIIO-ED2 licence modifications.

7.25 Our intention is to monitor the tax allowance more closely in RIIO-ED2 and to improve transparency in this area through more robust reporting. We agree that efforts taken to achieve this should be proportionate and should not place any unnecessary regulatory burden on networks at the expense of the consumer.

7.26 A tax review would follow a submitted tax reconciliation, which contained material, unexplained differences that cannot be understood or resolved through initial engagement between Ofgem and the licensee in question.

[145] RIIO-ED2 SSMD Finance Annex, Paragraphs 6.22, RIIO-ED2 Sector Specific Methodology Decision | Ofgem

7.27 We will continue to work with stakeholders on the licence and handbook drafting and will engage with them in developing the reconciliation template and the guidance to accompany in advance of the first tax reconciliation submission.

7.28 While we acknowledge there is a timing issue in the case of SPEN, we do not agree that this is best resolved by performing a single ex-post reconciliation at the close out of RIIO-ED2. Our intention in introducing this tax reconciliation is to enable us to more closely monitor tax and leaving it until after the price control has ended would not achieve this as effectively as ongoing monitoring would.

7.29 We have decided to use the same process for the tax reconciliation and tax review as is used for RIIO-GD&T2 because we think it is appropriate and there are no distinct features of the RIIO-ED2 sector that would warrant a different approach.

7.30 We have decided also to require licensees to submit their latest CT600 returns to us to review in conjunction with the tax reconciliation as the CT600 tax liability will be the starting point for the reconciliation and would allow us to validate the value used in the submitted template. Both would be part of the annual regulatory submissions.

Additional protections – board assurance statement

7.31 In our RIIO-ED2 SSMD,[146] we decided to introduce a requirement for the companies to submit a board assurance statement to provide specific assurance over the accuracy and reasonableness of the values in the company's tax reconciliation.

7.32 In our RIIO-ED2 Draft Determinations,[147] we said that we are continuing to engage with companies on the wording of the statement but did not make any specific proposals.

7.33 We received five responses in relation to the board assurance statement.

7.34 SPEN and NGED did not object in principle to our proposal but noted that the statement should be to provide comfort over the values in the tax reconciliation rather than to provide comfort over the reconciliation itself as this will be Ofgem-mandated.

7.35 SSEN sees the board assurance requirement as a duplication of submissions that are already provided to HMRC and notes that assurance is already implicit in the networks' compliance with existing tax legislation.

[146] See paragraph 6.25 of the Finance Annex: RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[147] See paragraph 7.16 of: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

7.36 ENWL similarly notes that sufficient assurance will be provided over the tax reconciliation through the existing data assurance processes that cover the RIGs submissions, and that this requirement is not warranted.

7.37 The RIIO-ED2 Challenge Group supported the introduction of this requirement.

7.38 Having considered stakeholder responses, we have amended the proposed licence drafting to clarify that the assurance statement should refer to the values input into the tax reconciliation rather than to the template itself. This will be consulted on as part of the RIIO-ED2 licence modifications.

7.39 We note that some networks continue to question the purpose of the statement given existing data assurance requirements implicit within the RIGs. A board assurance statement is intended to provide specific assurance over the accuracy and reasonableness of the values in the tax reconciliation and should require very little additional resource from the companies, who will already be populating the reconciliation.

Tax reconciliation materiality threshold

FQ 24 - Do you have any views on a materiality threshold for the tax reconciliation? & FQ 25 - Do you think that the "deadband" used in RIIO-ED1 is an appropriate threshold to use? If not, what would be a more appropriate alternative?

7.40 In our RIIO-ED2 Draft Determinations,[148] we proposed to use the tax trigger "deadband" level set in RIIO-ED1 (i.e. the greater of 0.33% of opening base revenue allowances and the effect of a 1% change in the rate of corporation tax) as the materiality threshold for the tax reconciliation template and asked stakeholders for views on this.

7.41 All respondents agreed that a materiality threshold is needed, however views were mixed as to the appropriateness of the proposed deadband threshold.

7.42 NGED, UKPN and the RIIO-ED2 Challenge Group agreed that the deadband is an appropriate level to use as a materiality threshold for the tax reconciliation.

7.43 NPg note that an annual deadband is not appropriate, instead they support the use of a cumulative value of the deadband over the price control period, with a review taking place at the close-out of RIIO-ED2.

7.44 ENWL and SSEN did not agree that the proposed deadband was the appropriate measure of materiality for the purposes of the reconciliation. SSEN suggested using a 1% materiality threshold in line with other reopeners.

[148] See paragraph 7.31 of: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

7.45 SPEN note that the deadband in RIIO-ED1 is calculated with reference to base revenue and that the definition of base revenue has evolved in RIIO-ED2 and so amending the calculation to refer to Calculated Revenue before tax would be a more appropriate measure.

7.46 Having considered the responses received, we believe that the deadband proposed in Draft Determinations is the most appropriate materiality threshold to apply in the context of the tax reconciliation as it reflects the relative size of the network companies and was the rate that was used for tax allowance adjustments made during RIIO-ED1.

7.47 However, we note that the composition of base revenue for RIIO-ED2 slightly differs from that in RIIO-ED1 in that for RIIO-ED2, base revenue excludes equity issuance costs. While this equity issuance cost element is not material, we agree with SPEN that it is slightly inconsistent with RIIO-ED1 to exclude equity issuance costs from the base revenue figure used for the calculation of the deadband thresholds. We have therefore included equity issuance costs within the value of base revenue used to calculate this deadband for RIIO-ED2. We do not agree that Calculated Revenue before tax is the best measure to use as this includes other elements that were not included in the equivalent RIIO-ED1 threshold calculation such as incentives and other revenue allowances.

7.48 Our decision is therefore to use each licensee's tax trigger deadband as the threshold for the tax review and to include equity issuance costs within the value of base revenue used to calculate this deadband for RIIO-ED2. The deadband threshold for each licensee will be contained within the Finance&Tax sheet of the RIIO-ED2 PCFM.

Tax trigger and tax clawback

FQ 26 - Do you have any views on our proposals relating to the Tax Trigger and Tax Clawback mechanisms? In particular, do you have any views on a proposed "glide path" for the notional gearing levels used in the tax clawback calculation?

7.49 In our RIIO-ED2 SSMD[149], we decided to retain and simplify the tax trigger mechanism used in RIIO-ED1 for ED2. We also decided to retain the tax clawback mechanism used in RIIO-ED1.

7.50 In our RIIO-ED2 Draft Determinations, we proposed to allow DNOs a level of headroom to allow them to transition to lower levels of notional gearing for tax clawback purposes. In relation to the tax trigger mechanism, we proposed to make no changes to the existing materiality thresholds or process for type B tax trigger events.[150]

7.51 We received seven responses to the tax clawback and tax trigger question, all of which were supportive of our proposals to make no

[149] See paragraphs 6.24 and 6.23 of: RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[150] See paragraphs and 7.22 and 7.19 of: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

change to the type B tax trigger and to provide networks with some headroom in respect of the notional gearing levels used for the tax clawback calculation.

7.52 ENWL had broader concerns with our proposal to reduce the notional gearing level from 65% to 60% over the five years of RIIO-ED2 on the basis that it does not support any reduction to the RIIO-ED1 notional gearing level of 65%. ENWL set out its views in detail in response to FQ19, which is discussed starting at paragraph 5.8 of this document.

7.53 One respondent requested that we formally review the tax clawback policy ahead of Final Determinations to reflect the outcome of that review into our policy for RIIO-ED2.

7.54 We note this piece of work is important and we are currently mobilising this workstream. There wasn't sufficient time to review the clawback mechanism between Draft and Final Determinations, but we intend to review it in early 2023. Any proposed changes that arise from this review will be consulted on and will be promptly incorporated into the relevant RIIO-ED2 guidance and licence instruments, as appropriate.

7.55 We have decided to allow companies some headroom to transition to lower gearing levels in RIIO-ED2 by applying a 'glide-path' to the notional gearing level used for tax clawback purposes allowing networks to use the RIIO-ED1 notional gearing level of 65% in the first year of RIIO-ED2, with a gradual drop in notional gearing until it reaches 60% in the final year of RIIO-ED2 price control.

7.56 The notional gearing rates to be used for the tax clawback gearing level test are shown in Table 17 below:

Table 17: Notional gearing rates to be used for the tax clawback gearing level test

RIIO-ED1 notional gearing	**RIIO-ED2 notional gearing**	**Notional tax**	**gearing clawback**	**to be gearing**	**used level**	**for the test[151]**
65%	60%	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
		65.00%	63.75%	62.5%	61.25%	60.00%

7.57 For type B events, we have decided to make no changes to the existing materiality thresholds or existing notification and determination process because we do not consider any changes are necessary.

[151] The notional gearing level will be 60% for the RIIO-ED2 price control for all purposes except for the tax clawback calculation. The values in the table above are based on a linear reduction from 65% which was the notional gearing level for RIIO-ED1 to 60% in the last year of the RIIO-ED2 price control period.

7.58 This is also in line with our RIIO GD&T2 Final Determinations[152] and we think it is appropriate to align the ED tax trigger policy with those sectors because the RIIO-GD&T2 approach for also holds true for RIIO-ED2 and there are no distinct features of the electricity distribution sector that warrant a different approach.

[152] RIIO-2 Final Determinations, Finance Annex, Paragraph 7.55: RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)

8. Return Adjustment Mechanisms (RAMs)

Purpose	The purpose of RAMs is to provide protection to consumers and investors in the event that network company returns are significantly higher or lower than anticipated at the time of setting the price control.
Benefits	Consumers and investors will benefit from the introduction of RAMs as they would be protected against the possibility of unreasonably high or low returns in the RIIO-ED2 price control. RAMs will help to ensure the fairness of RIIO-ED2 by protecting consumers and investors against ex post overall returns from network price controls deviating greatly from ex ante expectations.

Background

8.1 In our RIIO-ED2 Framework Decision, we decided to introduce sculpted sharing factor RAMs.[153] In our SSMD Finance Annex for RIIO-ED2, we decided that the RAMs will take into account combined performance under the Totex Incentive Mechanism (TIM) and ODIs, and that adjustments under the RAMs will be implemented as part of the close out of RIIO-ED2.[154] We also decided that we would apply symmetry to the upside and downside application of the RAMs thresholds.[155] In the RIIO-ED2 Draft Determinations we set out our proposals for the RAMs threshold trigger levels and adjustment rates.[156]

Final determination summary

8.2 The table below provides a summary of our Final Determination position.

[153] https://www.ofgem.gov.uk/publications/riio-ed2-framework-decision p 44

[154] https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf p 83

[155] https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf p 86

[156] https://www.ofgem.gov.uk/sites/default/files/2022-06/RIIO-ED2%20Draft%20Determinations%20Finance%20Annex.pdf p 91

Parameter	Final Determination	Draft Determination
Primary threshold level	3% plus or minus the baseline allowed return on equity	Same as FD
Primary adjustment rate	Adjustment of 50% applied to returns above or below the primary threshold level	Same as FD
Secondary threshold level	4% plus or minus the baseline allowed return on equity	Same as FD
Secondary adjustment rate	Adjustment of 90% applied to returns above or below the secondary threshold level	Same as FD

Final Determination rationale and Draft Determination responses

8.3 We received nine responses to our consultation position on the RAMs.

8.4 Three stakeholders, including NGED, agree outright with the calibration proposed for the RAMs in DDs.

8.5 Five of the DNOs dispute the calibration of the RAMs. All five DNOs have concerns that the calibration of the RAMs will distort the effectiveness of incentives, noting that there needs to be strong incentives in RIIO-ED2 for genuine outperformance from efficiencies. SPEN and NPg note that outperformance is best managed through the use of mechanisms such as the NARM and UIOLIs, and that consumers are better served through more use of ex ante allowances and well calibrated incentives.

8.6 ENWL note that the upper threshold calibration is broadly acceptable, however their primary concern with the RAM calibration is the decision Ofgem made at SSMD to exclude financing and tax performance from the setting of the RAMs. They are of the view that not including these finance parameters creates an incomplete assessment of equity returns for the assessment of RAMs.

8.7 SSEN and UKPN are of the view that if there is limited probability of the RAMs threshold being triggered, then its inclusion provides little additional value and adds unnecessary complexity in the price control.

8.8 SPEN considers that if the incentive package continues to be asymmetric then the RAMs should be calibrated to reflect this.

8.9 One energy industry body disagreed with the calibration of the thresholds. They are of the view that the RAMs mechanism as proposed offers limited protection against systemic outperformance. They believe

that the thresholds should be lower to provide protection to both consumers and investors.

Threshold levels

8.10 We have decided to implement the RAMs calibration as proposed in Draft Determinations. The RAMs calibration will include two threshold levels of 300bps and 400bps either side of allowed return on equity.

8.11 The inclusion of RAMs in RIIO-ED2 is to act as a failsafe mechanism to protect to consumers and investors in the event that network company returns are significantly higher or lower than anticipated at the time of setting the price control. The RAMs mechanism is necessary, as no other mechanism in the price control either separately or in combination with other mechanisms achieves this aim.

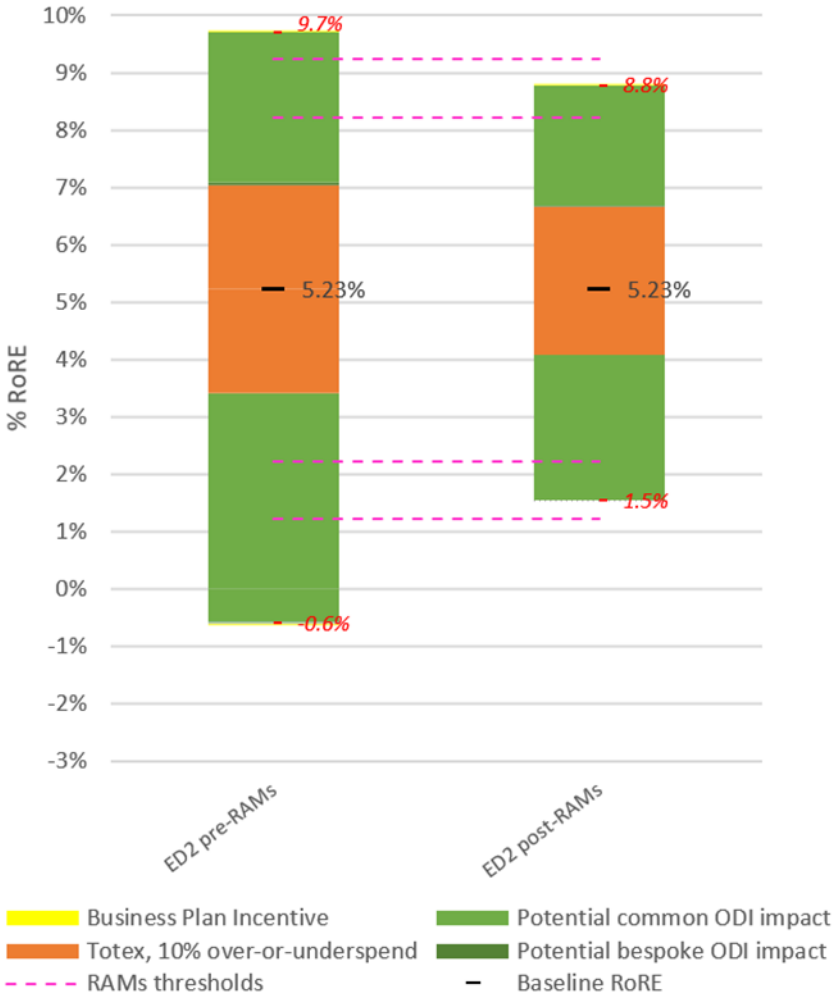
8.12 We therefore disagree with the views expressed by SSEN and UKPN that the RAMs mechanism is not required as a whole in RIIO-ED2. We believe it is appropriate to provide protection mechanisms to consumers and investors in this event whilst still preserving incentives for the companies to outperform.

8.13 Additionally, we disagree with SPEN's and NPg's views that the use of UIOLIs and NARM better serve to manage the risk of outperformance. The NARM and UIOLI serve different purposes in managing uncertainty in allowances. The NARM is a mechanism to ensure that network companies appropriately manage their existing network assets and maintain the risk of asset failure within acceptable bounds. UIOLIs are applied in RIIO-ED2 where mechanisms to adjust allowances are needed for works that have been identified, but the specific nature of work or costs is uncertain. The RAMs mechanism on the other hand protects against performance within incentives and totex as a whole across all aspects of the price control, which neither NARM or UIOLIs together provide protection for.

8.14 Our determination will mean that the primary RAMs threshold will be triggered at 8.23% RoRE (3% above the baseline RoRE of 5.23%) and 2.23% of RoRE (3% below the baseline RoRE of 5.23%). In extremis, the secondary threshold will come into effect at 9.23% of RoRE (4% above the baseline RoRE of 5.23%) and 1.23% of RoRE (4% below the baseline RoRE of 5.23%). This analysis is updated given the change in position for the Base RoRE, incentive package and Totex for Final Determinations[157].

[157] We discuss our position on the change in incentives and totex allowances in the Core Methodology Document, and our position for Base RoRE in chapter X of this document

Figure 6: Illustrative RoRE ranges, RIIO-ED2 average



8.15 Figure 6 demonstrates the RoRE impact of various combinations of ODI performance (x axis) and totex performance (y axis), aggregated across all licensees. This graph is updated from our Draft Determinations to reflect the change in our position for the incentive package, base RoRE and Totex for Final Determinations. This means that the points at which the RAMs threshold trigger are at different percentage points in the RoRE ranges than the trigger points for Draft Determinations.

Table 18: RAM Matrix showing RoRE impact (basis points of combinations of ODIs and Totex performance)

Totex performance 110%=10% overspend 90%=10% underspend	ODI performance (in %RoRE)										
	-4.0%	-3.3%	-2.7%	-2.0%	-1.3%	-0.7%	0.0%	0.7%	1.3%	2.0%	2.7%
110%	-580	-513	-447	-380	-313	-247	-180	-113	-47	20	87
108%	-544	-478	-411	-344	-278	-211	-144	-78	-11	56	122
106%	-509	-442	-375	-309	-242	-175	-109	-42	25	91	158
104%	-473	-406	-340	-273	-206	-139	-73	-6	61	127	194
102%	-437	-370	-303	-237	-170	-103	-37	30	97	163	230
100%	-401	-334	-267	-201	-134	-67	0	66	133	200	266
98%	-364	-298	-231	-164	-97	-31	36	103	169	236	303
96%	-328	-261	-194	-128	-61	6	72	139	206	273	339
94%	-291	-224	-158	-91	-24	43	109	176	243	309	376
92%	-254	-187	-121	-54	13	79	146	213	280	346	413
90%	-217	-150	-84	-17	50	117	183	250	317	383	450

8.16 We disagree that the RAMs will distort the effectiveness of incentives. Our determination suggests that to trigger the RAMs, a notional licensee would need to have a considerable overspend or underspend either alone or in conjunction with a significant out or underperformance against ODIs. For example, Figure 2 demonstrates that the notional licensee would need to achieve 75% of outperformance against ODIs and 6% underspend on their totex allowances to trigger the primary threshold. Although our Final Determination provides for an increase to the strength of the incentive package and changes to the totex allowances, we continue to believe that this analysis suggests that there is limited probability that either the upside or downside RAMs will be triggered in the price control.

8.17 In other aspects of our Final Determinations, we have taken into account historical outperformance in RIIO-ED1 and of previous price controls.[158] This means that, with regards to our ODI package, we are calibrating incentive targets at a rate we consider to be ambitious and robust. Additionally, through our BPI cost assessment processes, we have set allowances that are commensurate with what is required for the DNOs to meet their obligations and deliver against their outputs. Based on this, if we assume that historical performance is accounted for, then we should not see as high a degree of outperformance in RIIO-ED2. On that basis, we do not consider the RAMs being triggered to be likely and we therefore disagree that the RAMs will distort incentives.

8.18 On the upside, we continue to consider that the RAM is calibrated so as to preserve the potential of attractive returns to investors, while protecting consumers from unreasonably high returns. We believe that the RAMs are appropriately balanced to ensure that companies have sufficient incentives to be cost efficient and meet their targets on ODIs.

8.19 The downside RAM threshold is symmetrical to the upside threshold. As set out in Draft Determinations, historical performance from RIIO-ED1 suggests that there is a limited probability of this RAM threshold being triggered.[159] Current DNO forecasts indicate that the largest projected overspend for the RIIO-ED1 period by a single licensee is 5%. If a similar overspend were to occur in RIIO-ED2 a DNO licensee would also need to face ODI penalties equivalent to ~65% of the maximum for the downside RAM to be triggered. This is well beyond the level observed in RIIO-ED1 for any licensee. We also note that our calibration of financeability downside scenarios in Chapter 5 suggests that a downside performance

[158] Review of the RIIO Framework and RIIO-1 Performance, Page 23, https://www.cepa.co.uk/images/uploads/documents/cepa_review_of_the_riio_framework_and_riio-1_performance.pdf

[159] As evidenced through the March 2018 CEPA Report (see previous footnote) of the Review of the RIIO Framework and RIIO-1 performance as one example of the DNO's historical outperformance.

scenario for an individual notional licensee might reasonably fall in the range of 100-200bps RoRE, which is above the initial RAMs threshold.

8.20 Although we consider the risk that the RAM thresholds will be triggered to be low given our analysis above, we are mindful of the challenges posed by the fact that regulators inevitably operate with less than perfect information. Overall, and despite those challenges, our view is that if either the primary or secondary thresholds were triggered, this would suggest there had been a miscalibration when setting the RIIO-ED2 price control. In line with our principal objective and statutory duties, the RAMs serve to protect existing and future consumers, as well as investors, in the event that significant outperformance or underperformance materialises.

8.21 We disagree with SPEN that the RAMs should be asymmetric. Individual incentives are asymmetric in some cases, for example the IIS and the major connections incentive. We set out the reasons for why we believe asymmetry is appropriate in these instances in the Core Methodology Document of this Final Determination. We decided in our SSMD that we consider it is appropriate to maintain symmetry in the RAMs mechanism. At SSMD, we said that we believe that this represents a fair balancing of the interests of consumers and investors.[160] We continue to believe that symmetry is required for the RAMs mechanism to meet its stated objective of acting as a failsafe mechanism for both consumers and investors.

8.22 We disagree with ENWL that the RAMs should be measured using returns taken after financing and tax. We maintain our position that financial and tax performance will not be considered as part of RAMs for the same reasons provided in the SSMC.[161]

8.23 We disagree with the view that the thresholds should be lowered. As set out in Figure 2 the RAMs as calibrated ensure that consumers and investors are protected whilst also allowing for DNOs to be incentivised to deliver against their RIIO-ED2 outputs.

Adjustment Rate

8.24 We received no consultation responses that disagreed with our position on the adjustment rates.

8.25 We have decided to maintain our Draft Determination position to calibrate the adjustment levels to each threshold as follows:

- 300bps above or below RoRE: adjustment of 50% applied to returns above or below the primary threshold level

[160] RIIO-ED2 Sector Specific Methodology Decision Finance Annex paragraph 10.16 RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[161] RIIO-ED2 Sector Specific Methodology Consultation Finance Annex paragraph 10.89RIIO-ED2 Sector Specific Methodology Consultation | Ofgem

- 400bps above or below RoRE: adjustment of 90% applied to returns above or below the secondary threshold level.

8.26 Returns outside of the thresholds above would be adjusted upwards or downward by 50% and 90% if the primary and secondary thresholds are breached, respectively. We believe that this provides for an appropriate glide path to manage returns with a reasonable sharing of upside and downside risk between investors and consumers in the event of a miscalibration of the price control.

9. Indexation of Regulatory Asset Value

Purpose	The RIIO price controls offer inflation protection to investors through inflation adjustments to the RAV. Returns on capital are also provided in real terms. Together these approaches make inflation a key parameter for the RIIO-ED2 price control.
Benefits	An appropriate measure of inflation improves legitimacy and accuracy of the price base for both investors and consumers.

Background

9.1 The RIIO price controls offer inflation protection to investors through inflation adjustments to the RAV. Returns on capital are provided in real terms. Together, these approaches make inflation a key parameter for the RIIO-2 price control.

9.2 An appropriate measure of inflation improves legitimacy and accuracy of the price base for both investors and consumers.

9.3 In our SSMD, we decided to:

- implement an immediate switch from RPI to CPIH at the start of RIIO-ED2 for the purposes of calculating RAV indexation and allowed returns, aligning with the approach in the RIIO-GD&T2 Final Determinations; and
- provide an updated position at Draft Determinations on RPI debt and basis risk.

9.4 The next steps set out in our SSMD were:

> 7.12 The GD&T RIIO-2 Price Control Financial Models implement the switch to CPIH by growing the RPI index as of March 2021 by the CPIH rate of inflation thereafter. This was implemented in this way following stakeholder responses to the statutory consultation on the GD&T RIIO-2 licence modifications. This method remains the default for business plan working assumptions; however, Ofgem intends to consult on areas of potential inconsistency given the lateness of the changes and this consultation may include responses on how the switch has been implemented. Any changes as a result of this consultation will be reflected in updated business plan data templates and as revised working assumptions for inflation.

9.5 Following our SSMD, for Business Plans we implemented a switch to CPIH in the same manner as GD&T2 through development of the PCFM and licence drafting. We received a proposal from SPEN suggesting an alternate method of accomplishing the same switch to CPIH.

9.6 In our Draft Determinations, we proposed the technical details of the switch to CPIH.

Final Determination summary

9.7 The table below provides a summary of our Final Determination position.

Policy	Final Determination	Draft Determination
Implementation of switch to CPIH	Implement the switch to CPIH in the same way as we did for GD&T2. This has been implemented in the RIIO-ED2 PCFM published as part of these Final Determinations (and remains the same as the RIIO-ED2 Business Plan model). This approach uses monthly inflation indices and calculates the April 2023 value of the price index with half RPI and half CPIH, and subsequent months are grown by CPIH thereafter.	Same as FD

Draft Determination responses to FQ28

9.8 Our Draft Determinations posed the question:

> FQ28. What are your views on the technical implementation of the switch to CPIH as set out in the attached PCFM?

9.9 The RIIO-ED2 Challenge Group, NPg, SSE, UKPN, ENWL and NGED agreed with our proposed approach.

9.10 ENWL noted that the move creates CPIH basis risk given inflation-linked financing is typically linked to RPI. We have addressed this response in the chapter on the allowed return on debt.

9.11 SPEN repeated their proposal for an alternate approach, stating they believe it would be simpler.

9.12 SPEN also raised a concern about the use of part-year actual data combined with the forecast methodology, as a forecast of inflation for a

year considers any actuals that may have been available at the time of the forecast.

Final Determination and rationale

9.13 We have decided to retain the approach proposed in Draft Determinations. This is set out in the RIIO-ED2 PCFM published as part of these Final Determinations.

9.14 Regarding SPEN's alternative approach, we remain satisfied that our and SPEN's proposed approaches generate the same result. We believe consistency with the RIIO-GD&T2 models is of greater value than any simplifications the SPEN approach might provide. We consider the next price control period where there is unlikely to be a switch to an alternate index to be an appropriate time to reconsider the forecasting method.

9.15 On SPEN's comment on the use of part-year actual data, we will set out in the PCFH that actual monthly data is updated until June of each year (and no further, even if it is available). When coupled with a calendar year average inflation forecast, this is consistent with the forecast being a "whole year".

10. Other Finance Issues

Regulatory Depreciation and economic asset lives

Purpose	Regulatory depreciation assumptions determine the speed that RAV additions are repaid by consumers.
Benefits	Accurate rates help ensure, over time, that charges are fair and that company revenues reflect annual and economic investment. Rates can reflect the economic and technical lives of the underlying assets.

Final Determination summary

10.1 The table below provides a summary of our Final Determination.

Parameter	**Final Determination**	**Draft Determination**
Asset lives for new additions	45yr asset lives on RAV additions using a straight-line basis.	As per FD.

Background

10.2 The existing policy in RIIO-ED1 is to depreciate the RAV at a rate that broadly approximates to the useful economic life of the network assets and incentivises investment efficiency.

10.3 A return on the RAV is paid through the allowed cost of capital, and the RAV is repaid through depreciation allowances. Therefore, in our view, the rate of depreciation should be set so that different generations of consumers pay network charges broadly in proportion to the value of network services they receive.

10.4 In the RIIO-ED1 Final Determinations[162], we decided that the depreciation approach should transition from a 20-year straight-line asset life (as at 31 March 2015) to a 45-year straight-line asset life (by 31 March 2023).

10.5 In the RIIO-ED2 Draft Determinations, we proposed to continue the RIIO-ED1 approach[163].

[162] RIIO-ED1: Final determinations for the slow track electricity distribution companies, Paragraph 5.1, https://www.ofgem.gov.uk/sites/default/files/docs/2014/11/riio-ed1_final_determination_overview_-_updated_front_cover_0.pdf
[163] RIIO-ED2 Draft Determinations - Finance Annex, para 10.15.

Draft Determination responses

10.6 We received seven responses on regulatory depreciation and asset lives.

Responses to FQ29: Do you agree with our proposal to set depreciation policy on RAV additions in the RIIO-ED2 period to 45-years straight line, based on the average economic life of the assets?

10.7 ENWL, SPEN, SSEN, UKPN, NGED and the RIIO-ED2 Challenge Group agree with our proposal for RIIO-ED2. NGED's view is that Ofgem's review of asset lives in 2011 was intended as a long-term policy decision and it was not appropriate to re-open this policy for financeability purposes for RIIO-ED2[164].

10.8 NPg are not supportive and propose a shorter depreciation lifetime, with the option to use 45 years on a case-by-case basis but accept that the current policy is likely to be adopted for Final Determinations.

10.9 SPEN and NPg think Ofgem should re-consider the depreciation policy for future price controls. ENWL also suggest that Ofgem should be mindful of the impact of the policy beyond the RIIO-ED2 price control. In ENWL's view, the deferment of customer funding over a longer period of time stores up long-term issues for certain credit metrics such as FFO/net debt, compounding financeability issues that in their view exist with the RIIO-ED2 package.

10.10 One stakeholder also referenced evidence submitted as part of the "Call for Input" on RIIO-ED2 business plans ("the GEP report").[165] Some of the arguments raised in the GEP report are like the arguments raised by NPg which we address in our Draft Determinations, but emphasis is placed on the fairness of a depreciation "payment holiday", meaning the lower network charges experienced while transitioning to a longer depreciation period.

10.11 The GEP report states that this is an artificial "payment holiday" and results in today's consumers no longer paying their fair share. It also references the CMA's determination on RIIO-ED1 noting that Ofgem was intending to revisit transitional issues from the change in depreciation policies.

Final Determination

10.12 For the RIIO-ED2 price control, we have decided to use a 45-year straight line depreciation approach. We agree with NGED that there was an extensive review at RIIO-ED1, which was intended to be a longer-

[164] Decision letter on the regulatory asset lives for electricity distribution assets, March 2011. https://www.ofgem.gov.uk/sites/default/files/docs/2011/03/assetlivedecision_0.pdf
[165] https://www.ofgem.gov.uk/sites/default/files/2022-07/GEP%20Understanding%20Asset%20Lives%20260122.pdf

term policy. We remain satisfied that 45 years reasonably reflects economic asset lives based on that review.

10.13 We also note that the CMA determined GEMA was not wrong in its implementation of the transition to a 45-year depreciation policy at RIIO-ED1, notwithstanding the note that Ofgem may revisit the transition period.

10.14 SPEN, NPg and ENWL have tied depreciation to financeability and discuss deferment of customer funding leading to longer-term problems. However, we are satisfied with the outcome of our financeability assessment and consider that a 45-year, straight line depreciation policy does not undermine financeability in RIIO-ED2.

10.15 Regarding the "payment holiday" referenced in the GEP report, we consider that the transition period attempted to balance an immediate switch with a phased implementation of the 45-year lives. Although moving to 45 years changes how depreciation is paid over time, we disagree that the transition is necessarily artificial or unfair. An assessment of the fairness of the depreciation policy needs to look at the payments in the past as well as the future.

10.16 Nonetheless, we expect to consider the appropriate depreciation lifetime at the next price control, consistent with regulatory best practice.

Capitalisation Rates

Purpose	Capitalisation rates determine the proportion of costs added to the RAV with the remainder recovered within the year incurred.
Benefits	Accurate rates help ensure, over time, that charges are fair and reflect annual and economically efficient allocations.

Final Determination summary

10.17 The table below provides a summary of our Final Determination position.

Parameter	**Final Determination**	**Draft Determination**
Use of two buckets	To use two separate buckets to assess capitalisation rates. These two buckets are: (1) ex-ante (variant and non-variant) expenditure, and (2) and	Same as FD

Parameter	Final Determination	Draft Determination
	ex-post (variant) expenditure.	
Principle for setting capitalisation rates	To use estimated natural capitalisation rates.	Same as FD
Capitalisation rates used for Bucket 1 expenditure	To use rates between 66% and 79% on a company-specific basis.	To use rates between 68% and 80% on a company-specific basis.
Capitalisation rates used for Bucket 2 expenditure	To use a rate of 85% on a sector-wide basis.	To use a rate of 98% on a sector-wide basis.

Background

10.18 Capitalisation rates determine the proportion of costs added to the RAV and recovered over time, with the remainder recovered within the year incurred.

10.19 In our SSMC,[166] we proposed a consistent capitalisation policy for RIIO-ED2 as used for the GD&T sectors such that rates reflect each licensee's proportion of opex and capex.

10.20 In our SSMD, we decided that the baseline capitalisation rates would be set based on the natural rate and uncertainty mechanism capitalisation rates based on the best available estimated of the likely natural rate.[167]

10.21 In our RIIO-GD&T2 Final Determinations,[168] we set different rates for ex ante allowances ('Bucket 1'), and ex-post variant expenditure ('Bucket 2'). The latter generally took the form of sector-specific rather than company-specific rates.

10.22 In our RIIO-ED2 Draft Determinations, we implemented our best estimate of the policy position decided at the SSMD stage - namely the use of natural rates. This resulted in proposed capitalisation rates of between 68-80% for Bucket 1, and a rate of 98% for Bucket 2.

Draft Determination responses

10.23 We received eight responses to our consultation on capitalisation rates.

[166] RIIO-ED2 SSMC Finance Annex, Paragraph 8.16, https://www.ofgem.gov.uk/system/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf#page=25
[167] RIIO-ED2 SSMD Finance Annex, Page 62, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf
[168] RIIO-2 Final Determinations, Paragraphs 11.7-11.8, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

Responses to FQ30: Do you agree with our proposal that we should set different capitalisation rates for ex ante allowances and re-openers and volume drivers?

10.24 There were mixed views among DNOs on the proposal to set different rates for Bucket 1 and Bucket 2 expenditure. As regards the proposed rates, DNOs expressed almost universal disagreement with them, especially in respect of those proposed for Bucket 2, for a variety of principles-based, methodological and/or technical reasons.

10.25 SPEN agreed that different rates should be used across Bucket 1 and Bucket 2 but disagree with fixing these rates at Final Determinations. SPEN believe that rates should evolve over RIIO-ED2 to reflect changes to allowances.

10.26 SSEN and NGED agreed with the principle of setting different capitalisation rates for Bucket 1 and Bucket 2 but disagree with the proposed capitalisation rates.

10.27 NPg and UKPN do not support different capitalisation rates for Bucket 1 and Bucket 2. Instead, NPg support a single capitalisation rate across all licensees.

10.28 Citizens Advice favour natural rates as it supports intergenerational fairness.

10.29 The RIIO-ED2 Challenge Group agreed with the use of different rates and the proposed level of rates.

Responses to FQ31: Do you have any evidence that would enable us to improve our estimates of regulatory capitalisation rates?

10.30 NPg was of the view that we had erred and mis-allocated the allowances arising from the cost benchmarking process based on the DNOs' submitted costs when setting allowances and that the allocation of allowances should be based on the outputs of the disaggregated models.

10.31 NPg advised us to correct the allocation of allowances and consequently the capitalisation rates. Both UKPN and SPEN noted that further analysis was required for FDs in how rates would be set.

10.32 Four DNOs provided further evidence to help us improve the estimates of regulatory capitalisation rates.

Final Determination

10.33 DD responses expressed broad support for the use of company-specific capitalisation rates for ex-ante expenditure. There was limited disagreement on the levels set.

10.34 For Bucket 1 expenditure, we have looked to ensure that the capitalisation rates are consistent with the expenditure contained within that category.

10.35 The process we adopted is as follows:

- We requested updated capitalisation rate submissions from DNOs following the publication of DDs, to allow licensees to provide detailed inputs for individual variant activities. Four DNOs submitted updated data.
- We set rates for each individual variant activity and then ran a range of totex scenarios using these rates. Comparing the outcome weighted average capitalisation rate across all licensees, this gave us confidence that it is appropriate to set the rate for Bucket 2 at 85% for all licensees. There are two reasons for this:
    - First, calculated weighted average rates were similar for all licensees.
    - Secondly, this figure is on the lower side of the range of rates considered, which should ensure that licensees will be funded to meet their immediate cost needs.
- With the rate for Bucket 2 set, we calculated a suitable rate for Bucket 1. In their consultation responses, DNOs noted that the natural rates they submitted for Bucket 1 activities in their final Business Plans were no longer applicable, as a number of activities on which they had based these rates had been separated into specific variant activities at Draft Determinations. We therefore took a key subset of load-related variant activities and used these to adjust down submitted non-variant rates, approximating this separation.

10.36 For Bucket 2 expenditure, we agreed with DNOs that further work would be beneficial to implement our best estimate of the likely natural capitalisation rate for that category of expenditure. We have utilised evidence from DNOs to improve the estimate provided at DDs.

10.37 Use of an 85% capitalisation rate for Bucket 2 is consistent with the capitalisation rate used for the same category of expenditure for RIIO-ET2.

10.38 The rates we have decided on for Bucket 1 and Bucket 2 are contained in Table 19 below. The total figures are reflective of the expected split of expenditure across these two categories.

Table 19: Capitalisation rates

Licensee	**Bucket 1 rate**	**Bucket 2 rate**
ENWL	68%	85%
NPgN	73%	85%
NPgY	75%	85%
WMID	77%	85%
EMID	78%	85%

Licensee	Bucket 1 rate	Bucket 2 rate
SWALES	78%	85%
SWEST	79%	85%
LPN	67%	85%
SPN	68%	85%
EPN	68%	85%
SPD	70%	85%
SPMW	70%	85%
SSEH	66%	85%
SSES	65%	85%

RIIO-ED1 close-out and RAV opening balances

Purpose	To ensure the accuracy of opening balances at the start of RIIO-ED2 and that any issues not settled in RIIO-ED1 are captured in RIIO-ED2 allowances.
Benefits	The opening RAV balance and historical RAV additions, along with fast money, drives several of the building blocks of allowed revenue (depreciation, return on RAV) and so will need to be correctly calibrated to ensure the accuracy of allowed revenue.

Background

10.39 There are several areas within the price control that need to be settled once the price control has ended and outturn data becomes known. These include things such as uncertainty mechanisms, Network Output Measures, incentives and the final RIIO-ED1 modification of base revenue (MOD)[169] adjustments, each of which may have different treatments. We have already published our close-out methodology for six of the areas of RIIO-ED1[170] and will further consult on the detailed

[169] The MODt term is used to modify the licensee's Opening Base Revenue Allowance for each Regulatory Year 't' during the price control. The value is calculated at each AIP and
[170] Decision on the methodologies for RIIO-ED1 closeout, https://www.ofgem.gov.uk/publications/decision-methodologies-riio-ed1-closeout

implementation of these six areas as well as how to close out the rest of the RIIO-ED1 price control.

10.40 In our RIIO-ED2 Draft Determinations, we proposed to adopt the same approach to close-out that we did for GD&T companies, ie to use estimated values for closeout adjustments, based on the actual data known to us at the time as well as forecast data for future periods until we are able to formally close out the RIIO-ED1 price control and true-up those estimated values.[171]

10.41 There are three types of close-out adjustments that are needed to reflect the closing position of the RIIO-ED1 price control within RIIO-ED2 allowed revenues. These are:

- closing balances from the final RIIO-ED1 PCFM such as the closing RAV and tax-related balances;
- A final adjustment to revenues from the RIIO-ED1 PCFM, known as MOD[172]; and,
- Revenue adjustments for the RIIO-ED1 variables that are contained within the Revenue Regulatory Reporting Pack, rather than the RIIO-ED1 PCFM.

Final determination summary

10.42 The table below provides a summary of our final determination position.

Parameter	Final Determination	Draft Determination
Close-out adjustments	To use estimated values for close-out adjustments (legacy MOD and legacy RAV) until we can close out the RIIO-1 price controls using actual data.	Same as FD

[171] See paragraph 10.41 of: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

[172] The MOD term is used to modify the licensee's Opening Base Revenue Allowance for each Regulatory Year t during the price control. The value is calculated at each Annual Iteration Process (AIP) and reflects the difference between the recalculated base revenue figure for any licensee for the relevant year t and the Opening Base Revenue Allowance as set in Final Proposals. It also reflects the difference between the recalculated base revenue figures held in the PCFM for Relevant Years t-1 and earlier before the AIP and the recalculated base revenue figures for the licensee held in the PCFM for the same years after the AIP.

Draft determination responses

10.43 In our RIIO-ED2 Draft Determinations, we asked stakeholders for views on our use of forecasts for RAV opening balances for the start of RIIO-ED2, which will be trued-up following the close-out of RIIO-ED1.

10.44 We received seven responses to this question. All respondents agreed with our proposal to forecast closing balances and subsequently true them up when outturn data becomes available.

10.45 One respondent raised a point of detail specific to the capital allowance tax pool balances. We have reflected the super-deduction allowance announced by government in the spring budget of 2021 in licensees' allowed revenues for 2021/22 and 2022/23 as a Type B tax trigger event.[173]

10.46 As such we need to make an adjustment to the opening tax pool balances to reflect the end of the super-deduction from 01 April 2023. This will be done for the general and special rate pools within the RIIO-ED2 PCFM to ensure that the opening pool balances are correct.

Final Determination and rationale

Legacy LMOD (LMOD)

10.47 We have decided to modify the existing RIIO-ED1 PCFM to calculate a legacy Mod or 'LMOD' value for 2023/24 revenue, based on actual performance in 2021/22 and forecast performance in 2022/23. This LMOD value will reflect changes made to the PCFM variable values within the ED1 PCFM and will be input into the RIIO-ED2 PCFM to be reflected in RIIO-2 allowances.

10.48 The LMOD value will be phased evenly over the five years of RIIO-ED2. This approach is in line with our ED1 closeout methodologies decision in which we said that the value of any adjustment made to revenues will be spread across each year of RIIO-ED1.[174]

10.49 The forecast element of the LMOD value will be included in the RIIO-ED1 PCFM on a provisional basis and will be trued-up when we receive actual performance data for 2022/23 in July 2023.

Legacy RAV (LRAV)

10.50 We have decided to take the closing RAV balance, capital allowance tax pool balances and regulatory tax loss balances from the same RIIO-ED1 PCFM used to calculate the provisional LMOD value for 2023/24. The closing balances for RIIO-ED1 will be reflected in the corresponding

[173] The super-deduction is a temporary boost to capital allowances for general and special rate assets. See: Super-deduction - GOV.UK (www.gov.uk)
[174] See the final two bullets of paragraphs 2.11, 3.9, 4.8, 5.7 and 6.8: Decision on the methodologies for RIIO-ED1 closeout | Ofgem

opening balances for RIIO-ED2 to ensure continuity of allowances across the price controls.

10.51 These closing balances will similarly reflect actual data for 2021/22 and forecast data for 2022/23, which we will true up upon receipt of actual data in July 2023. As with the LMOD value, these closing balances will be considered provisional until we can true-them up and fully close-out the RIIO-ED1 price control.

10.52 Using the RIIO-ED1 PCFM to calculate the legacy MOD and legacy RAV and closing tax balance adjustments will be the most straightforward and transparent way to arrive at a closing position for RIIO-ED1 as it contains all the values that make up RIIO-ED1 base revenues and will ensure that revenues earned in the RIIO-ED1 period are correctly reflected in allowances received in the RIIO-2 period.

Legacy adjustments to revenue (LAR)

10.53 We have decided to use a modified RIIO-ED1 Revenue Regulatory Reporting Pack (Revenue RRP) to calculate the revenue adjustments for the variables which currently fall outside of the RIIO-ED1 PCFM and operate on a two-year lagged basis.

10.54 The values within the RIIO-ED1 Revenue RRP are subject to a number of additional true-up calculations that are separate from the RIIO-ED1 PCFM, which makes the process of updating these cumbersome.

10.55 We have therefore decided to bring the calculations from the RIIO-ED1 Revenue RRP into the RIIO-ED2 PCFM to simplify the process of updating and running the model. These values will be included within the "legacy adjustments" section of the input sheet of the RIIO-ED2 PCFM

Next steps

10.56 The close-out process and the implementation of the above determinations will be included within the RIIO-ED2 PCFH and licence conditions and will be consulted on as part of the RIIO-ED2 licence modifications.

Directly Remunerated Services

Purpose	To allow companies to charge their customers directly for certain services.
Benefits	To avoid consumers paying for a service for which the network companies have already been remunerated.

Background

10.57 Directly Remunerated Services (DRS) are activities of the network companies that are settled outside of the normal regulatory price control,

as companies are allowed to charge their customers directly for certain services performed. The policy intent across sectors is to avoid consumers paying for a service for which the network companies have already been remunerated. We provided further information in relation to DRS in our RIIO-ED2 SSMD.[175]

10.58 In our RIIO-ED2 SSMD, we set out our decision to continue with the RIIO-ED1 approach to DRS, but with the annual true-up of DRS via the AIP. We said that the regulatory treatment of Customer Load Active System Service (CLASS) will be considered further.

10.59 We also said that, as per our RIIO-ED1 policy, allowed revenue will reflect the expected revenues and costs from providing these services, where appropriate. Where the actual revenue earned or cost incurred differs from original forecasts, in some cases, it may be appropriate to true-up this difference.

10.60 We also said we aimed to ensure consistency in the numbering of the DRS categories across all sectors, and hence we intended to renumber the DRS categories in the electricity distribution sector in due course to bring them into alignment with the other sectors. Further details of the renumbering of the categories were provided as part of the Business Planning Data Template (BPDT) guidance issued as part of our SSMD.

10.61 In addition, we said that although the RIIO-ED1 approach to the different categories of DRS is appropriate for RIIO-ED2, we will continue to review the case for an additional activity category explicitly to cover activity that relates to services provided by networks to the electricity system operator, but which fall outside of CLASS.

10.62 In the RIIO-ED2 informal licence drafting consultation[176] we consulted on the new numbering scheme for DRS, as well as the inclusion of two new categories of DRS:

a) DRS16: Distribution Network Voltage Control Services which we envisage could be used for CLASS

b) DRS17: EV Provider of Last Resort services

Final determinations update

10.63 We did not pose any question at Draft Determinations and no consultation responses were received on this section.

10.64 As set out in our Final Determinations Overview Document, we have decided not to proceed with either proposal to manage EV Provider of

[175] RIIO-ED2 SSMD Finance Annex, Paragraphs 8.62-8.65, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

[176] https://www.ofgem.gov.uk/publications/riio-ed2-informal-licence-drafting-consultation

Last Resort (PoLR) funding, and therefore there is no need to include DRS17 (Electric Vehicle Provider of Last Resort).

10.65 A decision on the CLASS consultation is expected to be published in December before or alongside the statutory consultation on the licence modifications implementing the RIIO-ED2 Final Determinations. We aim to reflect the decision on CLASS in the statutory consultation.

10.66 In RIIO-ED1, a fixed estimate of value-added services net revenue was deducted from allowed totex expenditure. Considering the move to updating inputs via the AIP, we will review the implementation of DRS within the PCFM so there remains appropriate incentivisation of DRS10 (Value Added Services) and DRS16 (Distribution Network Voltage Control Services). We intend to provide an update in due course through the statutory consultation.

10.67 We are not at this time adding any other activity categories that relate to services provided by networks to the electricity system operator, apart from CLASS.

10.68 We will be responding to the responses received in the informal licence drafting consultation and will propose our modifications of the relevant licence condition on DRS in the statutory consultation on licence modifications to implement our RIIO-ED2 FDs.

Amount recovered from the disposal of assets

Purpose	To appropriately incentivise networks to dispose of assets no longer required.
Benefits	Consumers will benefit from receiving a share of the proceeds from the sale of assets no longer required.

Background

10.69 In our RIIO-ED2 SSMD, we said that companies should be incentivised to dispose of assets where they are no longer required and consumers should also benefit from this. We decided to continue with the RIIO-ED1 approach for RIIO-ED2, namely that cash proceeds from the disposal of assets (or transfer to a company within the licensee group) should be netted off against totex from the year in which the proceeds occur, which will go through the Totex Incentive Mechanism (TIM). As discussed in our May 2019 SSMD for the transmission and gas distribution sectors, the RIIO-ED1 approach maintains incentives, and is well supported by DNOs[177].

[177] RIIO-2 SSMD Finance Annex, Page 118, https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=118

10.70 The proceeds of asset disposals include:

- cash proceeds of sale at an arm's length to a third party external to the licensee group
- transfer at an arm's length fair market value of assets to a company within the licensee group, subject to review by Ofgem
- cash proceeds of sale of assets as scrap
- amounts recovered from third parties, including insurance companies, in respect of damage to the disposed assets.[178]

10.71 Where an asset is transferred to a company within the licensee group and then subsequently sold to a third party, we consider it appropriate for Ofgem to review the sale of the asset to a company within the licensee group. That reflects existing practice in RIIO-ED1 and offers an important protection for consumers against the transfer of assets at below market price. Where there is a difference between the internal transfer value and the proceeds from sale to a third party, we will consider whether a further adjustment to totex is required. The licensee will be required to inform Ofgem promptly of any completed sale to a third party, setting out:

- the sale proceeds from a third party
- the factors which the licensee considers account for any difference between the transfer value and the proceeds from a third party, referring in particular to:
  - the general movement in market prices of similar assets
  - costs incurred by the company in improving or maintaining the asset.

10.72 In our SSMD, we asked companies to propose their strategy on the disposal of assets as part of their Business Plans. The asset disposal strategy for RIIO-ED2 should be clearly explained in terms of how consumers would benefit from financial proceeds or fair value transfers of asset (including land) disposals during RIIO-ED2.

Final Determinations update

10.73 We are not making any new decisions on amount recovered from the disposal of assets, and consultation responses did not address this issue.

10.74 The decision to continue with the RIIO-ED1 approach was made in paragraph 8.73 of the RIIO-ED2 SSMD.

10.75 We consider that the deduction of net proceeds from totex provides an appropriate level of incentivisation for the network to achieve the best

[178] Amounts recovered from third parties, including insurance companies, in respect of damage to assets which remain with the licensee will continue to be reported as cost recoveries and not as disposal proceeds.

sale price and allows consumers to benefit from the sale of assets no longer required. However, we consider there might be a case to treat all of the incentivised net proceeds as fast money, especially for those assets already fully depreciated. We will consider this further during RIIO-ED2 and consult on it, as appropriate.

10.76 The table below provides a summary of our Final Determination position.

Parameter	**Final Determination**	**Draft Determination**
Proceeds of sale	Netted off Totex	Same as FD
Subsequent sale to third party	Ofgem to review sales of assets to a company within the licensee group and consider whether a further adjustment to totex is required	Same as FD

Equity-related notional company assumptions

Purpose	To provide reasonable assumptions for modelling an efficient notional company. The efficient company may incur costs raising new equity – either publicly or privately - and will, from time to time, pay dividends to investors, both of which we reflect in our assessment of allowed revenues and financeability.
Benefits	Fair assumptions allow us to appropriately model, and, given our view on issuance costs, remunerate the notional company fairly.

Background

10.77 We decided in our SSMD that licensees will be required to report annually on and explain their approaches to dividends over the RIIO-ED2 price control period along with any factors that will influence their dividend policies.[179]

[179] RIIO-ED2 SSMD Finance Annex, Page 66, https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision

10.78 We provided a working assumption for notional company dividends of 3% of equity RAV.[180] This was the same level as set in the RIIO-GD&T2 Final Determinations.[181]

10.79 For equity issuance, we provided a working assumption of 5% of equity value raised.[182] This was the same level as set in the RIIO-GD&T2 Final Determinations.

10.80 We required the companies to set out in their Business Plans a clear explanation of the company's dividend and equity issuance policy and strategy.[183]

10.81 In our Draft Determinations, we proposed a dividend yield of 3.0% of equity RAV and an allowance for the cost of raising new equity of 5.0%. Although we did not ask a specific question regarding our equity assumptions, companies made comments regarding what they termed as equity financeability in response to FQ19 and we address these points below.

Final Determination summary

10.82 The table below provides a summary of our Final Determination.

Parameter	Final Determination	Draft Determination
Value of allowance for cost of raising equity	5% of equity raised	Same as FD
Dividend yield for the notional company	3% of RAV	Same as FD

Final Determination rationale and Draft Determination responses

10.83 We have decided to retain the assumption proposed in Draft Determinations of a dividend yield for the notional company of 3% of RAV. We have also decided to retain an assumed allowance for issuance costs associated with notional equity issuance of 5% of the equity raised.

10.84 We received 4 responses to our proposals. As noted above, although we did not ask a specific question in DDs, some of the companies commented in their response to FQ19 not only upon debt financeability, but what they termed 'equity financeability'.

10.85 Citizens Advice supported our proposals.

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[180] RIIO-ED2 SSMD Finance Annex, Page 69, ibid.
[181] 6 RIIO-2 Final Determinations Finance Annex, Page 138, RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)
[182] 7 RIIO-ED2 SSMD Finance Annex, Paragraph 8.48, ibid.
[183] RIIO-ED2 Business Plan Guidance, Page 64, https://www.ofgem.gov.uk/publications/riio-ed2-business-plan-guidance

10.86 SSEN said that the 5% allowance for new equity raised was adequate. ENWL and SSEN both commented that our proposed level of dividend did not provide sufficient returns to attract investors. SSEN was of the view that, taking into account the required equity fundraising, our proposals would amount to a negative dividend yield. ENWL noted that the notional company could only pay a 2% dividend yield.

10.87 SPEN said that we had provided little evidence regarding equity financeability, but they did not state any new arguments as to why our proposed level of 3% of RAV was incorrect.

10.88 We note there were no objections to the assumption of 5% for the costs of raising new equity.

10.89 We do not agree with ENWL's contention that the notional company would not be able to pay dividends at the 3% of RAV level. On our modelling and the cost of capital proposed at DDs, the notional company does not require an equity injection even at the level of totex requested by ENWL in its business plan.

10.90 We do not agree with SSEN's statements about its financial position in RIIO-ED2 discussed in paragraph 10.86 above. On our modelling of its two licensees, SSEH does reach a peak gearing of c. 68% for a notional base case but this is because of an investment of £240m into the Shetland Interlink in 2026 — an approximately 10% increase in RAV. SSES requires no equity injection on a base case. Therefore, the situation SSEN describes is caused by the size of totex on a particular infrastructure investment which will generate returns for investors.

10.91 We could not see a clear link between actual companies and the notional company within the arguments raised. Dividends payable are strongly influenced by growth - if growth is high enough - no dividends would be payable (in fact extra equity would be needed) absent increased borrowing. Under the Modigliani and Miller theorems, investors are motivated by total returns and indifferent to the level of dividends, so we continue to believe that RAV growth and dividend assumptions should be considered together. We believe our decision allows companies to pay reasonable returns to investors.

Pension scheme established deficit funding

Purpose	To provide network companies with a pass-through allowance to cover the costs of funding their defined benefit pension scheme deficits.
Benefits	We have a long-standing commitment to funding the network companies' defined benefit pension scheme deficit payments. This is done through a pass-through allowance, which is reviewed triennially. Continuing this

process from RIIO-ED1 and aligning it with GD&T will ensure consistency.

Background

10.92 We update the networks' pension allowances through a triennial review, the policy and process for which we updated in April 2017.[184] We completed the last review in November 2020.[185] The next triennial review will take place in November 2023 and we intend to set the established deficit pension allowance from 1 April 2024. This review will sit outside the RIIO-ED2 price controls for all sectors.

Update

10.93 The table below provides a summary of our Final Determination position.

Parameter	Final Determination	Draft Determination
Pensions	No change to the pension-setting process for RIIO-ED2	Same as FD

Rationale and draft determination responses

10.94 We didn't ask a specific question on Pension Scheme Established Deficit funding.

10.95 In line with our RIIO-ED2 SSMD and Draft Determinations, we are making no changes to the pension-setting process for RIIO-ED2 on the basis that the pensions triennial review sits outside of the price control review and this is in line with our policy for GD&T sectors.[186]

10.96 We expect licensees to assume pension allowances for RIIO-ED2 that reflect the outcome of the triennial review and to use the pension allowances as directed following the November 2020 pensions reasonableness review.

[184] Decision on Ofgem's policy for funding Pension Scheme Established Deficits, https://www.ofgem.gov.uk/publications/decision-ofgems-policy-funding-pension-scheme-established-deficits
[185] Revised pension allowance values and completion of 2020 reasonableness review, https://www.ofgem.gov.uk/publications/revised-pension-allowance-values-and-completion-2020-reasonableness-review
[186] See paragraph 8.53 of: RIIO-ED2 Sector Specific Methodology Decision Finance Annex | Ofgem and paragraph 10.88 of RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

Transparency through RIIO-ED2 reporting

Executive director remuneration and dividends

Purpose	Annual reporting to provide clarity in relation to executive director remuneration and dividends practices and policies, and how these are linked to the performance of the regulated business and their obligations to consumers.
Benefits	Transparency in this area helps to build consumers' and other stakeholders' trust and confidence that the regulatory regime is protecting consumers' interests. It also seeks to provide good outcomes for consumers by engaging reputational incentives, influencing positive behaviours and policies, and enabling increased stakeholder accountability.

Corporate ownership and governance framework

Purpose	Non-financial reporting of corporate ownership structures, company governance and decision-making processes at the regulated company level, to improve accountability through transparency.
Benefits	Clarity on regulated company governance arrangements enables consumers and other stakeholders to better engage and scrutinise licensees' actions and performance, and builds confidence that the regulatory regime is protecting consumer interests.

Background

10.97 In the Draft Determinations for RIIO-ED2 we set out our view that increased transparency in how regulated network companies operate, including how remuneration and dividend policies are taking account of consumer interests, will lead to greater accountability and increased confidence that the regulatory regime is protecting consumer interests.

10.98 The proposed reporting requirements focus on demonstrating to consumers how the regulated business links pay and dividend policies to meeting consumer needs. Inclusion within regulatory reporting ensures

that this information is available consistently across licensees, regardless of differing corporate structures and statutory corporate reporting requirements, allowing for ready comparison. The addition of corporate ownership and governance reporting provides context and better understanding of how licensees operate and take decisions within their corporate group. Licensees would be required to publish this information as part of their regulatory reporting pack so that these measures may enable greater scrutiny of licensees' delivery for customers.

Final determination summary

10.99 The table below provides a summary of our Final Determinations.

Parameter	Final Determination	Draft Determination
Executive director remuneration	Annual reporting of executive roles in relation to the regulated business, to be published by the licensee on their website. Provide same level of reporting for each executive director, as found in the statutory accounts for listed companies, including fixed and variable pay, and share ownership. Narrative reporting explaining incentive policies and remuneration decision-making and how remuneration policies are linked to company performance and consumer obligations.	Same as FD
Dividends	Annual reporting of actual dividends, to be published by the licensee on their website. Narrative reporting explaining licensee's approach to dividends and any factors that will influence these policies, and how dividend policies are linked to consumer obligations.	Same as FD
Corporate ownership and governance framework	Non-financial reporting of corporate ownership structure of the licensee, to be published by the licensee on their website, covering reserved matters, board composition and committees.	Same as FD

Rationale and Draft Determination responses

10.100 We have decided to implement annual reporting requirements on executive remuneration and dividend policies, as well as a broader overview of corporate ownership and governance arrangements.

10.101 We received eight responses to FQ33 in response to the Draft Determinations consultation. Five licensees did not support our proposed measures, often submitting a similar response to what they had provided to a previous consultation in April 2022[187] in relation to the introduction of these measures for the GD2+T2 licensees and to which we responded in our Decision on modifications to the RFPR and RIGs for RIIO-GD&T2 in June 2022.[188] Respondents who disagreed with our proposed measures were primarily concerned with reporting of executive remuneration, which we address below. Some objections were also raised in relation to dividend reporting.

10.102 Citizens Advice, RIIO Challenge Group and UKPN were supportive of the proposed measures. Citizens Advice were supportive especially of the requirement for licensees to explain approaches to dividends. UKPN noted they supported the additional reporting in principle and that it would improve the transparency of a company's performance under the price control, however, it stated the need for additional reporting to be proportionate.

Executive Remuneration

10.103 Five respondents were of the view that licensees should not be subject to the same reporting standards as listed companies if they are not listed themselves, and that corporate governance standards should be set by Government and the FCA and not through regulatory reporting. We do not agree that it is beyond the remit of regulatory reporting to be concerned with transparency in these areas of the regulated business. Prior to the introduction of the RFPR reporting framework, distribution licensees were required under Standard Condition 44 "Regulatory Accounts"[189] to provide a Corporate Governance Statement in line with the UK Corporate Governance Code, as per the requirements on listed companies.[190] Since 2019 under the RIIO-ED1 framework, consents are in place relieving licensees of their obligations under the Regulatory Accounts condition.[191] In our view, establishing new corporate

[187] Notice of proposed modifications to the Regulatory Financial Performance Reporting (RFPR) template and guidance for RIIO-2 | Ofgem
[188] Decision on modifications to the Regulatory Financial Performance Reporting (RFPR) template and Regulatory Instructions and Guidance (RIGs) for RIIO-2 | Ofgem
[189] Electricity Distribution Consolidated Standard Licence Conditions (ofgem.gov.uk) see page 231.
[190] A comparable Regulatory Accounts condition is also in the Electricity Transmission (Standard Condition B1) and Gas Transporter (Standard Special Condition A30) licences
[191] With the exception of NPg, who have not requested consent not to produce Regulatory Accounts

governance reporting requirements in the RIGs is a proportionate and flexible approach to ensure transparency in these areas, with consistency across licensees regardless of the corporate governance code the licensee has adopted, or is required, to report against within their statutory reporting obligations. Two licensees noted the recent commitment by Government to extend reporting and corporate governance requirements for 'public interest entities'[192]. In our view this will not impact the proposed regulatory reporting requirements, and we note that not all relevant licensees will fall under the new definition of a public interest entity.

10.104 Our view remains that the standard of transparency required for listed companies in respect of executive remuneration is also a proportionate requirement for the monopoly network companies that run energy infrastructure funded through consumer bills. Consumers cannot choose their local network providers and have no choice but to use their services. It is therefore important that consumers have transparent information on how companies running the infrastructure reward their directors in a way that seeks to protect the interests of consumers.

10.105 The reporting measures proposed as part of our Draft Determinations for RIIO-ED2 intend to drive behaviours that protect consumer interests and seek to ensure that directors are accountable for the licensee's performance for the benefit of consumers. Reporting this information as part of regulatory reporting will ensure that this is demonstrated transparently for stakeholders.

10.106 Five respondents were of the view that these measures overlap with existing statutory reporting requirements, such as those in statutory accounts and Standards of Service Statement (Electricity Act 1989 section 42C 'Remuneration and Service Standards'). We acknowledge the existence of some overlap with the statutory reporting requirements for listed companies, in which case we expect the relevant information can be reiterated in the regulatory report and updated, as needed. While the Standards of Service statement addresses executive remuneration of price-controlled companies in relation to standards of service outcomes, this relates to specified matters only, and does not fully reflect company performance and consumer outcomes as envisaged by these RIIO-ED2 reporting measures.

10.107 Four respondents were of the view that executive remuneration is personal data that is commercially sensitive. As explained in paragraph 10.102 of the Draft Determinations Finance Annex, publication of executive remuneration figures is required in the statutory accounts for listed companies and has been adopted sector-wide among regulated water companies. We have not been provided with a specific rationale as

[192] Restoring trust in audit and corporate governance: government response to consultation on strengthening the UK's audit, corporate reporting and corporate governance systems (publishing.service.gov.uk)

to why publication of similar data cannot also be applied to regulated network operators. We note that section 42C (Remuneration and service standards) of the Electricity Act 1989 also requires that licensees publish their remuneration policies where applicable.

10.108 Two respondents were of the view that consistent reporting of dividends and executive remuneration figures could be misinterpreted by stakeholders and overlook differences and nuances between the licensees. Narrative reporting provides a space for licensees to explain any aspects of their company structure that could affect interpretation, and it would be the responsibility of the licensee to ensure that reporting returns are presented in a way that is accessible and intuitive to stakeholders.

Conclusion

10.109 We have considered network licensees' concerns regarding these additional reporting requirements. We remain of the view stated in the Draft Determinations that this reporting is justified because transparency in these areas will help to protect the interests of consumers in line with the Authority's principal objective, by driving positive behaviours and providing accountability to consumers for licensee directors' actions. In recent years there has been increased scrutiny of executive pay and shareholder returns, and increased transparency on these issues as part of the price control will help to build consumer trust and confidence that the regulatory regime is protecting their interests.

10.110 There will be further opportunity to engage on the implementation of these reporting requirements and how they are built into the RFPR and RIGs framework. We remain open to discussion with licensees and other stakeholders to ensure effective implementation.

Annual Iteration Process

Purpose	To provide a process of continuously updating allowed revenue and reporting of regulatory data.
Benefits	Increasing transparency and reducing overall regulatory burden.

Background

10.111 The AIP for the PCFM allows the recalculation of revenue allowances annually using an updated set of PCFM Variable Values. As a result, any changes to inputs, such as actual expenditure, can be reflected in the forthcoming AIP rather than waiting until the next price control.

10.112 During RIIO-ED1, Ofgem was responsible for publishing a consolidated copy of the PCFM following each AIP and the calculation of Allowed Revenue was dependent on Ofgem directing each of the re-calculated PCFM Variable Values and a MOD adjustment term. This fixed MOD term was subsequently used by licensees in setting their Allowed Revenues and ultimately their network charges.

10.113 In our RIIO-ED2 Draft Determinations, we proposed to consolidate all of allowed revenue into the RIIO-ED2 PCFM such that it calculates total allowed revenue rather than just base revenue.[193]

10.114 We also proposed to require licensees to update and publish the RIIO-ED2 PCFM themselves in accordance with the licence, PCFH and related guidance.

10.115 Given the self-publication proposal, we also proposed to require licensees to use best endeavours when setting network charges to ensure recovered revenue equals allowed revenue.

Final Determination summary

10.116 The table below provides a summary of our final determination position.

Parameter	Final Determination	Draft Determination
Consolidated reporting and calculation of allowed revenue	To consolidate all revenue into the RIIO-ED2 PCFM	Same as FD
Licensee self-publication on allowed revenue	To require licensees to update and publish the PCFM themselves in accordance with the licence, PCFH and related guidance.	Same as FD
Best vs reasonable endeavours in charge setting	To require licensees to use their best endeavours rather than reasonable endeavours in setting networks charges to ensure that recovered revenue equals allowed revenue.	Same as FD

Final Determination rationale and Draft Determination responses

Consolidated reporting and calculation of allowed revenue (FQ34)

10.117 We received seven responses to our proposal on consolidated reporting all of which were supportive of integrating all of the revenue calculations

[193] See paragraph 10.115 of: RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

within the RIIO-ED2 PCFM. Two DNOs outlined the need for continued engagement with Ofgem to ensure that the model is developed in a timely manner so that licensees can familiarise themselves.

10.118 We have decided to consolidate all revenue into the RIIO-ED2 PCFM as proposed in our Draft Determinations because this will increase transparency by ensuring all data is made public within one model.

Self-publication and calculation of allowed revenue (FQ35)

10.119 We received eight responses to our proposal of which six were supportive and the remaining two raised some concerns, albeit they did not object.

10.120 UKPN raised concerns around the need for clear and unambiguous guidance and noted that certain incentives and uncertainty mechanisms are dependent on direction from Ofgem. NGED similarly requested that licence documents will need to make very clear how the PCFM variable values should be calculated.

10.121 Citizens Advice noted that assurance will be required to ensure the accuracy of PCFMs if the licensees update and publish it themselves. The RIIO-ED2 Challenge Group also agreed that while there are good practical reasons for the proposal that it will need to include arrangements for detailed monitoring by Ofgem.

10.122 ENWL welcomed the proposal for Ofgem to also publish a consolidated RIIO-ED2 PCFM following the AIP to serve as a single point of reference for all stakeholders and industry.

10.123 NPg raised a concern with the current PCFH drafting which requires licensees to provide Ofgem with a version of the model it intends to publish with its charging statement along with a commentary highlighting what has changed since the last publication 14 days before it publishes its charges.

10.124 While there has been broad support for the concept of self-publication of an AIP, we understand licensees are keen to see more detailed guidance around how to update the PCFM variable values. Our intention in moving towards self-publication of allowed revenue is to create a process in which the licensee can more easily reflect changes to its PCFM variable values to make the price control more cost-reflective.

10.125 Ofgem will still be responsible for the special licence conditions which define allowed revenue, as well as the policies and methodologies for updating PCFM variable values. DNOs will be required to follow these methodologies as set out in the PCFH and the PCFM Guidance. As such we do not consider it necessary to direct variable values as part of the AIP as was done in RIIO-ED1.

10.126 The licence conditions and the PCFH will be consulted on as part of the RIIO-ED2 licence modifications and the PCFM Guidance will be developed and consulted on with the RIIO-ED2 Regulatory Instructions and Guidance.

10.127 In practical terms, Ofgem will continue to be responsible for the RIIO-ED2 PCFM and will make the required modifications to ensure that it is operating in line with the special licence conditions, ahead of each AIP. This PCFM will then be used by licensees to update their variable value inputs to reflect updated actual and forecast data. We will then review these updates through the AIP, which will culminate in the licensee publishing the RIIO-ED2 PCFM on its own website but not before it has given Ofgem 14 days' notice of the version of the model that it intends to publish.

10.128 The reason for the 14-day notice period is because it gives Ofgem an early view of the Allowed Revenue figures that DNOs intend to base their tariffs on. As DNOs will be responsible for setting Allowed Revenues, we consider it valuable for Ofgem to have the opportunity to review and query any changes to the PCFM Variable Values, if necessary. We would also add that the 14-day notice period before the publication of an AIP is not something new: in RIIO-ED1 Ofgem provided 14 days' notice to the DNOs.

10.129 We have therefore decided to require licensees to update and publish the PCFM themselves in accordance with the licence, PCFH and related guidance. Ofgem will then subsequently publish a consolidated version of the RIIO-ED2 PCFM on its website, following each AIP.

10.130 We will continue to work with stakeholders on the licence and handbook drafting and will engage with them in developing the PCFM guidance, to ensure that the process is clear, practical and does not conflict with tariff setting.

Using best endeavours to set network charges (FQ36)

10.131 We received eight responses to our proposal to require licensees to use their best endeavours when setting their network charges.

10.132 One consumer body supported a best endeavours obligation for charge setting, as did the RIIO-ED2 Challenge Group, noting that a 'reasonable endeavours' obligation is not sufficient and that there is no basis for arguing that the DNOs' price control settlement should differ from that of GD&T in this regard.

10.133 All licensees were opposed to this proposal, saying that the change to self-publication will not improve licensees' ability to forecast their allowed revenues to the extent that requiring licensees to use their best endeavours is justified.

10.134 The DNOs said that efforts to improve the accuracy of forecasting of networks charges may come at considerable costs and will only ever make marginal improvements.

10.135 They also argue that there are existing safeguards and interest penalties in place for under or over-collection of revenue, which ensure customers ultimately pay the correct amounts.

10.136 DNOs raised further concerns over the requirement to give 15 months' notice of changes to network charges, citing additional complexities with forecasting tariffs in the electricity distribution sector and suggesting that a best endeavours requirement would lead to an increased likelihood of DNOs having to request a derogation from the 15-month notice period, if it becomes apparent that allowed and recovered revenue were to diverge.

10.137 NGED suggested that if Ofgem introduces a best endeavours obligation, it must include a set of exhaustive guidance specifying the actions that DNOs should undertake to meet the standard which should be set in the licence itself.

10.138 NPg raised a concern over the fact that the new obligation sets a more accurate target of ensuring Recovered Revenue equals Allowed Revenue rather than ensuring it does not exceed Allowed Revenue, which is the obligation that applies to RIIO-GD&T2 companies.

10.139 The obligation to constrain network charges to collect the allowed amount of revenue is a fundamental obligation in a price control, and we continue to believe that it is right to expect the DNOs to use their best endeavours to comply with this requirement.

10.140 While we note licensees oppose a best endeavours obligation for charge setting on the basis that it is more stringent than a reasonable endeavours obligation, we reiterate that this is not a strict obligation to achieve at all costs. It would simply require DNOs to do their best to forecast charges with the information that is available to them at the time of charge-setting. Our view is that best endeavours is what a prudent and reasonable DNO acting in its own interests should do.

10.141 We recognise that some variables are difficult to forecast 15 months in advance. However, we have made the decision to give DNOs more control in the process of setting their Allowed Revenues and publishing the RIIO-ED2 PCFM and as such we consider that a greater degree of responsibility in charge-setting is appropriate to accompany this.

10.142 We note also that the gas and transmission sectors have a best endeavours obligation and while they do not have a 15 month notice period, we do not see the length of the notice period as a factor that warrants a different approach for RIIO-ED2. We think all network licensees should do their best when forecasting with the information that is available to them at the time of tariff-setting. Differences arising between actual costs incurred and the tariffs set at the beginning of the 15-month notice period will not represent a breach of the licence condition where licensees have used their best endeavours at the time of setting tariffs.

10.143 We also note that the gas and transmission sectors obligation is not to "exceed" allowed revenue, whereas we are proposing an obligation to "equal" allowed revenue for RIIO-ED2. This proposal is a consequence of feedback from DNOs in Licence Drafting Working Groups that this is

current industry practice and that the licence obligation should reflect reality. We agree, we also think it more accurately reflects the intent of the price control and the charge setting process. We do not think this warrants any change to our proposals to have a "best endeavours" obligation, since this is already industry practice, and this is not a strict obligation, but an obligation to try ones best.

10.144 We do not agree that a best endeavours obligation would result in a level of effort and cost that would be detrimental to consumers. On the contrary our view is that attempting to forecast allowed revenues accurately will ensure cost reflectivity in tariffs. We do not consider that a best endeavours obligation would oblige a company to spend time or resources on attempting accurately to forecast aspects of allowed revenue more than the value those attempts would have.

10.145 In response to the suggestion that the regulator should provide a set of exhaustive guidance specifying the actions a DNO should undertake to meet a best endeavours obligation, this is not something that we do for the other sectors and it may not be possible to do so. Instead, we would point out that the RIIO-ED2 framework contains a RIIO-ED2 PCFM and RIIO-ED2 Handbook, both of which are of equal status to the licence and are used to set Allowed Revenue. The Handbook will contain guidance on how to forecast specific variables and the PCFM will contain the calculations that will translate these forecasts into Allowed Revenue.

10.146 We have therefore decided to require DNOs to use their best endeavours when setting their network charges for the RIIO-ED2 price control.

Interest on prior year adjustments (time value of money)

Purpose	Ofgem applies a range of interest rates to the different kinds of revenue true ups relating to prior years.
Benefits	A properly calibrated rate of interest that reflects the actual opportunity cost of capital faced by the network will ensure that networks can recover their financing costs and that consumers are protected against excessive costs. This enables companies and customers to remain broadly neutral to deviations in cash flow timing.

Background

10.147 We make three kinds of revenue true-ups relating to prior years, to which it applies a rate of interest:

- Historical revisions to PCFM inputs (e.g. such as reporting totex underspend and reducing revenue accordingly).

- Incentive, or other income 'earned' in previous years, forming part of allowed revenue two years after.
- Correcting charging error for amounts over or under recovered based on the ex ante restriction (a DNO sets out to collect 100, but actually collected 105).

10.148 In RIIO-1, there is a variety of interest rates applied to these adjustments across sectors:

- Nominal WACC, for historical revisions to PCFM model inputs.
- Bank Rate + 150bps for GT, GD, ED charging error.
- Bank Rate + 200 bps for ET charging error.
- Bank Rate only, or nominal WACC for some incentive revenue earned by past performance.

10.149 We refer to these rates of interest as the Time Value of Money (TVOM) associated with that true-up.

RIIO-GD&T2

10.150 In our Draft Determinations for the GD, GT, ET, and ESO licensees, we consulted on using TVOM for all true ups based on the short-term cost of debt.[194]

10.151 We cited a CEPA study published at that time, which noted that a nominal WACC was a valid choice but provided compelling reasons why a short-term cost of debt may be appropriate.

10.152 We received fifteen responses to our consultation questions as well as a paper prepared by First Economics for the ENA. In general, there was little support for a short-term cost of debt-based rate universally applied to all true ups.

10.153 In our RIIO-GD&T2 Final Determinations[195] we decided to retain two separate rates for the RIIO-GD&T2 price controls, acknowledging that the proposal to use one TVOM was a move away from Ofgem regulatory practice. However, we said that will continue to review the case for the application of one TVOM applicable to all revisions and corrections, engaging further with other GB regulators and with industry on this issue, drawing upon the experience of the new RIIO-2 AIP arrangements. We said that where appropriate, we would consult on any proposed changes to our TVOM approaches.

[194] RIIO-2 Draft Determinations Finance Annex, Page 162, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=162

[195] RIIO-2 Final Determinations Finance Annex, Page 126, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf#page=126

RIIO-ED2 Draft Determinations

10.154 In our RIIO-ED2 Draft Determinations, we proposed to use a single true-up mechanism with a uniform TVOM for all types of prior year adjustments and true-ups, using nominal WACC as the rate.

10.155 We proposed this despite acknowledging there were good arguments to support a short-term cost of debt for true ups that are separable and low risk (constituting only cash flow timing risk). However, we believed using one single true-up mechanism was preferable because two different interest rates are potentially gameable through offsetting forecast errors. We stated that in bundling all forms of adjustment into one pot, WACC is the more appropriate rate for compensating delays in funding for re-openers, incentives, or other uncertain values.

10.156 We also stated that our proposal was preferable to retaining the status quo because the other proposed changes to the Annual Iteration Process, which give DNOs more responsibility for self-publishing their allowed revenue, creates a gaming risk when there are multiple rates for different sources of forecasting error.

Final Determination summary

10.157 The table below provides a summary of our Final Determination position.

Policy	**Final Determination**	**Draft Determination**
True up mechanism and the interest applicable	A single true-up mechanism with a uniform TVOM for all types of prior year adjustments and true-ups, using nominal WACC as the rate	Same as FDs.

Final Determination rationale and Draft determination responses

10.158 We have decided to maintain our proposal from Draft Determinations. We will use a single true-up mechanism with a uniform TVOM for all types of prior year adjustments and true-ups, using nominal WACC as the rate.

10.159 In our Draft Determinations, we asked for views on applying a single time value of money to all prior year adjustments, based on nominal WACC. The RIIO-ED2 CG, ENWL, NGED, SSEN, NPg, and UKPN supported the proposal.

10.160 SPEN saw no reason to change the established framework, stating it is equitable and consistent with investor expectations. They also referenced the First Economics report[196] provided as part of consultations on RIIO-GD&T2.

[196] First Economics (12 August 2020), RIIO-2: Prior Year Adjustments

10.161 Despite generally supporting the proposal, NPg caveated that Ofgem will still need to finalise and publish the model to be used, and UKPN queried why the proposal used nominal instead of real WACC. The Challenge Group noted that as a generality the lowest acceptable rate should be used for adjustments, although WACC had sound arguments.

10.162 Acknowledging NPg's caveat, we note the mechanics have now been made clear in the PCFM, and the algebra will form part of the PCFH and licence special conditions.

10.163 In response to UKPN's query, it can be shown that nominal WACC in the mechanism we have laid out is mathematically equivalent to the RIIO-ED1 approach to "MOD" adjustments. In RIIO-ED1, the "real" adjustment is inflated by the price index in the following year. This new approach moves that inflation adjustment a step earlier, expressing it as part of the interest rate. The final value of the adjustment is the same.

10.164 Regarding the First Economics report referenced in SPEN's objection, we note the paper was initially provided as part of a RIIO-GD&T2 consultation proposal to use a short-term cost of debt-based rate. Most of the paper argues for the use of WACC in any adjustment that changes the size of the investor capital base. We have accepted the argument that WACC may be a more appropriate rate for our mechanism combining several types of true-up adjustment.

10.165 On the use of a base-rate-plus-a-margin as an interest rate for prior years adjustment, the First Economics report notes that framework goes back thirty years, and that there is no obvious reason for upsetting the status quo. In this case, neither SPEN nor the FE report considers the changes to the RIIO-ED2 Annual Iteration Process, forecasting proposals, or gaming risk. We think these are different circumstances that warrant standardising the true-up rates.

Forecasting during RIIO-2

Purpose	To include forecast information within the PCFM.
Benefits	This will enable revenues to be more cost-reflective and should reduce the magnitude of subsequent true ups.

Background

10.166 The purpose of the RIIO-ED1 PCFM was to calculate MOD, which reflects the difference between a revenue forecast of expenditure made at the beginning of the price control and revenue based on updated variable values. Actual expenditure is reflected in the following regulatory year, resulting in a two-year lag before adjustments flow through to Recalculated Base Revenue, as directed by Ofgem. In general, the RIIO-ED1 process is backward looking.

10.167 To reflect updates more quickly, reduce the magnitude of true-ups, and streamline reporting, our Draft Determination proposal was that RIIO-ED2 will incorporate forecasts in a similar manner to RIIO-GD&T2 Final Determinations.

10.168 We engaged with DNOs through PCFM and licence working groups since our SSMD to develop an RIIO-ED2 PCFM and corresponding licence drafting that are based on a continuous re-estimation of variable values.

10.169 We also engaged on the future of the RIIO-ED1 forecast penalty mechanism, which currently operates through the K correction factor. In RIIO-ED1, a penal rate of interest is applied if there are deviations between allowed and recovered revenue of greater than 6%.

10.170 The proposed changes to the annual iteration process, the calculation of allowed revenue, and variable value forecasting means that values will be changing both retroactively and on a forward-looking basis. At Draft Determinations, we stated this necessitates revisiting the way the forecasting penalty is determined to avoid penalties being applied when a forecast error was beyond the reasonable control of the licensee.

Final Determination summary

10.171 The table below provides a summary of our Final Determination position.

Policy	Final Determination	Draft Determination
Updating forecasts within the PCFM	DNOs must use the PCFM to determine allowed revenue using the most up-to-date view of all variable values. This includes updating historical outturn data and revising forecasts where necessary.	Same as FD
Forecasting penalty mechanism	A forecasting penalty mechanism split in two parts: 1) charging error (demand forecasting) and 2) base revenue forecasting. Both penalties would apply a 6% threshold and 1.15% penalty rate and may be entirely or partially waived by Ofgem direction.	Same as FD

Draft Determination responses

10.172 At Draft Determinations we asked three questions relating to forecasting policies:

FQ38. What are your views on our proposed approach to using forecasts within RIIO-ED2?

FQ39. What are your views on the proposed charging penalty mechanism?

FQ40. What are your views on the proposed revenue forecasting penalty mechanism?

Forecasting throughout RIIO-ED2

10.173 UKPN, SPEN, ENWL, NPg supported the use of variable value forecasting in better matching expenditure and revenue and reducing true-ups.

10.174 NPg stated that updating forecasts increases the likelihood that the notice period needs to be disapplied, especially in the context of a best endeavours obligation around charge setting.

10.175 NGED and UKPN noted challenges in revenue forecasting, particularly in the context of 15-month notice periods and called for guidance documents for estimating variable values.

10.176 Centrica stated that its' support for forecasting was contingent on the 15-month notice period for network charges remaining in place, as otherwise this increases the unpredictability of network charges.

10.177 SSEN stated that it did not support dynamic forecasting, and that a forecast based approach may not reduce the magnitude of true ups.

Charging error penalty mechanism

10.178 UKPN, NPg, Centrica and Citizens Advice supported the charging error penalty mechanism as designed.

10.179 NGED, SSEN and ENWL described increased challenges forecasting demand, such as electrification of transport and heat, and the Access SCR reforms

10.180 ENWL noted Ofgem's September 2021 decision[197] to disapply penalty interest rates for regulatory years 2023/24 and 2024/25.

10.181 SPEN stated that bad debt should be excluded from the penalty calculation.

Revenue forecasting error penalty mechanism

10.182 Centrica, the RIIO-ED2 CG, and NPg agreed with the revenue forecasting penalty mechanism as proposed.

10.183 UKPN agreed with removing the effect of inflation in our draft determinations while also noting the removal of two-year lags increases the difficulty of preparing accurate forecasts.

10.184 Citizens Advice argued the 6% threshold was too generous, citing our Draft Determinations evidence showing the average change of recalculated base revenue at a five-year time horizon of 3.17%.

[197] Decision on DNOs request for directions to temporarily disapply the current DuoS charges notification periods, Ofgem, 20 September 2021

10.185 NGED argued for a qualitative approach to ensure accurate forecasting, and similarly SSEN argued for a monitoring-only regime or an increase in the penalty threshold.

10.186 SPEN argued that non-controllable opex should be removed from the definition of base revenue and not considered in the revenue forecasting penalty mechanism.

Final Determination rationale

Forecasting throughout RIIO-ED2

10.187 We have decided to maintain our Draft Determination proposal that whenever a DNO uses the PCFM to determine allowed revenue, it should use the most up-to-date view of all variable values. This includes updating historical outturn data and revising forecasts where necessary. In practice, the PCFH or other guidance documents may require the DNO to use a consistent methodology or to submit additional documentation. The approach to different types of variable values is summarised in the table below, with the addition of a line, compared to Draft Determinations, regarding the RIIO-ED1 closeout adjustment.

PCFM Variable Value	**Proposed Forecasting approach**
Actual expenditure	Forecast updated by licensees. Forecasts are already submitted via the RFPR and would instead be input in the PCFM at each AIP.
Volume driver allowances	Forecast updated by licensees. Process would be largely mechanical with the licence formula and forecasts of volumes as provided in cost and volume reporting packs.
Incentive performance	Forecast updated by licensees. Forecasts are already submitted via the RFPR and would instead be input in the PCFM at each AIP.
Re-openers	Forecast updated by the licensees, with additional guidance on supplementary information required to support the forecast value. In general, this will be the actual or expected spend on a known project within a re-opener pipeline. Re-opener variables are eventually replaced by values from an Ofgem decision, or zero if there is no re-opener application.
Legacy adjustments and true ups	Forecast updated by licensees based on carry-over RIIO-1 mechanisms, and forecasts of revenue recovery.
RIIO-ED1 closeout adjustment	Like the mechanical legacy adjustments, closeout adjustments are forecast by the licensee and until determined by the processes set out in the RIIO-ED2 PCFH.

Other revenue components, such as directly allowed revenue terms, pass-through, use-or-lose-it allowances, inflation	Forecast updated by the licensees, with guidance provided by Ofgem on a case-by-case basis.

10.188 While some DNOs raised a concern about notice periods, variable value forecasting is independent of the 15-month notice period for DNOs to set tariffs. The notice period is relevant for the challenge of tariff setting, but still uses a PCFM containing the best view of all future years available at the time. For example, revising forecasts for the current year will improve the forecast of the correction term in future years.

10.189 Regarding guidance, the DNO is best placed to forecast their performance and allowed revenue. It would not be possible for Ofgem to provide exhaustive guidance in all circumstances, but we note the RIIO-ED2 framework contains a RIIO-ED2 Handbook which will contain guidance on how to forecast specific variables. Additionally, PCFM working groups operate throughout the price control, enabling continuous development of licence instruments and associated documents.

10.190 We disagree with NPg's assertion that forecasting increases the likelihood of needing to disapply notice periods. As explained further up in this chapter, the best endeavours obligation and the notice period are separate issues. We expect licensees to use best endeavours at the time of setting charges. To the extent a forecast changes, that will flow into future correction mechanisms.

Charging error penalty mechanism

10.191 We have decided to continue with our Draft Determination proposal to implement a penalty based on charging error, ie the difference between the allowed revenue set out in a charging statement and the amount of revenue collected. This would penalise poor charge-setting or demand forecasts. We propose the threshold for applying a penalty is 6% over- or under-recovery, and the penalty rate is 1.15% of the over- or under-recovery. We propose to retain the mechanism from RIIO-1 where Ofgem may waive some or all the penalty by direction if the error is caused by factors outside the reasonable control of the licensee.

10.192 Ofgem will also ensure that the licence drafting of the penalty mechanisms are consistent with the September 2021 decision flagged by ENWL.

10.193 On whether bad debt should be excluded, we note that bad debt values are typically insignificant, and in general DNOs should face limited exposure to bad debt. We are satisfied that exceptional bad debt events can be considered through the waiver process.

Revenue forecasting error penalty mechanism

10.194 We have decided to maintain our Draft Determination proposal, and implement a penalty based on base revenue[198] forecasting error, ie the difference between a company's ex ante estimate of their base revenue entitlement, and their outturn base revenue entitlement. This would penalise poor forecasts relating to a subset of revenue measured in constant prices. We propose that the threshold be set at 6%, and the penalty rate be the same as the charging error penalty rate (1.15%). Like charging error, we propose a to have a mechanism where we may waive some or all of the penalty by direction, if the error was caused by factors outside the reasonable control of the licensee.

10.195 Regarding whether this mechanism is required at all, we re-iterate our Draft Determination rationale that, in the context of licensees self-publishing allowed revenue and forecasting variable values, we believe a new mechanism which penalises especially poor forecasts is proportionate.

10.196 On whether the 6% threshold is too generous, we note the countervailing factors such as the increased use of uncertainty mechanisms raised by DNOs but agree and stand by our conclusion that 6% will likely be a threshold in excess of routine forecasting error. Nonetheless, given the suite of novel processes for RIIO-ED2, we are satisfied to set a somewhat conservative penalty threshold. We note that DNOs will still have a licence obligation to provide their best estimates, and we can review this threshold for the next price control period.

10.197 Regarding the inclusion of non-controllable opex, we agree it is not controllable, but are satisfied including it as the costs are foreseeable to a reasonable degree. SPEN raised business rates and transmission exit charges, which are relatively stable or small as a percentage of overall revenue. To the extent a change in non-controllable opex could not have been reasonably foreseen, the waiver process exists to consider these circumstances.

Lags on Incentives

Purpose	Removing lags on incentive performance.
Benefits	Ensuring consistency and simplicity of revenue calculation.

[198] Our proposed definition for base revenue in RIIO-ED2 includes fast pot expenditure, non-controllable opex, RAV depreciation, and return.

Background

10.198 In 2012, Ofgem decided to introduce lags to incentive performance.[199] RIIO-ED1 features inbuilt delays between performance on a particular incentive and when the revenue is earned. This policy increases the predictability of incentive revenue in a particular year.

10.199 This approach is different from the structure of the PCFM, which when calculating revenue allowances treats all revenue entitlements as in the same year the performance relates to.

10.200 In consolidating the revenue reporting into the PCFM as proposed in the AIP section, a PCFM with both revenue resulting from lagged and current performance potentially creates confusion and complexity in reporting overall price control performance.

10.201 The electricity distribution sector has a fifteen-month notice period on charges, which already provides a high degree of forward-looking certainty over charges.

Draft Determinations

10.202 We proposed to remove lags on incentives, so that performance and revenue are aligned to the same year. We argued this simplified the licence and PCFM, making it more transparent.

10.203 We also recognised the removal of lags, in conjunction with the forecasting proposals, reduces the potential predictability of allowed revenue. However, we believe appropriate charging notice period provides certainty over *network charges* (as opposed to the ex-post value of allowed revenue) which may be of more value to suppliers.

Final Determination summary

10.204 The table below provides a summary of our Final Determination position.

Policy	**Final Determination**	**Draft Determination**
Whether incentive revenue is based on performance in previous years or current years	Remove lags on incentives, so that performance and revenue are aligned to the same year.	Same as FDs.

Final Determination rationale and Draft Determinations responses

10.205 We have decided to remove lags on incentives, so that performance and revenue are aligned to the same year.

10.206 In our Draft Determinations, we asked for views on removing lags from incentives. In response, ENWL, NGED, NPg, SPEN, and SSEN agreed with

[199] Mitigating network charging volatility arising from the price control settlement, https://www.ofgem.gov.uk/sites/default/files/docs/2012/04/charging_volatility_cons.pdf

the proposal. UKPN saw benefits in removing lags, but had concerns regarding the transition from RIIO-ED1. They noted that 2023/24 and 2024/25 tariffs will already have to be set by the time final determinations is published. That implies that incentive performance for those years would all be carried into 2025/26 and it may be beneficial to spread the values over the remainder of RIIO-ED2.

10.207 Centrica did not object to removing lags, contingent on the 15-month notice period for network charges remaining in place.

10.208 Citizens Advice and the Challenge Group saw the benefits in licence and PCFM simplicity but was similarly concerned about the potential loss in predictability of charges.

10.209 In response to UKPN's concern regarding the first two years incentive values, we agree with their description of the mechanics and agree it may not be desirable to have a large swing in revenue in a particular year. At the same time, there are many moving parts to revenue and it depends on the updates made in the first AIP in 2023. For that reason, we think this is best revisited within the RIIO-ED2 period. In the case of undesirable volatility, Ofgem and the DNO can consider potentially mitigating actions, such as deferrals or smoothing.

10.210 Regarding predictability for suppliers and the concerns raised by Centrica and Citizens Advice, we continue to believe the best tool for the job is sufficient notice periods. At this time, the 15-month notice period remains in place, and we agree that any changes to this policy would require consideration of how network allowed revenue is set and the underlying volatility of the number given the licence framework. Baselines for ODI incentive rates, caps, or collars.

Creating consistency in baselines for ODI incentive rates, caps, or collars

Purpose	Provides a calibrating parameter for incentives that scales it appropriately to the size of the network, sufficient to motivate behaviour.
Benefits	These caps and collars protect consumers and companies, from excessive gain or loss from a financial incentive.

Background

10.211 We set caps on incentive rewards and penalties to protect consumers and companies from excessive gain or loss from a financial incentive. We seek to appropriately size incentives to the individual network, using some numerical benchmarks.

10.212 Base Revenue is a defined term within RIIO-ED1 and is the basis on which several caps and collars on output delivery incentive have been applied.

10.213 In RIIO-ED1, some licence conditions used the live definition of base revenue (which is updated through the AIP), while some were hard coded values. In some cases, the hard coded values were based on percentages of RoRE rather than base revenue. In other cases, it may have been based on RoRE originally then translated to a percentage of base revenue.

10.214 In our SSMD, we typically expressed potential incentive values in the same way as RIIO-ED1 (therefore mostly base revenue); however, we noted that the exact monetary values were not known, and some judgement was required in making assumptions for RIIO-ED2. Furthermore, in RIIO-GD&T2 Final Determinations, we modified the concept of base revenue from RIIO-ED1, to refer to just a subset of allowed revenue within the PCFM. This was to fit "more logically with an expanded PCFM"[200] (as it now included all revenue); it excluded second order effects such as the tax allowance.

10.215 In our SSMD, we had not specified a definition of base revenue to be used, but we incorporated the RIIO-GD&T2 definition of base revenue into the Business Plan process and PCFM.

10.216 In our Draft Determinations, we proposed to use RoRE as a method of calibrating incentive strengths and set out a method for translating incentives into a RoRE terms, with a forecast of regulatory equity fixed ex-ante. This included a revised definition of base revenue.

Final Determination summary

10.217 The table below provides a summary of our Final Determination position.

Policy	Final Determination	Draft Determination
Benchmark for the size of ODIs	Incentives generally stated as a percentage RoRE, rather than percentage of base revenue	Same as FD
Calibration of the incentive values in RoRE terms	Backsolving to previously stated base revenue values based on sector average, and defining base revenue as the sum of fast pot expenditure, non-controllable opex, RAV depreciation, and return	Same as FD

[200] RIIO-2 Draft Determinations Finance Annex, Paragraph 11.99, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf

Policy	Final Determination	Draft Determination
Ex-ante certainty over incentive values in £m	Fixed based on Final Determinations values of regulatory equity based on the average of NPV-neutral RAV over RIIO-ED2.	Same as FD

Responses to Draft Determinations

Responses to FQ42. What is your view on using RoRE as a general baseline for describing ODI caps, rather than base revenue?

10.218 ENWL, NGED, NPg, SPEN, UKPN, Centrica and Citizens Advice agreed with the proposal.

10.219 UKPN agreed with ODI caps being set relative to RoRE if the equivalent overall financial value is maintained. However, UKPN felt that Ofgem's approach does not recognise the value that ought to be placed on key areas, such as reliability and customer service.

10.220 SSEN agreed in principle with Ofgem's proposal on using RoRE as a general baseline for describing ODI caps but raised a concern with the overall balance of rewards and penalties, claiming that it is skewed downwards.

Responses to FQ43. What is your view on fixing the potential £m 20/21 value of incentives using one number for all years, based on a forecast of RIIO-ED2 at Final Determinations (an approach similar to RIIO-ED1)?

10.221 Centrica, NPg and UKPN agreed with the proposal.

10.222 NGED agreed but argued the movement of material amounts of expenditure into Uncertainty Mechanisms would mean ex ante regulatory equity is likely to be understated compared to outturn regulatory equity.

10.223 SPEN did not agree on fixing £m 2020/21 values based on forecasts of RIIO-ED2 at Final Determinations, as this undermined the approach proposed in FQ42 where ODIs will correspond to a percentage of RoRE. If this is to broadly align, they say that the RAV must include a reasonable uptake in uncertainty mechanisms or £m rewards will be diluted using a smaller base case RAV.

10.224 SSEN disagreed on the approach saying it was unsuitable during a period of significant investment/growth as the incentives would not increase proportionately. Additionally, this approach does not consider any under/overspend or UM expenditure. Incentives should be based on actual RoRE and not a fixed value.

10.225 ENWL disagreed on a fixed £m figure based on 2020/21 RoRE. To have the desired incentive properties, it is necessary to scale the potential incentive values in time with RAV.

Responses to FQ44. What is your view on the method of calibrating incentive caps in RoRE terms, or the overall proposed incentive caps?

10.226 Centrica, NPg, ENWL, SPEN, and NGED agreed with the proposal.

10.227 UKPN agreed the method was sensible, but both UKPN and SSE proposed Ofgem use the industry median of 0.41% rather than the average 0.39% when comparing RoRE to base revenue.

Final Determination rationale

10.228 We have decided to maintain the incentive values in RoRE terms as proposed in draft determinations, except where the policy has changed. As our Draft Determinations rounded the values, recalibrating had a limited effect overall and we are satisfied with the size of the incentive package as presented. For reference, the incentive caps are given in Table 20.

Table 20: List of ODI caps as a percentage of ex-ante regulatory equity

Incentive	**Upside**	**Downside**
Common ODIs		
Customer Satisfaction Survey	0.40%	-0.40%
Complaints	0.00%	-0.20%
Time to Connect	0.15%	-0.15%
Major Connections	0.00%	-0.35%
Vulnerability Incentive	0.20%	-0.20%
DSO	0.40%	-0.20%
IIS	1.50%	-2.50%
Bespoke ODIs		
Collaborative Streetworks (LPN, EPN, SPN only)	0.20%	0.00%
Dig, Fix, Go. Bespoke (ENWL only)	0.20%	-0.20%

10.229 In maintaining these values, we decided to maintain the proposals made in our Draft Determinations in terms of how the RoRE values were derived[201], specifically:

- We have decided to translate any incentive referencing base revenue to reference ex ante equity RAV, that is to make the value based on a percentage RoRE, rather than a percentage of base revenue. The

[201] We have made one correction where Draft Determinations cited notional gearing, it meant to read one minus notional gearing.

conversion will be done so as to respect the overall intended incentive strength, by back-solving to the same £m of the incentive on a sector average basis.

- In this conversion, we have decided to use the RIIO-GD&T2 definition of base revenue, with the exception that we propose to exclude equity issuance. Therefore, base revenue is the following subset of calculated revenue:
  - Fast pot expenditure
  - Non-controllable opex
  - RAV depreciation
  - Return
- We decided to fix a set of RAV values in our Final Determinations, defining a licence term of Ex Ante Regulatory Equity (EARE), which will be set in the licence as fixed values. Any relevant incentives, caps, or collars will be based on these fixed values. The values will be calculated by averaging the forecast NPV-neutral RAV across all years in RIIO-ED2 and multiplying it by 1 minus notional gearing.

10.230 We note that the overall values or potential skew of the incentive package is not relevant to these proposals and is discussed in Chapter 3 of this Finance Annex, under "Return On Regulatory Equity (RoRE)". With that addressed, the switch to percentage RoRE from a percentage base revenue is supported by all who responded.

10.231 We have considered the arguments by SPEN, SSEN and ENWL, and believe that the benefit of simplicity and certainty from fixing the values outweighs the advantages of using an ex-post RoRE for incentives. This avoids creating additional complexity in the model and provides investors certainty over the £m potential return, while scaling to a reasonable estimate of RoRE ex ante.

10.232 We have also considered whether to use the median rather than mean in our calculation of RoRE values and decided the maintain the current approach because with the degree of rounding applied it made limited difference.

10.233 A table of incentive caps for each network is given in Appendix 7 with a comparison from RIIO-ED1, RIIO-ED2 Draft Determinations, and Final Determinations

Bad Debts

Purpose	To enable DNOs to recover amounts associated with supplier-related bad debts via the correction factor (Kt) by adjusting recovered revenue for Bad Debt.

Benefits	To introduce a consistent and transparent approach for all sectors to recover amounts associated with Bad Debts.

Background

10.234 During the course of a price control, there may be times when companies are unable to recover debts owed to them by their customers if they become bankrupt. In these cases, it is our policy intent to allow companies to recover efficiently incurred costs associated with those Bad Debts through their revenue allowances.

10.235 We proposed in our RIIO-ED2 Draft Determinations to not include the EBDt and CBDt in the RIIO-ED2 pass-through condition, and instead adjust the Recovered Revenue[202] for any unrecovered Bad Debts through the annual reporting process. This treatment is in line with the statutory licence modification we recently published for RIIO-GD&T2[203].

Final determination summary

10.236 The table below provides a summary of our Final Determination position.

Parameter	Final Determination	Draft Determination
Bad Debt recovery	Not to include the EBDt and CBDt in the RIIO-ED2 pass-through licence condition and instead adjust the Recovered Revenue for any unrecovered Bad Debts through the annual reporting process. The non-recovered Bad Debt amount will then be reflected in the PCFM as an under-recovery, which will be adjusted through the K correction factor. This ensures Recovered Revenue will be recorded on a cash basis ie. net of any Bad Debt.	Same as FD.

Final Determination rationale and Draft Determination responses

10.237 We have decided to implement our proposed treatment of Bad Debt. As we set out in our Draft Determinations, the rationale for these changes is to ensure that we record Recovered Revenue on a cash basis. If we kept EBDt and CBDt, this would result in needing to record the licensee's Recovered Revenue as billed. Recovered revenue as billed means that

[202] Where Recovered Revenue (RRt) means the revenue derived by the licensee from Network Charges made for the provision of Distribution Services to Customers in respect of a Regulatory Year

[203] Direction to modify the GT2 and GD2 Price Control Financial Instruments and Licence conditions | Ofgem - https://www.ofgem.gov.uk/publications/direction-modify-gt2-and-gd2-price-control-financial-instruments-and-licence-conditions

the value of Recovered Revenue reflects the total amount a licensee bills its customers but not necessarily the true amount that it collects, for instance due to unrecoverable Bad Debt.

10.238 We believe Recovered Revenue as billed is unclear and could be misleading as the Recovered Revenue value does not reflect the revenue actually recovered by a licensee.

10.239 Therefore, removing the EBDt and CBDt from the pass-through condition means that licensees will be required to record Recovered Revenue on a cash basis ie net of any Bad Debt. The non-recovered Bad Debt amount will then be reflected as an under-recovery, which will be adjusted through the K correction factor. We will include inputs for Recovered Revenue on a billed basis, Bad Debt and Recovered Revenue in our Regulatory reporting templates to ensure that we continue to have sight of the Bad Debt values and to set out more clearly, the interplay between Recovered Revenue and Bad Debt.

10.240 Regarding RIIO-ED1 bad debt, we have accepted submissions from DNOs on the legacy pass-through variable values, the legacy eligible bad debt term (LEBDt) and the legacy COVID-19 bad debt term (LCBDt) this autumn and have reflected those in our RIIO-ED2 Final Determinations PCFM.

10.241 We received eight responses to our consultation on treatment of Bad Debt. All eight respondents generally supported our approach.

10.242 Four respondents (NGED, ENWL, SPEN, NPg) raised queries regarding the interaction between our Bad Debt proposals and the forecasting penalty (FPt). The respondents queried that if there were a large amount of Bad Debt in a given year, this would be recorded as an under-recovery which could potentially lead to the application of the forecasting penalty. However, this is not something that Ofgem expects will happen with enough regularity to specify on the face of the licence that it should be excluded from the Forecasting Penalty condition. We note, per our proposed drafting for SpC 2.1 Part G "Forecasting penalty (FPt)" that the Authority will have the ability to waive the penal rate of interest for events that are outside of the DNOs' control.

10.243 NGED was concerned that with Bad Debt now being recovered via the K correction factor, the time value of money element would also need to be captured. However, we note that the K correction factor already takes into account the time value of money (TVMt) as can be seen in our proposed drafting for SpC 2.1 "Part F: Correction term (Kt)" of the RIIO-ED2 licences.

10.244 NPg responded stating they were concerned that the definition of the BDAt term excludes any Valid Bad Debt Claims under SLC 38C which could result in Bad Debt not being recoverable.

10.245 The respondent stated "we are concerned that the definition of the BDA term excludes any Valid Bad Debt Claims under SLC38C. Once an IDNO

has submitted a Valid Bad Debt Claim, the DNO pays that IDNO the respective amount, thus transferring the debt to the DNO. This means that if a supplier ceases to trade, any amounts attributable to the Valid Bad Debt Claim in Network Charges manifest as Bad Debt for the DNO. It is, therefore, unclear how the DNO would be able to recover the unrecovered element of a Valid Bad Debt Claim, if a supplier ceases to trade."

10.246 Ofgem's decision is that Valid Bad Debt Claims are allowable through the IBDAt pass-through term in SpC 6.1 ('Pass-through Expenditure') and any other type of bad debts are allowable through the BDAt in SpC 2.1 ('Revenue Restriction'). If an IDNO transfers Bad Debt to a DNO, it would be able to recover that through the BDA term as the definition for BDA excludes only the element of Valid Bad Debt Claims as defined in SLC 38C ('Treatment of Valid Bad Debt Claim').

10.247 NPg proposed that the definition of Recovered Revenue (RRt) should be algebraic to add further clarity that Recovered Revenue is a billed amount less Bad Debt.

10.248 Ofgem's decision is that defining RRt algebraically is an unnecessary clarification. Our proposed licence drafting, which will be consulted on as part of the statutory consultation on the RIIO-ED2 licences, is in line with the drafting for the GD sector.

Supplier of Last Resort Recovery

Purpose	To align payments to SoLRs with changes to Allowed Revenue.
Benefits	Consistency with the gas sector. Reduced complexity.

Background

10.249 In RIIO-ED1 Last Resort Supply Payments (LRSP) paid by networks to a SoLR are a pass-through cost. For LRSP claims below the materiality threshold, the monthly payments commence 3 months after the claims are received but are recovered in Allowed Revenue two years later. Claims above the materiality threshold are paid and recovered in the following financial year, subject to Ofgem granting permission to DNOs to revise tariffs.

10.250 Our proposal in Draft Determinations was to replace the existing Standard Condition 38B of the distribution licence with a condition that mirrors the RIIO-GD2 approach to ensure consistency across sectors and better align LRSP payments with recovery via Allowed Revenue. Approved Last Resort Supply Payment (LRSP) claims received by 31 December would be paid monthly in the following financial year. No

materiality threshold would be applied. LRSP claims would be a pass-through item in a similar way to business rate costs.

10.251 DNOs would be able to include a forecast of LRSP claims in their PCFM submissions. Any forecasting error would be picked up in the ADJ term, as discussed in the TVOM section. As in RIIO-ED1, DNOs would be able to seek permission to revise already published charges. Ofgem would consider the materiality of the forecasting error before deciding whether to approve any revision to charges

10.252 The RIIO-ED2 pass through term would pick up any RIIO-ED1 SoLR claims, below the RIIO-ED1 materiality threshold, which would be paid and recovered in 2023/24.

Final Determination summary

10.253 The table below provides a summary of our Final Determination position.

Policy	Final Determination	Draft Determination
Treatment of SOLR claims	Replace Standard Condition 38B with a simpler obligation on DNOs to pay claims, with allowances coming through an RIIO-ED2 pass-through term	Same as FD

Final Determination rationale

10.254 We did not ask a consultation question on this part of Draft Determinations, however we note there are ongoing discussions as part of licence drafting working groups.

10.255 We have decided to take the approach set out in Draft Determinations, as it changes little about the existing SOLR process but makes the licence and mechanics clearer.

10.256 Licence drafting consultations have raised concerns about whether the RIIO-ED1 materiality threshold should be retained. We will address those concerns in our Statutory Licence Consultation.

Revenue profiling over RIIO-ED2

Purpose	To re-allocate revenue between years in an NPV-neutral way.
Benefits	The potential benefits are open to consultation.

Background

10.257 In RIIO-ED1, a mechanism existed that would take the modelled revenue outputs from the PCFM, and re-allocate some of the revenue into different years in an NPV-neutral manner

10.258 For RIIO-ED2, UKPN put forward a Business Plan financial model that proposed an alternate revenue profile, delaying revenue towards the end of the price control. No other DNO sought to profile its revenue.

10.259 We did not include any profiling adjustments in the PCFM published with DDs. However, we welcomed stakeholder feedback about whether and if so, to what extent Ofgem should allow revenue profiling in RIIO-ED2.

Finale Determination rationale and Draft Determination responses

10.260 We have decided to implement a revenue profile for UKPN.

10.261 At Draft Determinations we asked whether we should re-allocate or re-profile revenue throughout the RIIO-ED2 price control period and if so, what profiles would be in consumers' interests?

10.262 SPEN, ENWL, NGED, UKPN, NPg, Centrica, and Citizens Advice all supported considering re-profiling revenue as an option.

10.263 ENWL agreed that the option to re-profile revenue should exist but should only be used in limited circumstances such as to alleviate financeability stress of a licensee in a particular year. SPEN suggested it be used to smooth the impact of changing depreciation policies.

10.264 NGED and Centrica were both of the view that re-profiling should smooth bills over price control period and increase notice periods for any impact on bills.

10.265 SSEN stated that it was not proposing to re-profile its revenue.

10.266 In its business plan, UKPN proposed reduced revenues in the early years of RIIO-ED2 and increased them towards the end. They stated this lowered its customers' bills at the start of the RIIO-ED2 period, which was in customers' interests given the cost-of-living crisis.

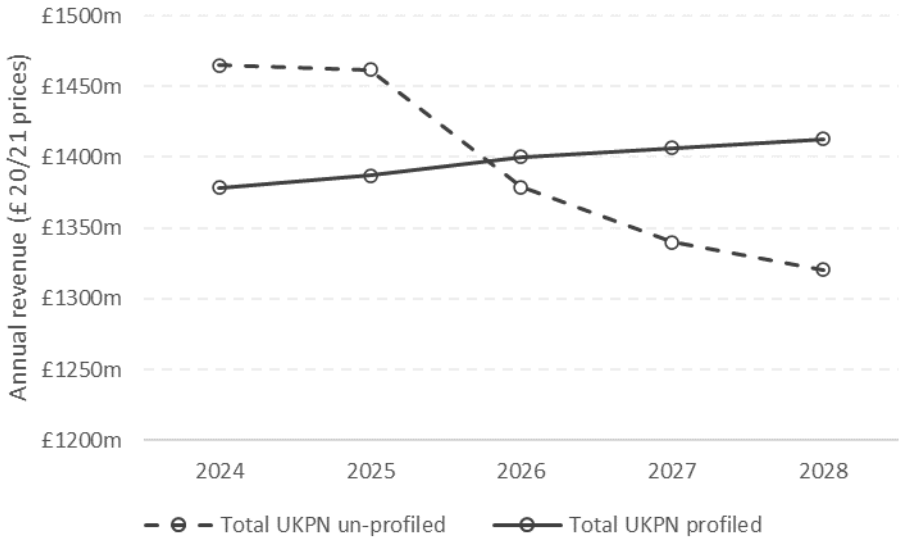
10.267 Re-profiling was generally supported by stakeholders, and we agree with Citizens Advice that it should be considered on a case-by-case basis. We also acknowledge Centrica's comment on the desirability of smoothing charges.

10.268 The only request for re-profiling currently was from UKPN. We worked with UKPN to confirm the profile they were proposing and how it may be adjusted for FDs. We have implemented the following profile shown in the table below.

Network	2023/24	2024/25	2025/26	2026/27	2027/28
LPN	19.9%	20.1%	19.9%	20.0%	20.2%
SPN	20.1%	19.9%	19.9%	20.0%	20.0%
EPN	19.4%	19.6%	20.2%	20.3%	20.5%

10.269 The effect of this profiling is shown in Figure 7 below.

Figure 7: Effect of profiling - calculated revenue for UKPN networks before and after



10.270 Given UKPN's proposal has the overall effect of delaying revenue and smoothing bills, we have decided to accept its proposed revenue profile. This has been incorporated into the PCFM.

10.271 We did not receive any other proposals to profile revenue and have not adjusted any other DNO.

Appendices

Appendix 1 - Final Determinations on the allowed return of capital

Table 21: Frequent debt issuers, financial years ending March 31

Component	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Equity allowance						
Annual cost of equity	5.28%	5.20%	5.22%	5.22%	5.22%	5.23%
Allowed return on equity	5.28%	5.20%	5.22%	5.22%	5.22%	5.23%
Cost of debt allowance						
17-year trailing average + 55bps calibration adjustment + 25bps additional cost of borrowing	3.04%	3.07%	3.05%	2.99%	2.92%	3.01%
Notional gearing	60%	60%	60%	60%	60%	60%
Allowed return on capital	3.94%	3.92%	3.92%	3.88%	3.84%	3.90%
WACC	**3.94%**	**3.92%**	**3.92%**	**3.88%**	**3.84%**	**3.90%**

Table 22: Infrequent debt issuers, financial years ending March 31

Component	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Equity allowance						
Annual cost of equity	5.28%	5.20%	5.22%	5.22%	5.22%	5.23%
Allowed return on equity	5.28%	5.20%	5.22%	5.22%	5.22%	5.23%
Cost of debt allowance						
17-year trailing average + 55bps calibration adjustment + 25bps additional cost of borrowing + 6bps infrequent issuer premium	3.10%	3.13%	3.11%	3.04%	2.98%	3.07%
Notional gearing	60%	60%	60%	60%	60%	60%
Allowed return on capital	3.97%	3.96%	3.95%	3.91%	3.87%	3.93%
WACC	**3.97%**	**3.96%**	**3.95%**	**3.91%**	**3.87%**	**3.93%**

Appendix 2 - Equity: A summary of consultant's reports and our comments

Consultancy report E1: Oxera, Traded yield spreads

Author	Prepared for	Report	Length	Date
Oxera	SSEN	Traded yield spreads of water and energy networks[204]	~12 pages	Aug-22

Point raised	Ofgem consideration and response
Oxera said "NGET has higher spreads than those of Severn Trent and United Utilities, despite having broadly similar gearing. This implies that NGET has higher credit risk (when controlling for differences in gearing) and is likely to have higher asset risk than the water networks"	Oxera's suggestion is consistent with beta estimates: National Grid values have often been higher than Severn Trent and United Utilities. The RIIO-ED2 beta assumption reflects this observation.
Oxera suggest that yield spreads for Severn Trent and United Utilities are broadly aligned with those of their peers.	Oxera's Figure 3.1 supports a view that Severn Trent and United Utilities hold higher risk than REN, Snamu, Enagas, and Red Electrica, and similar risk to: Elia and Terna. The RIIO-ED2 beta assumption reflects this observation.

Consultancy report E2: Imrecon, understanding risk

Author	Prepared for	Report	Length	Date
Imrecon	SSEN	Reframing our understanding of risk in regulated energy networks[205]	~31 pages	Aug-22

[204] Traded yield spreads of water and energy networks (ssenfuture.co.uk)
[205] Reframing our understanding of risk (ssenfuture.co.uk)

Point raised	Ofgem consideration and response
Imrecon said that "…the new energy appeals regime provides a substantially weaker form of protection for investors than the water equivalent. We measure the impact as a factor of 1.7x difference in the exposure to regulatory judgement… We would not translate this 1.7x factor directly into a beta difference, but it would be difficult to discount much of the effect. We conclude that an estimate of the effect of 1.1x[206], for example, would be unreasonably low."	Table 2 from the Imrecon report shows that the CMA adjustment to PR19 is twice as large as its adjustment to GD&T2. It is possible that the CMA could adjust downwards in future water appeals as the CMA is required to undertake a full redetermination, whereas this may be less likely in energy sector appeals, where the CMA's role is to consider any appeals by reference to specific appeal grounds. In energy, stakeholders believe the pool of potential appellants is wider than in the water sector. In energy, Citizens Advice and holders of any type of licence under s.6(1) of the Electricity Act 1989 whose interests are materially affected by the decision can appeal. By contrast, in water, only regulated companies can ask for a redetermination.[207] We do not consider it to be the case that a full redetermination necessarily lowers risk. A full redetermination involves a longer period of uncertainty and a greater degree of uncertainty as every part of the settlement can change. Imrecon's 1.7x is heavily reliant on the change between consecutive price controls being comparable for each regulator. We agree that 1.7x should not be translated into a beta difference.
Imrecon notes that: "The new legal framework for appeals was introduced by The Electricity and Gas (Internal Markets) Regulations 2011" "For the first cycle of appeals (two RIIO appeals in 2015), the CMA explained [that it] "should not substitute its views for GEMA's solely on the basis that it would have taken a different approach"	Investors should now be familiar with the legal framework because ~11 years (from 2011 to 2022) or 7 years (from the first RIIO appeals in 2015 to 2022) should be sufficient time for investors to understand the different appeal and redetermination frameworks in energy and water, and the contribution to regulatory risk. Beta estimates for National Grid should reflect investor perception of systematic risk, including the appeals framework.
Imrecon concludes "An estimate of the differential in equity betas between water	Note that the unlevered beta for energy networks is assumed to be 0.311 whereas the unlevered beta for water networks is assumed

[206] On an equivalent gearing basis, and leaving aside other risk differences.
[207] Regulatory appeals, the Penrose review, and the case for change - Fingleton

Point raised	Ofgem consideration and response
and energy that would arise from the differences between the respective appeals regimes of 1.1x, for example, would be unreasonably low."	to be 0.29: a difference of almost 10%. However, unlike Imrecon's 1.1x multiple, unlevered betas measure systematic risk in full – including any risks that are lower in energy than in water (e.g. unlevered betas should reflect the fact that Moody's consider the Ofwat regime is higher risk than the Ofgem regime).

Consultancy report E3: Oxera, risks of GB energy networks

Author	Prepared for	Report	Length	Date
Oxera	SSEN	Assessing the risks of GB energy networks[208]	~64 pages	Aug-22

Point raised	Ofgem consideration and response
Oxera said that it finds six networks that could be considered as having comparable systematic risks with GB energy networks, as follows: **Comparator** / **Network Type** / **Country** Enagas / GT / Spain Red Electrica / ET / Spain Snam / GT / Italy Terna / ET / Italy Italgas / GD / Italy National Grid / ET & ED / UK	We note that Oxera's comparator sample differs from other comparator samples proposed by Oxera (2021)[209], Frontier (2020)[210], Frontier (2021)[211], CEPA[212] and NERA[213]. The use of different samples suggests subjective judgements are needed to make any inference. Oxera's work would be more persuasive if it considered the relative merits of the samples that have been proposed. We agree with Oxera that National Grid is a good comparator.

[208] Assessing the risks of GB energy networks (ssenfuture.co.uk)
[209] The cost of equity for RIIO-ED2 (northernpowergrid.com)
[210] BETA FOR RIIO T2/GD2 (nationalgrid.com)
[211] Cost of Equity Assessment for RIIO ED2, Frontier Economics, 16 November 2021 41760 (westernpower.co.uk)
[212] Ibid and https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_technical_annexes_part_two_2.zip
[213] Annex 5D.2 NERA Cost of Capital for SPEN at RIIO-ED2.pdf (spenergynetworks.co.uk)

Point raised	Ofgem consideration and response
Oxera's analysis (see Figure A1.1) shows that National Grid has a higher asset beta than 6 other comparators and lower beta than 3 other comparators.	Oxera's analysis shows that National Grid's beta is not an outlier, compared to the European comparators shown. Oxera's Figure 3.3 also shows a mixed picture.
Oxera concludes that "Although we found the systematic risks of the companies in our final comparator set sufficiently comparable, the range of their market asset betas is still relatively wide"	We agree with Oxera that the range of values is wide, even after lots of filtering and subjective judgements.

Consultancy report E4: Frontier, cross-checks

Author	Prepared for	Report	Length	Date
Frontier	ENA	RIIO-ED2 Cost of Equity Cross-checks[214]	26 pages	Aug-22

Point raised	Ofgem consideration and response
Frontier state that "Ofgem assumes that only a MAR close to 1 can confirm that a price control has been appropriately calibrated…"	Ofgem's view is that a MAR materially above 1 is inconsistent with the view that required returns exceed expected returns.
Frontier suggest that the Dividend Growth Model (DGM) should be regarded as a superior measure to MAR.	We refer Frontier to RIIO-ED2 DDs Appendix 6[215]: we use a DGM to infer a cost of equity from observed MAR values. We welcome Frontier's endorsement of a DGM approach. We agree it can provide richer insights than MAR values alone.
Frontier propose a DGM cross-check which "suggests an implied [CPIH-real] cost of equity of between 4.6%-6.8%, with a mid-point of 5.7%"	We agree with Frontier that this DGM cross-check is sensitive to dividend assumptions.
Frontier suggest "Ofgem should introduce a cross-check on longer term profitability… it can be used as a cross-	Profitability measures are problematic because they: are backward looking; can be misleading if measured relative to

[214] Use of Uncertainty Mechanisms as part of RIIO-ED2 Draft Determinations, WPD Response Annex 11, RIIO-ED2 Draft Determinations | Ofgem
[215] RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)

Point raised	Ofgem consideration and response
check of whether equity returns are out of line with profitability in the wider market. All evidence suggests they are not.”	revenues rather than relative to assets; may not reflect risk; may result in unhelpful circularity; and are reliant on consistent accounting. Profitability assessments by the Energy & Climate intelligence Unit[216] and by Common Wealth[217] suggest returns are too high.

Consultancy report E5: NGED (formerly WPD) Uncertainty Mechanisms

Author	Prepared for	Report	Length	Date
NGED (WPD)	NGED (WPD)	Use of Uncertainty Mechanisms (UMs) as part of RIIO-ED2 Draft Determinations[218]	26 pages	Aug-22

Point raised	Ofgem consideration and response
NGED argue that UMs can introduce greater risk.	UMs help manage uncertainty. Therefore, UMs are often considered as risk-reducing, leading to a lower cost of capital, as noted in Ofgem’s RIIO Handbook (2010).[219] Oxera also appear to agree that UMs reduce risk for network investors.[220] Citizens Advice also said that UMs lower

[216] Energy & Climate Intelligence Unit | Electricity network firms’… (eciu.net)
[217] Profiting Amid the Energy Crisis: The Distribution Networks at the Heart of the UK's Gas and Electricity System (common-wealth.co.uk)
[218] Use of Uncertainty Mechanisms as part of RIIO-ED2 Draft Determinations, WPD Response Annex 11, RIIO-ED2 Draft Determinations | Ofgem
[219] Handbook for implementing the RIIO model (ofgem.gov.uk)
[220] See Consultancy report E10: Oxera, balance of risks

Point raised	Ofgem consideration and response
	risk.[221] CMA also considered that UMs mitigate uncertainty.[222]
NGED suggest there is a significant potential financial impact, because "The Materiality Threshold for the application of Uncertainty Mechanisms has been proposed as 1% of average annual base revenues (as defined in the Final Determinations) for RIIO-ED2 as opposed to 0.5% in RIIO-T2/GD2"	We have in these final determinations aligned the materiality threshold across the sectors at 0.5%. See chapter 6 of the overview document for more detail.
NGED suggest there are two sources of asymmetry: • Materiality threshold introduces downside exposure without any equivalent or symmetric upside. • NGED suggest that under several UMs companies can, at best, recover costs. There is a downside potential (e.g. disallowance) without any upside potential.	These asymmetry claims from NGED may be offset by other asymmetries. For example, Ofgem does not typically revisit ex-ante allowances to make reductions. By contrast, many UMs can be triggered by DNOs to increase allowances (as shown in NGED's Annex A).
NGED state that there is a "risk of cashflow problems and financeability issues, stemming from excessive capitalisation". NGED said that "it would be sensible to align capitalisation rates for expenditure under UM with the rates applied to ex-ante expenditure"	We agree there may be a risk of excessive capitalisation and have therefore decided on new rates in these FDs based on updated information. We have sought updated info from DNOs and have updated capitalisation rates in these FDs.

Consultancy report E6: Oxera MARs cross-check

Author	Prepared for	Report	Length	Date

[221] Pg 183 CMA Final determination, Volume 2A: Joined Grounds: Cost of equity, 28 October 2021. https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf#page=183

[222] Pg 278 CMA Final determination, Volume 2A: Joined Grounds: Cost of equity, 28 October 2021. https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf#page=278

Oxera	ENA	Market-to-asset ratios (MAR) as a cost of equity cross-check[223]	30 pages	Aug-22

Point raised	**Ofgem consideration and response**
Oxera consider that insufficient attention has been paid to the topic of the terminal value or exit multiple.	We agree that the terminal value is relevant to company valuation and MARs. However, valuations are typically dominated by fundamentals and near-term expectations rather than terminal values.
Oxera suggest that a terminal value above 1x explains a significant proportion of the premium paid above RAB at investment.	We could agree, in theory, that a terminal value materially above 1x could help explain the premium paid. However, in practice, we see no reliable evidence to support this theory.
Oxera consider that MAR values do not reflect the difference between the allowed risk-free rate and ILGs.	We agree that there should be some relationship between allowed returns and MAR values. However, the difference between the allowed risk-free rate and ILGs should only have a small impact on MARs because the risk-free-rate assumption is not typically considered the major driver of MARs.
Oxera consider that MAR values do not reflect latest network performance as measured by RoRE.	We agree that there should be some relationship between earned returns (as measured by RoRE) and MAR values. However, latest RoRE values should only have a small impact on MARs because MARs should instead RoRE expectations in the future.
Oxera hypothesise that, instead of reacting instantly to regulatory determinations, investors anchor their willingness to (over-)pay on previous transaction prices. Oxera suggest that if investors always expect to pay more than the RAB, this 'sticky expectation' decouples	We agree that investors could assume that future premia will align with historical premia. However, this assumption may not be reliable if the future does not reflect the past. Investors should also take note of the 'buyer beware letter'[224] dated Sep 2016 and signed by Ofgem's then CEO, Mr Dermot Nolan, which states: "… any assumptions that bidders make about future regulatory behaviour are at their own risk. Bidders should be clear that we will not provide compensation for any premium paid over the RAVs."

[223] Market-to-asset ratios as a cost of equity cross-check, Oxera, prepared for ENA 22 August 2022. Attached as Annex 12 to WPD response.
[224] Open letter: Sale of Gas Distribution Networks, Ofgem, 28 September 2016. open_letter_-_sale_of_gas_distribution_networks.pdf (ofgem.gov.uk)

Point raised	**Ofgem consideration and response**
MAR from regulatory allowances.	

Consultancy report E7: Oxera, ONS back-cast

Author	Prepared for	Report	Length	Date
Oxera	ENA	Assessing the new ONS CPIH back-cast[225]	6 pages	Aug-22

Point raised	Ofgem consideration and response
Oxera refer to (CPI and CPIH) inflation estimates, published by ONS in May 2022, for the period 1950 to 1988. Oxera said that over the period 1900 to 2021 average inflation is reduced by 0.24% which translates into an increase in CPIH-real equity returns of 0.24%.	We agree with Oxera that the ONS has published a new estimate of CPIH ex-post, for the period 1950 to 1988. We agree that if we used CPIH instead of CPI for the period 1950 to 1988, the inflation estimate over the period 1900 to 2021 is approximately 0.2% lower.
Oxera refer to Ofgem's CPIH range of 6.25% to 6.75% and highlight that this was primarily influenced by the 2018 UKRN report[226] which gave a range of 6% to 7%.	The UKRN report was relevant evidence for our TMR assumption. However, ex-post analysis on equity returns, as used in the UKRN report at page 125, is not the sole determinant of our view on TMR (see, for example, our rationale for GD&T2 FDs[227] our analysis in the GD&T2 SSMD[228] and our analysis in the GD&T2 SSMC[229]).
Oxera suggest the CPIH-real TMR should be corrected upwards by c. 0.25% given the new ONS data suggests CPIH inflation was 0.24% lower than the old estimates of CPI inflation over the period 1900-2021.	We agree that, of the available options, CPIH may be the lowest measure of inflation, which therefore suggests the highest value for realised returns. However, we are not persuaded to put exclusive weight on this one ex-post estimate as the sole basis for TMR going forward, given our other analysis (see, for example, our rationale for GD&T2 FDs[230] our analysis in the GD&T2 SSMD[231] and our analysis in the GD&T2 SSMC[232]).

[225] Assessing the new ONS CPIH back-cast: Note prepared for the Energy Networks Association, Oxera 15 August 2022
[226] UKRN Report, March 2018, page 125
[227] RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)
[228] RIIO-2 Sector Specific Methodology Decision – Finance (ofgem.gov.uk)
[229] RIIO-2 Sector Specific Methodology Annex: Finance (ofgem.gov.uk)
[230] RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)
[231] RIIO-2 Sector Specific Methodology Decision – Finance (ofgem.gov.uk)
[232] RIIO-2 Sector Specific Methodology Annex: Finance (ofgem.gov.uk)

Consultancy report E8: Oxera, cost of equity

Author	Prepared for	Report	Length	Date
Oxera	ENA	Cost of equity in RIIO-ED2 Draft Determinations[233]	32 pages	Aug-22

Point raised	Ofgem consideration and response
On the Risk-Free Rate (RFR), Oxera suggest: "Ofgem has erred by placing weight on the spot yields on government bonds as the sole baseline proxy for the RFR". Oxera said ARERA (the Italian regulatory authority) and BNetzA (the German regulatory authority) recognised a convenience premium by setting a higher allowance.	Oxera's work does not address the points we made in Draft Determinations.[234] For example, Oxera's argument largely ignores the CMA's view, from the October 2021 Final Determinations in the RIIO-GD&T2 appeals, that Ofgem's approach to rely on ILGs was not wrong.[235] Most precedents (academic and regulatory) use ILGs to proxy RFR.
On the RPI-CPIH wedge, Oxera suggest "…if Ofgem follows either of its suggested methods, it will underestimate the RPI–CPIH wedge". Oxera suggest that: Q1. the Office for Budget Responsibility (March 2022) provide a long-term wedge forecast of 100bps Q2. its estimate of the RPI-CPIH wedge is around 56bps	We refer to the OBR's official forecasts.[236] Only years 2021, 2022 and 2023 are forecast to have an RPI-CPI wedge of 100bps or more. We agree with Oxera that (RPI and CPI) swaps will be impacted by inflation risk premia and/or liquidity risk premia. It is possible that the premia within RPI swaps is greater than the premia within CPI swaps, which could help explain why Oxera's 56bps is larger than the RPI-CPIH wedge in WACC allowance model published alongside DDs.
On Total Market Returns (TMR) Oxera state: "The Office for National Statistics (ONS) has published a new historical series for	See our view on this above (Consultancy report E7: Oxera, ONS back-cast)

[233] Cost of equity in RIIO-ED2 Draft Determinations: Prepared for the Energy Networks Association, Oxera, 25 August 2022, https://www.ofgem.gov.uk/publications/riio-ed2-draft-determinations
[234] RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)
[235] CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Paragraph 5.184, Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)
[236] Data - Office for Budget Responsibility (obr.uk)

Point raised	Ofgem consideration and response
the CPI and the CPIH for the period 1950–88, correcting the errors of the previous series. The new CPIH backcast series is more robust and reliable than its CPI predecessor and should therefore be used to deflate historical returns."	
On Total Market Returns (TMR) Oxera suggest: "Ofgem has erred by using incorrect and statistically biased averaging techniques. Ofgem estimates the historical average TMR using the geometric average plus a subjective uplift to account for the difference between the arithmetic average of returns and the geometric average" "Ofgem's TMR estimates are derived by calculating the geometric average of the historical returns published by Dimson Marsh Staunton (DMS)."	Oxera's work does not sufficiently address the points we made in DDs.[237] For example, Oxera's argument largely ignores the CMA's view, from the Final Determinations on the RIIO-GD&T2 appeals, that Ofgem had not made an error when averaging returns[238] or when applying an uplift[239]. Ofgem's view on TMR is informed by more than just ex-post historical averages (as noted by the CMA during the GD&T2 appeals[240]), so it is incorrect to say that Ofgem relies on any one averaging technique or data source.
On beta, Oxera suggest: "Ofgem has made an error in selecting the appropriate comparator sample for energy networks. It has placed significant weight on the sample of water networks, which are characterised by a lower beta compared to energy networks, and no weight on European energy networks"	Oxera's work does not sufficiently address the points we made in DDs.[241] For example, Oxera's argument largely ignores the CMA's view that Ofgem had not made an error because it did not put weight on European energy networks.[242] Oxera's suggestion that it is erroneous to put weight on water networks is inconsistent with other submissions on behalf of energy networks: for example, Frontier Economics, in its advice to NGED, said "… we considered

[237] Page 164, RIIO-ED2 Draft Determinations Finance Annex RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)
[238] CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Paragraph 5.271, Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)
[239] Ibid paragraph 5.258
[240] CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Paragraph 5.284, Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)
[241] RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)
[242] CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Paragraph 5.271, Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)

Point raised	Ofgem consideration and response
	it reasonable to use the water company betas..."[243]

Consultancy report E9: Frontier, cost of equity

Author	Prepared for	Report	Length	Date
Frontier	NGED (WPD)	Cost of equity – Response to RIIO-ED2 Draft Determinations[244]	26 pages	Aug-22

Point raised	Ofgem consideration and response
Frontier propose an updated cost of equity mid-point of 5.27% which compares with a mid-point of 4.96% from its 2021 report.[245] Frontier also propose aiming up by > 0.4%.	Frontier's work does not sufficiently address the points we made in DDs.[246] For example, Frontier suggest aiming up, which ignores the CMA's view that that Ofgem was not wrong to not aim up.[247]
The increase in Frontier's cost of equity is mostly driven by its higher assumption for TMR as shown in the following table comparing the two Frontier reports. **Report** / **Low** / **High** Nov '21[1] / 6.3% / 6.9% Aug '22[2] / 6.7% / 7.3% Frontier's report said: "We are note (sic) that this update represents purely market data on the nominal average returns as well as better historic inflation series…" and	We have considered the extra years of outturn returns and the new data on back cast inflation from the ONS. We do not consider that ex-post estimates or expected returns have increased by 0.4% as suggested by Frontier.

[243] Frontier Economics (Nov 2021) Cost of Equity assessment for RIIO ED2
[244] Cost of equity - Response to RIIO ED2 Draft Determinations - A report prepared for WPD, Frontier Economics, 23 August 2022. See Responses to Draft Determinations, WPD Annex 7
[245] Frontier Economics, Cost of Equity assessment for RIIO ED2 (Nov 2021)
[246] RIIO-ED2 Draft Determinations – Finance Annex (ofgem.gov.uk)
[247] CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Paragraph 5.940, Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)

Point raised	Ofgem consideration and response
"[Frontier's previous TMR range predates] the publication of the new back cast CPIH series by the ONS that increase (sic) the CPIH real TMR by roughly 20 bps all else being equal"	
Frontier now suggest an unlevered beta range of 0.30 to 0.33 with a mid-point of 0.315, whereas its previous range was 0.31 to 0.34. Frontier state "…given the limited number of available companies, it is reasonable to construct a sample using all GB comparators which includes National Grid as the pure play energy network, and the three water companies, Severn Trent, Untitled (sic) Utilities and Pennon"	We welcome Frontier's unlevered beta proposal, which is very similar to the RIIO-ED2 DD proposal (0.311) even though Frontier's comparator set includes European Energy networks. We welcome Frontier's inclusion of GB water companies and agree with the rationale that it is reasonable to include GB water companies.

Consultancy report E10: Oxera, balance of risks

Author	Prepared for	Report	Length	Date
Oxera	ENA	RIIO-ED2 balance of risks[248]	45 pages	Aug-22

Point raised	Ofgem consideration and response
Oxera states: "Given that we have identified multiple sources of downward bias in the price control, we consider that aiming up on the return on equity is required in the RIIO-ED2 price control to restore the balance of risk and return"	We agree with Oxera that, in principle, a material net asymmetric risk could warrant a degree of aiming up on the allowed return on equity (in line with the CMA's understanding of Ofgem's view in the GD&T2 appeals).[249] We agree with Oxera that, insofar as possible, the best way to address any material asymmetry is at source. We do not think

[248] RIIO-ED2 balance of Risks: Prepared for the Energy Networks Association, Oxera 22 August 2022, Response to RIIO-ED2 Draft Determination Responses to Draft Determinations

[249] CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Paragraph 5.837, Final determination: Volume 2A: Joined Grounds: Cost of equity (publishing.service.gov.uk)

Point raised	Ofgem consideration and response
"The best way to address the issues identified with specific elements of the price control is to address them at source."	there is material asymmetric risk to the downside for investors.
Oxera submits that totex allowances represent a material source of asymmetric risk to the DNOs given for example: Q3. the large proportion of reductions to submitted totex at the DD stage of RIIO-ED2 (17%) versus the reductions proposed at the DD stage of RIIO-ED1 (5.6%). Q4. The ongoing efficiency challenge of 1.2% is larger than ED1 (0.8% to 1.1%).	We do not believe that these two values offer a robust measure of asymmetry. For example, the DNOs may have proposed more efficient totex levels for ED1 or provided better justification or supporting evidence or smaller increases from outturn levels, compared to the DNO proposals for RIIO-ED2. As shown in the July 2020 Draft Determinations for GD&T2, totex allowances appear to be materially asymmetric in favour of companies, as far as the historical data is concerned.[250]
Oxera submits that Output Delivery Incentives are downward skewed.	Oxera's observation appears to rely entirely on the assumption that the max penalty (4%) should equal the max reward (1.95%) for incentives to be balanced. Oxera's argument ignores the fact that the central expectation should reflect a probability weighted expectation. For example, the max penalty may only have a probability of 10% whereas the max reward could have a probability of 90% (ignoring all other scenarios in between), in which case the incentive would be asymmetric in favour of DNOs.
Oxera suggest that RPE indexation may still leave some inflation risk exposure and remain a risk for RIIO-ED2	We agree that some inflation risk exposure may remain, particularly over short horizons. For example, it is entirely plausible that, in the short run, inflation expectations used for WACC allowances do not precisely equal inflation additions to RAV. However, there may be offsetting impacts from unforeseen inflation to assuage the concern than some inflation risk exposure remains.
Oxera state that: "UMs are designed to reallocate risks away from networks if the	We agree that UMs generally reduce risk exposure for DNOs.

[250] Page 72 of RIIO-2 Draft Determinations – Finance Annex, 4 September 2020. draft_determinations_-_finance.pdf (ofgem.gov.uk)

Point raised	**Ofgem consideration and response**
risks are outside the networks' control."	

Appendix 3 - Debt and financeability: A summary of consultant's reports and our comments

Consultancy report D1: KPMG, Assessment of risk allocation implied by the cost of debt allowance

Author	Prepared for	Report
KPMG	ENWL	An assessment of risk allocation implied by the cost of debt allowance in RIIO-ED2

Point raised	Ofgem consideration and response
Infrequent issuers face greater exposure through i) less frequent issuance, and ii) reduced ability to influence the index.	We include an infrequent issuer premium in our cost of debt allowances in Section 2. This reflects risks associated with less frequent issuance. We consider that the chosen iBoxx benchmark index is sufficiently broad that no individual entity can unduly influence the index.
KPMG present modelling that shows the infrequent issuer faces a higher cost and a broader distribution of risk on debt. This is done under three scenarios, assuming 3yr issuance for the infrequent issuer versus 1yr frequency for the frequent issuer.	We have decided to use an annual issuance threshold (£250m per annum) for FDs. No licensee has modelled annual issuance requirements of less than £125m, implying that no more than 2yrs should be assumed in KPMG's modelling (the smallest is £147m p.a. – see Table 2.2 of FD Finance Annex).
Ofgem's previous analysis of considering actual debt costs and applying a sharing factor is incomplete, as the risk from the infrequent issuer is ignored. Debt sharing can be done in a way that is cost neutral overall. A 45% sharing factor would be appropriate to address the increased risk exposure for the infrequent issuer.	We consider that our overall approach of setting an industry-wide cost of debt allowance under a notional approach (whilst considering exogenous factors) is more appropriate than estimating actual debt costs and applying a sharing factor. This has been true across RIIO price controls. This is explained in Section 2. Weakening incentives to minimise debt costs means that an approach may not be cost neutral when considered over multiple price controls.

Point raised	**Ofgem consideration and response**
The issues are exacerbated by an absence of stable regulatory practices on the cost of debt.	Our key policy principles on the cost of debt have remained the same over multiple price controls, including the focus on a notional approach and the role of indexation. We have revisited the calibration and details of the approach, consistent with best practice, to ensure our approach remains fit for purpose.
The regulatory treatment on debt creates the wrong risk allocation, leading to issues around financeability and incentives.	We consider that our approach provides suitable incentives on parties to minimise their debt costs, which should benefit customers overall. We consider it appropriate that debt performance risk sits with equity investors.
The outcome of Ofgem's approach is inconsistent with competitive market outcomes.	We have been in an interest rate environment where rates have fallen materially and over a sustained period of time, prior to 2022. We have provided allowances to cover (historically more expensive) embedded debt. We disagree with KPMG that our approach gives outcomes that lead to under-funding relative to competitive market outcomes.
The volatility of outcomes has increased, with greater uncertainty around RIIO-ED2. Uncertainty around investment timing is heightened with UMs and Net Zero considerations.	We have taken into account macroeconomic and totex uncertainty in our calibration of the cost of debt methodology.
Material hedging costs exist for the infrequent issuer. The cost of carry is therefore higher.	We have included an allowance for the cost of carry of 10bps, the upper end of our estimated range. The evidence underpinning this allowance uses historic data from DNOs and we consider it covers the efficient costs faced by licensees in RIIO-ED2.

Consultancy report D2: KPMG, Analysis of infrequent issuer premium

Author	Prepared for	Report
KPMG	ENWL	Analysis of infrequent issuer premium at RIIO-ED2

Point raised	Ofgem consideration and response
The analysis does not adequately price in the additional risk and costs faced by an infrequent issuer. Proposed solutions include debt sharing, a higher allowance for the cost of carry and an allowance for additional credit spread risk (which the CMS does not address).	We have decided to provide an allowance that equates to 6bps on the overall cost of debt for those licensees that qualify for the infrequent issuer premium, the threshold for which has been increased to £250m p.a. The cost of carry we have decided to allow is drawn from the upper bound of the range (2-10bps), and we consider that this is sufficient to cover the costs faced by RIIO-ED2 licensees. Credit spreads have aspects of controllability and aspects that are non-controllable. We consider that the use of the CMS and application of a 26bps premium on new debt for the purposes of calibrating an allowance is an appropriate and proportionate approach to cover additional risk that may be faced by an infrequent issuer. Further discussion on the infrequent issuer premium is contained in Chapter 2 of the FD Finance Annex.
Ofgem's approach to assessing the premium at the individual licensee level rather than group level is inconsistent with the fact that most DNOs are financed on a group basis in practice. Ofgem's approach to assessing the premium at the individual licensee level rather than group level is inconsistent with Ofgem's approach to estimating other components of the	We have decided to increase the infrequent issuer threshold to £250m p.a. This means that eleven licensees (all except SSES, EPN and EMID) receive the additional 6bps on the total cost of debt. We have set out in the FD Finance Annex (Chapter 2) why we consider it most appropriate to focus on the licensee level, in-keeping with our approach more broadly across the

Point raised	**Ofgem consideration and response**
allowance (RCF costs and cost of carry).	price control, as opposed to ownership group. On the RCF and cost of carry, we have taken into account all relevant evidence, including evidence at both the licensee and overall Group level.
Ofgem's approach to estimating a £150m threshold through tapped issuance relies on evidence from a less representative sector and a minimum £250m threshold would be more appropriate.	We have re-assessed the relevant threshold for the infrequent issuer premium. We have decided to increase the threshold to £250m.
Infrequent issuers have less control over maturity concentration, timing of issuance and debt composition than frequent issuers. They have greater mismatch risk.	See responses to D1
The cost of carry is higher with material prefinancing costs for the infrequent issuer. The CMS is utilised as an overlay to a bond of benchmark size, so does not price in additional costs of pre-financing for an infrequent issuer.	See responses to D1
Ofgem's failure to take into account risks around embedded debt through a premium is inconsistent with compensating for remunerating efficiently incurred debt costs.	We have set out in the FD Finance Annex (paragraphs 1.21-1.43) why we do not consider it appropriate to adjust the allowed return on debt further for embedded debt costs.
ENWL is a small issuer and is under-performing on the cost of debt. All else equal, this indicates that pricing the risk differential for embedded debt is required.	We consider that ENWL is able to perform in line with our cost of debt allowance, though it has unperformed against this allowance in RIIO-ED1 and is expected to underperform at RIIO-ED2. Eleven licensees are below the £250m annual issuance threshold to qualify as an infrequent issuer for ED2.

Point raised	**Ofgem consideration and response**
CMS does not represent an appropriate solution for pricing risk differentials for embedded debt, because it cannot be assumed to apply on an ex-post basis, the allowance was not set using CMS in the past and there is limited evidence of corporates using CMS in practice. CMS does not reflect the perfect hedge to address risk differentials on new debt.	As part of the GD&T2 consultation process, we considered a range of different solutions for estimating a suitable infrequent issuer premium. We considered that the CMS provided a suitable proxy for risk mitigation associated with infrequent issuance and determining an allowance for infrequent issuer costs. No viable or compelling alternatives for addressing this risk have been proposed. Overall, we consider that the use of CMS transaction costs to proxy additional costs is reasonable and proportionate to the issue faced.
No issuer would be able to match Ofgem's cost of debt allowance, using daily issuance, without material hedging costs.	We consider that each individual notional licensee is in able in principle to meet our cost of debt allowance. We acknowledge that to perfectly remove risk on debt, there would be material hedging costs. We consider that our cost of equity is set at a level that is consistent with the risks faced from risk faced on debt.

Consultancy report D3: Centrus, Inflation Linked Derivatives

Author	**Prepared for**	**Report**
Centrus	ENWL	ENWL 2038 Inflation Linked Derivatives and Counterfactual Analysis

Point raised	Ofgem consideration and response
In their report, Centrus, on behalf of ENWL provide a report showing the outturn costs of specific debt issuances, compared to an equivalent cost from issuing index-linked debt. This provides further information on the evolution of interest costs and the decisions that underpinned that outcome.	We welcome the further analysis and detail on ENWL's debt portfolio. Our approach does not involve making assessments of the efficiency of individual issuances. We note that the cost of the debt increased over time, as the removal or revisiting of periodic break clauses led to pricing revisions.

Consultancy report D4: Oxera, Financeability of the RIIO-ED2 Draft Determinations

Author	Prepared for	Report
Oxera	SSEH, SSES	Financeability of the RIIO-ED2 Draft Determinations

Point raised	Ofgem consideration and response
A core element of financeability analysis is that a notionally efficient company would be able to maintain investment-grade credit rating, based on the same credit ratio definitions as used by the rating agencies.	Our approach to financeability has considered credit ratings and simulated credit ratings for the notional licensees under different scenarios. Each notional licensee retains an investment grade credit rating with 200bps downside risk applied.
Meeting minimum thresholds is a necessary, but not sufficient, financeability requirement – the appropriateness of cost of equity must also be assessed to ensure investors are being appropriately remunerated.	A key part of equity financeability is ensuring that the equity allowance is suitably benchmarked. We have set out multiple steps for why we consider the equity allowance is set at the right level in Chapter 3 of the FD Finance Annex.
The report claims that Ofgem misinterprets its own analysis, which the authors claim shows that that under base case totex, both SSES and SSEH are not financeable based on average AICR. There is a progressive deterioration over the RIIO-ED2 period of various ratios and the effects are worse under the high case scenario.	We have presented updated financeability modelling results under different scenarios as part of FDs. We find that the notional SSES and SSEH licensees are financeable, though the AICR ratio is below the threshold level that we understand Moody's apply for a Baa1 credit rating. Chapter 5 of the FD Finance Annex sets out why we consider our approach to financeability assessment is appropriate and consistent with our objectives. We have considered post RIIO-ED2 financeability in assessing how ratios may evolve in future.
Ofgem's conclusions rely on assumptions around large but unspecified equity injections to maintain 60% gearing. The report estimates this would be hundreds of	Our modelling results show the equity injections that are assumed under different scenarios.

Point raised	Ofgem consideration and response
millions of pounds, which would imply negative dividend yields in some scenarios. The analysis also shows what would happen if this equity was not issued, with detailed analysis concluding they would no longer be financeable in some scenarios.	This is consistent with the principle of notional gearing; namely that the notional firm looks to finance its activities with given levels of debt and equity funding. During phases of RAV growth, more investment is required and financeability ratios would be expected to tighten. We do not consider the use of equity to grow the RAV and remain financially resilient is inappropriate. The 25% proportion is consistent with what was used for RIIO-ED1.
Ofgem makes assumptions on efficient company performance which are not justified on best evidence. The key error is: 1. Proportion of index-linked debt is too high, at 25% - report's analysis uses 10%	We have collected information on index-linked debt proportions from licensees. In the electricity distribution sector, we find that on average 22-26% of total debt is expected to be index-linked (excluding and including derivatives). This is relevant evidence (but not the only relevant evidence) for our decision on the suitable proportion of index-linked debt for the notional entity. We consider that a 25% index-linked debt proportion is appropriate for our financeability modelling.
2. Underfunding of companies bases on material cost assessment issues – the report uses SSE's adjusted BP totex figures instead.	We have assessed financeability against multiple different totex scenarios, so consider that this is not an issue. Given our assessment of efficient costs, we do not consider it appropriate to use SSE's BP totex figures or apply an assumed overspend in our central assumptions.
3. Ofgem assumes no rewards or penalties from ODIs but this does not account for the downward skew. The report uses midpoint of RoRE range for common ODIs.	We do not consider that expected ODI outcomes are skewed to the downside, when taking into account plausible levels of performance rather than ODI caps. We continue to include zero rewards or penalties in the base case but model a 200bps RoRE penalty to test

Point raised	Ofgem consideration and response
	resilience against a downside risk scenario.
4. Report claims that both companies would qualify for infrequent issuer premium.	We have assessed notional licensees against a revised threshold of £250m per annum. This means that one of the two SSE licensees has been provided with an allowance for the infrequent issuer premium in our FD assessment.
5. Ofgem uses smooth debt refinancing profile which masks a shortfall in the cost of debt. The report uses a more accurate model which shows this.	We use the expected allowed cost of debt in our financeability modelling. This is consistent with how we have looked at financeability in previous contexts and consider this to remain appropriate.
6. Base case totex is not the most likely scenario based on their analysis.	As noted above, we have run financeability assessments against different totex scenarios, the results of which give us confidence that the package is financeable.
After 'correcting' for these issues, the financeability of the notional companies deteriorates even further. This cannot be addressed through the remedies laid out in the DD as (negative) dividend yields cannot be reduced further, "NPV-neutral" levers are not recognised by CRAs or the CMA and gearing cannot be reduced further.	We disagree with the need to 'correct' for the above issues and consider that the package is financeable. We have not sought to apply NPV-neutral levers for RIIO-ED2 to improve short-term metrics because we are satisfied that the package is financeable.
Even these changes will be insufficient to achieve financeability, and an increase in allowed CoE will also be required in order to maintain an investment grade credit rating in every year of the RIIO-ED2 period.	We have assessed the cost of equity in detail and consider that the allowed cost of equity is both sufficient and consistent with a financeable regulatory package.

Consultancy report D5: Frontier, Inverse Inflation Exposure

Author	Prepared for	Report
Frontier Economics ('Frontier)	Energy Networks Association	Inverse Inflation Exposure

Point raised	Ofgem consideration and response
Frontier set out the approach to inflation since privatisation, arguing that these arrangements have underpinned investors' understanding of risks associated with network investments over that time and enabled fixed-coupon issues to take on inverse inflation exposure. The paper argues that eliminating this exposure would be counter-productive and detrimental for three reasons.	We intend to consult in 2023 on inflation in the regulatory framework. Further information is contained in Chapter 4 of the FD Finance Annex. As such, we do not respond to the individual points raised in this document.
1) Companies made long-term debt structure and decisions on the basis of the "RAV indexation + Real WACC" framework. Changing this with short notice for RIIO-2 would significantly impact their risk exposure and have implications for financial risk management strategy.	
2) Making these changes at a time of high inflation could be seen as "highly opportunistic regulatory intervention".	
3) Addressing inverse inflation exposure would de facto mean that RAV is no longer fully indexed to outturn inflation. This would constitute a major change to the regulatory framework without any notice or evidence that current arrangements are harming consumers and with no impact assessment.	
The above factors would cause a destabilisation to the credibility of the framework and harm consumers and investors, lead to higher costs, risk	

Point raised	Ofgem consideration and response
Net Zero investments and increase bills in the longer term.	

Consultancy report D6: PA, Assessment Of The Capitalisation Rate Applied To Uncertainty Mechanisms

Author	Prepared for	Report
PA Consulting ('PA')	Energy Networks Association	Assessment Of The Capitalisation Rate Applied To Uncertainty Mechanisms In The RIIO-ED2 Draft Determinations

Point raised	Ofgem consideration and response
PA suggested that using Ofgem's proposed rate of 98% leads to bills being 1.5% lower than using 78% by the end of RIIO-2, but higher beyond that.	We acknowledge that capitalisation rates will have bill impacts and impact on intergenerational equity. This is why we have sought to use natural rates that best reflect the nature of the investment and the benefits that accrue to consumers.
PA argue Ofgem have not provided the same "extensive analysis of the impact of the choice of capitalisation rate on financeability" for these rates as they did for GD & T2 and urge them to do so for FDs.	We have considered the impact of capitalisation rates on financeability but have not sought to adjust these from the estimated natural rates as we did not consider that capitalisation rates should be used as a policy lever for financeability.
PA note that Ofgem did not provide similar analysis to GD & T2 for intergenerational equity issues, but also urge them to do so on the basis that it is best practice and given the increase in energy costs over the last year.	As noted above, the focus has been to use natural rates that best reflect the nature of the investment and the benefits that accrue to consumers.
PA recommend that the analysis take account of various scenarios (spending, cap rates, inflation, interest rates) and that detailed analysis is also provided regarding natural cap rates, as a reference point.	Natural capitalisation rates are central to our analysis, and responses were generally supportive of applying natural capitalisation rates for FDs. We have however reflected new evidence to ensure that the rates are consistent with this principle.

Appendix 4 - Inflation expectations

A4.1 We present below the information from the Office for Budget Responsibility (OBR) from the March 2022 Economic and fiscal outlook.[251] Inflation forecasts are an important part of our working assumptions for RIIO-ED2.

Table 23: Inflation expectations, OBR's March 2022 forecast[252]

YE 31st December	2022	2023	2024	2025	2026
CPI	7.44%	4.04%	1.54%	1.88%	2.00%
RPI	9.83%	5.51%	2.34%	2.52%	2.71%

A4.2 We continue to focus on the longest horizon available for the purposes of estimating working assumptions for RIIO-ED2. We also continue to assume that the best proxy for CPIH is CPI. On this basis, we derive a difference between RPI and CPIH (the RPI-CPIH wedge) of 0.700%[253] based on the OBR's March 2022 forecasts for the year 2026.

A4.3 Therefore, in this Finance Annex we refer to a CPIH expectation of 2.00%, an RPI expectation of 2.71%, and an RPI-CPIH wedge of 0.700%.

[251] We note an updated forecast was published on 17 November 2022, which will be reflected in due course.
[252] See CPI and RPI worksheets here: https://obr.uk/download/historical-official-forecasts-database/
[253] Derived using the Fisher equation: (1+2.714%) / (1+2.000%)-1. We display three decimal places solely to allow stakeholders to derive the subsequent tables.

Appendix 5 - Financial values for electricity distribution networks

ENWL

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,988.2	2,076.4	2,175.4	2,278.7	2,366.8	10,885.6	2,177.1
Net additions (after disposals)	240.9	248.1	249.2	229.3	230.8	1,198.3	239.7
Depreciation	152.7	149.1	145.9	141.3	140.0	728.9	145.8
Closing RAV	2,076.4	2,175.4	2,278.7	2,366.8	2,457.6	11,354.9	2,271.0
Calculated allowances							
Fast pot expenditure	110.3	112.9	112.3	103.6	102.1	541.2	108.2
RAV depreciation	152.7	149.1	145.9	141.3	140.0	728.9	145.8
Return	79.2	82.5	86.3	89.2	91.7	428.8	85.8
Pass-through expenditure	55.6	50.4	50.2	49.1	49.1	254.3	50.9
Equity issuance costs	4.8	-	-	-	-	4.8	1.0
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	3.6	2.7	1.6	1.5	1.5	10.9	2.2
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	26.8	22.9	19.1	13.1	10.8	92.8	18.6
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	432.9	420.5	415.3	397.8	395.2	2,061.8	412.4

NPgN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,501.8	1,552.9	1,615.1	1,675.5	1,752.4	8,097.6	1,619.5
Net additions (after disposals)	162.9	172.7	170.2	185.1	185.8	876.7	175.3
Depreciation	111.8	110.5	109.8	108.2	106.7	547.0	109.4
Closing RAV	1,552.9	1,615.1	1,675.5	1,752.4	1,831.5	8,427.4	1,685.5
Calculated allowances							
Fast pot expenditure	58.3	61.3	59.6	63.9	64.0	307.1	61.4
RAV depreciation	111.8	110.5	109.8	108.2	106.7	547.0	109.4
Return	59.5	61.5	63.7	65.8	68.1	318.6	63.7
Pass-through expenditure	41.5	36.6	37.1	37.6	38.2	191.0	38.2
Equity issuance costs	3.6	-	-	-	-	3.6	0.7
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.6	0.6	0.6	0.6	0.6	2.9	0.6
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.2)	(0.0)
Tax allowance	25.7	24.3	22.2	20.9	19.3	112.5	22.5
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	301.0	294.8	293.0	297.1	296.8	1,482.6	296.5

NPgY

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,034.4	2,125.4	2,227.9	2,313.1	2,438.2	11,139.0	2,227.8
Net additions (after disposals)	238.7	249.3	230.2	267.7	262.6	1,248.5	249.7
Depreciation	147.7	146.8	145.0	142.6	142.4	724.5	144.9
Closing RAV	2,125.4	2,227.9	2,313.1	2,438.2	2,558.4	11,663.0	2,332.6
Calculated allowances							
Fast pot expenditure	77.3	79.9	72.3	81.6	79.7	390.8	78.2
RAV depreciation	147.7	146.8	145.0	142.6	142.4	724.5	144.9
Return	81.1	84.4	88.0	91.2	94.9	439.6	87.9
Pass-through expenditure	50.4	48.1	48.8	49.4	50.0	246.7	49.3
Equity issuance costs	4.9	-	-	-	-	4.9	1.0
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.8	0.8	0.8	0.8	0.8	3.9	0.8
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.2)	(0.0)
Tax allowance	34.8	32.2	27.1	25.6	22.6	142.2	28.4
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	396.8	392.2	381.8	391.2	390.4	1,952.4	390.5

WMID

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,698.3	2,770.9	2,847.3	2,910.9	2,958.9	14,186.3	2,837.3
Net additions (after disposals)	268.5	270.1	256.6	236.1	251.3	1,282.7	256.5
Depreciation	195.9	193.8	193.0	188.2	183.5	954.3	190.9
Closing RAV	2,770.9	2,847.3	2,910.9	2,958.9	3,026.7	14,514.7	2,902.9
Calculated allowances							
Fast pot expenditure	78.6	78.7	74.4	68.5	73.2	373.5	74.7
RAV depreciation	195.9	193.8	193.0	188.2	183.5	954.3	190.9
Return	106.6	109.0	111.5	112.8	113.7	553.6	110.7
Pass-through expenditure	44.0	44.1	44.3	44.1	44.1	220.6	44.1
Equity issuance costs	6.5	-	-	-	-	6.5	1.3
Business plan incentive	1.1	-	-	-	-	1.1	0.2
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.0	1.0	1.0	1.0	1.0	5.0	1.0
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	43.9	40.1	37.0	33.0	32.1	186.1	37.2
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	477.6	466.7	461.2	447.5	447.7	2,300.7	460.1

EMID

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,697.8	2,796.8	2,899.9	2,990.9	3,076.3	14,461.7	2,892.3
Net additions (after disposals)	291.1	295.0	283.1	275.5	260.5	1,405.1	281.0
Depreciation	192.1	191.9	192.1	190.2	187.7	953.9	190.8
Closing RAV	2,796.8	2,899.9	2,990.9	3,076.3	3,149.0	14,912.9	2,982.6
Calculated allowances							
Fast pot expenditure	81.0	81.6	78.1	76.1	71.9	388.6	77.7
RAV depreciation	192.1	191.9	192.1	190.2	187.7	953.9	190.8
Return	106.1	109.5	113.1	115.5	117.2	561.5	112.3
Pass-through expenditure	42.6	42.6	42.8	42.6	42.7	213.4	42.7
Equity issuance costs	6.5	-	-	-	-	6.5	1.3
Business plan incentive	1.1	-	-	-	-	1.1	0.2
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.1	1.0	1.0	1.0	1.0	5.1	1.0
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	40.7	36.1	33.0	30.0	26.8	166.5	33.3
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	471.1	462.8	460.1	455.4	447.3	2,296.7	459.3

SWALES

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,287.1	1,359.6	1,429.9	1,510.1	1,575.9	7,162.7	1,432.5
Net additions (after disposals)	161.2	158.7	168.6	154.1	152.2	794.8	159.0
Depreciation	88.7	88.5	88.3	88.4	87.7	441.5	88.3
Closing RAV	1,359.6	1,429.9	1,510.1	1,575.9	1,640.4	7,515.9	1,503.2
Calculated allowances							
Fast pot expenditure	44.9	44.0	46.6	42.5	41.6	219.6	43.9
RAV depreciation	88.7	88.5	88.3	88.4	87.7	441.5	88.3
Return	51.6	54.1	56.9	59.3	61.1	283.0	56.6
Pass-through expenditure	22.9	22.9	23.0	22.9	22.9	114.6	22.9
Equity issuance costs	3.1	-	-	-	-	3.1	0.6
Business plan incentive	0.5	-	-	-	-	0.5	0.1
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.5	0.5	0.5	0.5	0.5	2.6	0.5
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	17.8	15.1	14.1	12.1	10.5	69.5	13.9
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	229.9	225.0	229.4	225.7	224.3	1,134.4	226.9

SWEST

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,973.0	2,073.8	2,176.4	2,288.6	2,384.0	10,895.8	2,179.2
Net additions (after disposals)	231.7	233.7	242.5	225.7	217.6	1,151.1	230.2
Depreciation	130.9	131.0	130.4	130.2	129.1	651.5	130.3
Closing RAV	2,073.8	2,176.4	2,288.6	2,384.0	2,472.6	11,395.4	2,279.1
Calculated allowances							
Fast pot expenditure	60.9	61.3	63.5	59.0	56.8	301.4	60.3
RAV depreciation	130.9	131.0	130.4	130.2	129.1	651.5	130.3
Return	78.8	82.4	86.5	89.7	92.3	429.8	86.0
Pass-through expenditure	28.8	28.8	29.7	29.6	29.6	146.5	29.3
Equity issuance costs	4.7	-	-	-	-	4.7	0.9
Business plan incentive	0.9	-	-	-	-	0.9	0.2
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.9	0.8	0.7	0.7	0.7	3.9	0.8
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	25.6	23.7	22.0	19.1	17.1	107.6	21.5
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	331.6	328.1	332.8	328.3	325.6	1,646.4	329.3

LPN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,798.8	1,851.5	1,912.5	1,961.6	1,999.3	9,523.7	1,904.7
Net additions (after disposals)	189.2	195.6	182.6	167.9	162.7	898.0	179.6
Depreciation	136.5	134.5	133.5	130.3	125.6	660.5	132.1
Closing RAV	1,851.5	1,912.5	1,961.6	1,999.3	2,036.3	9,761.2	1,952.2
Calculated allowances							
Fast pot expenditure	91.8	95.0	87.6	80.3	76.2	430.8	86.2
RAV depreciation	136.5	134.5	133.5	130.3	125.6	660.5	132.1
Return	71.1	73.0	75.0	76.1	76.7	372.0	74.4
Pass-through expenditure	89.6	91.4	72.9	68.8	68.2	390.7	78.1
Equity issuance costs	4.3	-	-	-	-	4.3	0.9
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	(17.8)	(13.1)	3.0	16.2	26.4	14.7	2.9
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	22.6	22.0	26.3	28.3	29.4	128.6	25.7
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	398.2	402.8	398.2	400.0	402.5	2,001.6	400.3

SPN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,852.3	1,903.5	1,972.6	2,027.9	2,079.6	9,835.9	1,967.2
Net additions (after disposals)	195.8	212.2	196.6	189.9	193.1	987.6	197.5
Depreciation	144.6	143.0	141.3	138.2	136.4	703.5	140.7
Closing RAV	1,903.5	1,972.6	2,027.9	2,079.6	2,136.4	10,120.0	2,024.0
Calculated allowances							
Fast pot expenditure	90.0	97.4	90.2	87.2	88.0	452.9	90.6
RAV depreciation	144.6	143.0	141.3	138.2	136.4	703.5	140.7
Return	73.2	75.2	77.5	78.9	80.1	384.9	77.0
Pass-through expenditure	63.0	62.7	48.2	45.0	44.6	263.5	52.7
Equity issuance costs	4.5	-	-	-	-	4.5	0.9
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	(9.4)	(12.8)	4.9	14.5	14.7	11.9	2.4
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	29.4	26.9	30.2	31.1	30.3	147.8	29.6
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	395.3	392.3	392.3	394.9	394.2	1,969.0	393.8

EPN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,857.0	2,972.7	3,099.7	3,173.5	3,242.0	15,344.9	3,069.0
Net additions (after disposals)	336.2	345.5	291.7	284.3	289.3	1,547.0	309.4
Depreciation	220.5	218.5	218.0	215.7	211.5	1,084.3	216.9
Closing RAV	2,972.7	3,099.7	3,173.5	3,242.0	3,319.8	15,807.7	3,161.5
Calculated allowances							
Fast pot expenditure	154.4	158.7	133.6	130.8	131.0	708.5	141.7
RAV depreciation	220.5	218.5	218.0	215.7	211.5	1,084.3	216.9
Return	112.6	116.8	120.5	122.1	123.6	595.5	119.1
Pass-through expenditure	82.5	82.5	79.9	74.5	74.0	393.3	78.7
Equity issuance costs	6.9	-	-	-	-	6.9	1.4
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	(28.8)	(20.4)	14.7	24.1	31.4	21.0	4.2
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	36.8	35.9	43.1	44.6	44.8	205.2	41.0
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	584.9	591.9	609.8	611.8	616.3	3,014.6	602.9

SPD

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,974.7	2,014.9	2,067.2	2,144.1	2,221.9	10,422.8	2,084.6
Net additions (after disposals)	209.4	219.7	207.9	207.5	207.8	1,052.3	210.5
Depreciation	169.2	167.3	131.0	129.8	127.7	725.0	145.0
Closing RAV	2,014.9	2,067.2	2,144.1	2,221.9	2,302.0	10,750.1	2,150.0
Calculated allowances							
Fast pot expenditure	86.4	89.6	84.6	84.2	83.6	428.5	85.7
RAV depreciation	169.2	167.3	131.0	129.8	127.7	725.0	145.0
Return	77.8	79.2	81.6	83.9	86.0	408.3	81.7
Pass-through expenditure	97.0	97.5	66.7	68.1	68.0	397.3	79.5
Equity issuance costs	4.7	-	-	-	-	4.7	0.9
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	2.6	1.1	1.1	1.1	1.1	6.9	1.4
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.2)	(0.0)
Tax allowance	28.6	26.3	10.7	8.7	6.8	81.2	16.2
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	466.4	461.0	375.7	375.7	373.0	2,051.8	410.4

SPMW

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,206.7	2,259.5	2,328.9	2,393.4	2,444.9	11,633.5	2,326.7
Net additions (after disposals)	211.3	226.3	219.2	203.6	198.4	1,058.8	211.8
Depreciation	158.5	156.9	154.7	152.1	146.1	768.2	153.6
Closing RAV	2,259.5	2,328.9	2,393.4	2,444.9	2,497.2	11,924.0	2,384.8
Calculated allowances							
Fast pot expenditure	87.6	93.1	90.6	84.3	81.6	437.1	87.4
RAV depreciation	158.5	156.9	154.7	152.1	146.1	768.2	153.6
Return	87.0	89.0	91.5	92.9	93.9	454.4	90.9
Pass-through expenditure	75.8	76.0	76.2	77.5	77.7	383.1	76.6
Equity issuance costs	5.3	-	-	-	-	5.3	1.1
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.9	0.9	0.9	0.9	0.9	4.7	0.9
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)
Tax allowance	24.7	23.0	19.1	15.1	11.5	93.4	18.7
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	439.7	438.9	433.0	422.8	411.7	2,146.2	429.2

SSEH

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,301.6	1,377.1	1,443.0	1,719.7	1,792.4	7,633.8	1,526.8
Net additions (after disposals)	181.3	172.8	360.6	161.7	145.5	1,022.0	204.4
Depreciation	105.9	106.9	83.9	89.1	89.5	475.3	95.1
Closing RAV	1,377.1	1,443.0	1,719.7	1,792.4	1,848.4	8,180.6	1,636.1
Calculated allowances							
Fast pot expenditure	90.7	86.6	114.2	81.9	73.9	447.3	89.5
RAV depreciation	105.9	106.9	83.9	89.1	89.5	475.3	95.1
Return	52.2	54.7	61.2	67.4	69.2	304.7	60.9
Pass-through expenditure	(49.7)	(24.8)	(29.2)	(28.6)	(29.0)	(161.3)	(32.3)
Equity issuance costs	3.1	-	-	6.3	-	9.5	1.9
Business plan incentive	(0.3)	-	-	-	-	(0.3)	(0.1)
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.5	0.5	0.5	0.5	0.5	2.7	0.5
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	16.2	16.7	11.0	11.5	7.3	62.7	12.5
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	218.7	240.8	241.6	228.2	211.3	1,140.6	228.1

SSES

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,656.8	2,768.5	2,914.4	3,058.2	3,187.1	14,585.0	2,917.0
Net additions (after disposals)	302.5	335.9	333.0	317.6	286.0	1,575.1	315.0
Depreciation	190.8	190.0	189.2	188.6	187.3	946.0	189.2
Closing RAV	2,768.5	2,914.4	3,058.2	3,187.1	3,285.8	15,214.0	3,042.8
Calculated allowances							
Fast pot expenditure	157.8	175.1	173.0	166.1	150.6	822.5	164.5
RAV depreciation	190.8	190.0	189.2	188.6	187.3	946.0	189.2
Return	104.8	109.3	114.7	118.9	121.9	569.5	113.9
Pass-through expenditure	81.9	81.6	81.8	82.3	76.8	404.3	80.9
Equity issuance costs	6.4	-	-	-	-	6.4	1.3
Business plan incentive	(1.3)	-	-	-	-	(1.3)	(0.3)
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.0	1.0	1.0	1.0	1.0	4.9	1.0
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	46.7	47.1	42.6	38.7	31.6	206.6	41.3
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	587.9	604.0	602.2	595.5	569.2	2,958.8	591.8

Table 24: ED baseline allowed returns, and forecast RoRE upside/downside (using pre-RAMs values)

Scenario	Ref	Parameter	ENWL	NPgN	NPgY	WMID	EMID	SWALES	SWEST
Baseline	A	Baseline allowed return on equity	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%
	B	Baseline allowed return on debt	3.07%	3.07%	3.07%	3.07%	3.01%	3.07%	3.07%
	C	Notional gearing	60%	60%	60%	60%	60%	60%	60%
	D=C*B+(1-C)*A	Baseline allowed return on capital	3.93%	3.93%	3.93%	3.93%	3.90%	3.93%	3.93%
Upside	E	Proposed BPI value	0.00%	0.00%	0.00%	0.02%	0.02%	0.02%	0.02%
	F	Totex	2.00%	1.82%	1.83%	1.47%	1.56%	1.77%	1.67%
	G	Common ODIs	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%
	H	Bespoke ODIs	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	I=A+E+F+G+H	RoRE upside	10.07%	9.69%	9.70%	9.36%	9.44%	9.66%	9.56%
Downside	J	Proposed BPI value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	K	Totex	2.00%	1.82%	1.83%	1.47%	1.56%	1.77%	1.67%
	L	Common ODIs	3.99%	3.99%	3.99%	3.99%	3.99%	3.99%	3.99%
	M	Bespoke ODIs	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	N=A-J-K-L-M	RoRE downside	-0.97%	-0.59%	-0.60%	-0.24%	-0.33%	-0.54%	-0.43%

Scenario	Ref	Parameter	LPN	SPN	EPN	SPD	SPMW	SSEH	SSES	Sector Avg
Baseline	A	Baseline allowed return on equity	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%
	B	Baseline allowed return on debt	3.07%	3.07%	3.01%	3.07%	3.07%	3.07%	3.01%	3.06%
	C	Notional gearing	60%	60%	60%	60%	60%	60%	60%	60%
	D=C*B+ (1- C)*A	Baseline allowed return on capital	3.93%	3.93%	3.90%	3.93%	3.93%	3.93%	3.90%	3.93%
Upside	E	Proposed BPI value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	F	Totex	1.76%	1.84%	1.85%	1.78%	1.62%	2.37%	2.03%	1.81%
	G	Common ODIs	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%
	H	Bespoke ODIs	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%
	I=A+E+F +G+H	RoRE upside	9.82%	9.71%	9.72%	9.65%	9.48%	10.24%	9.89%	9.71%
Downside	J	Proposed BPI value	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.03%	
	K	Totex	1.76%	1.84%	1.85%	1.78%	1.62%	2.37%	2.03%	1.81%
	L	Common ODIs	3.99%	3.99%	3.99%	3.99%	3.99%	3.99%	3.99%	3.99%
	M	Bespoke ODIs	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	N=A-J-K-L-M	RoRE downside	-0.53%	-0.61%	-0.62%	-0.55%	-0.38%	-1.15%	-0.82%	-0.60%

Source: Ofgem analysis

Figure 8: RoRE range, pre-RAMs, with out-turn BPI

Appendix 6 - Totex reconciliation

Table 25: Reconciliation of Ofgem base case.

Network	FD Allowed totex	Post-modelling adjustments	Total Proposed Totex excl RPEs	NPCA & other adj. for PCFM totex	PCFM totex excl Access & RPEs	Access SCR funding	RPEs	PCFM totex	PCFM totex: Non-Variant	PCFM totex: Variant	PCFM: fast money	PCFM: RAV additions
	A	*B*	*C=A+B*	*D*	*E=C+D*	*F*	*G*	*H=E+F+G*	*I*	*J*	*K*	*L*
ENWL	1,720	3	1,724	-72	1,652	13	74	1,740	1,259	480	541	1,198
NPgN	1,188	3	1,190	-75	1,115	17	52	1,184	884	300	307	877
NPgY	1,604	3	1,606	-92	1,515	53	71	1,639	1,215	424	391	1,248
WMID	1,674	5	1,679	-131	1,549	37	71	1,656	1,268	388	373	1,283
EMID	1,839	6	1,844	-169	1,676	42	76	1,794	1,400	394	389	1,405
SWALES	1,018	3	1,021	-65	956	15	44	1,014	775	240	220	795
SWEST	1,446	5	1,451	-85	1,366	25	62	1,453	1,081	372	301	1,151
LPN	1,416	4	1,421	-173	1,248	25	56	1,329	1,051	278	431	898
SPN	1,478	5	1,483	-117	1,366	12	62	1,440	1,099	341	453	988
EPN	2,285	8	2,293	-247	2,046	114	95	2,256	1,763	493	708	1,547
SPD	1,474	5	1,478	-70	1,408	9	64	1,481	1,162	319	429	1,052
SPMW	1,477	5	1,482	-61	1,420	12	64	1,496	1,132	364	437	1,059
SSEH	1,218	247	1,465	-65	1,400	17	52	1,469	1,002	467	447	1,022
SSES	2,371	5	2,376	-129	2,246	48	103	2,398	1,985	412	822	1,575
Total	22,207	307	22,514	-1,551	20,963	439	946	22,348	17,076	5,271	6,250	16,098

Table notes

NPCA = Non-Price Control Allocation

FD Allowed Totex: Value net before NPCA. See Chapter 7 of the Core Methodology Document for more information.

Post-modelling adjustments: We add variant totex allowances for Cyber resilience OT and Shetland Link RAV transfer and remove the ongoing efficiency applied to Worst Served Customers and Visual Amenity.

Total Proposed Totex excl RPEs: Value net before NPCA

NPCA & other adjustments for PCFM totex: Reductions to proposed totex for related party margins, disposals, non-price control allocation costs and other controllable opex. We apply a % allocation methodology for non-price control allocation costs and assume submitted costs for all other adjustments.

PCFM totex excl Access & RPEs: Value net after NPCA

Access SCR funding: Access SCR funding as set out in Chapter 12 of the Overview Document.

PCFM totex: PCFM Totex covers allowances that are split between fast money and RAV under the heading 'totex allowances'. It excludes other revenue categories such as pass-through costs & other allowances, incentive rewards and penalties. PCFM totex also is also the sum of columns I and J, or columns K and L.

Due to rounding, some of the total values may not exactly equal the sum of the relevant inputs.

Table 26: Reconciliation of High 1 case

	PCFM totex excl Access & RPEs	**Additional Variant totex under High case 1[254]**	**High case 1 totex estimate**	**Access SCR funding**	**RPEs**	**PCFM totex excl pass-throughs & other allowances, rewards & penalties**	**Fast money**	**RAV additions**
	A	B	C=A+B	D	E	F=C+D+E	G	H
	Net After NPCA		Net After NPCA	Net After NPCA				
ENWL	1,652	60	1,712	13	76	1,801	550	1,250
NPgN	1,115	46	1,161	17	52	1,231	314	917
NPgY	1,515	58	1,572	53	72	1,698	400	1,298
WMID	1,549	106	1,654	37	73	1,764	390	1,374
EMID	1,676	116	1,792	42	78	1,911	406	1,505
SWALES	956	59	1,015	15	45	1,074	229	846
SWEST	1,366	96	1,462	25	64	1,550	316	1,234
LPN	1,248	75	1,322	25	57	1,404	442	962
SPN	1,366	45	1,411	12	62	1,486	460	1,026
EPN	2,046	73	2,119	114	96	2,329	720	1,610
SPD	1,408	95	1,503	9	66	1,578	443	1,135
SPMW	1,420	68	1,488	12	66	1,566	448	1,118
SSEH	1,400	402	1,802	17	52	1,872	508	1,364
SSES	2,246	220	2,466	48	104	2,618	856	1,763
Total	20,963	1,518	22,481	439	963	23,882	6,480	17,402

[254] High Case 1 increases LRE and PCB replacement volume driver costs to submitted cost levels, with additional secondary flexibility and LRE costs under the re-opener also assumed. The indirects escalator applies 11% additional indirects funding for all additional LRE funding and DNO submitted forecasts for re-openers are applied. This includes increasing Wayleaves & Diversions costs up to submitted cost levels through the re-opener.

Table 27: Reconciliation of High 2 case

	PCFM totex excl Access & RPEs	**Additional Variant totex under High case 2[255]**	**High case 1 totex estimate**	**Access SCR funding**	**RPEs**	**PCFM totex excl pass-throughs & other allowances, rewards & penalties**	**Fast money**	**RAV additions**
	A	B	C=A+B	D	E	F=C+D+E	G	H
	Net After NPCA		Net After NPCA	Net After NPCA				
ENWL	1,652	230	1,882	13	81	1,976	577	1,399
NPgN	1,115	43	1,157	17	51	1,226	313	913
NPgY	1,515	1	1,515	53	69	1,637	390	1,247
WMID	1,549	154	1,702	37	74	1,813	397	1,416
EMID	1,676	218	1,894	42	81	2,016	422	1,594
SWALES	956	46	1,001	15	44	1,060	226	834
SWEST	1,366	90	1,456	25	63	1,543	315	1,228
LPN	1,248	194	1,442	25	60	1,527	461	1,066
SPN	1,366	211	1,577	12	67	1,657	485	1,171
EPN	2,046	338	2,384	114	103	2,601	760	1,841
SPD	1,408	161	1,569	9	68	1,647	453	1,194
SPMW	1,420	106	1,526	12	67	1,605	453	1,151
SSEH	1,400	423	1,823	17	53	1,894	511	1,383
SSES	2,246	360	2,606	48	106	2,760	877	1,883
Total	20,963	2,574	23,536	439	987	24,962	6,642	18,320

[255] High Case 2 applies the same assumptions as High case 1 but the Secondary Reinforcement volume driver is increased up to an approximate upper limit based on a draft figure for the volume driver cap. The LV Services volume driver is increased to DNOs' submitted upper range forecasts and other LRE costs are increased to submitted cost levels through the re-opener. The indirects escalator applies 11% on top of this and Wayleaves & Diversions funding is increased to DNOs' submitted upper range forecasts.

Appendix 7 - Incentive cap and collar values

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	DDs	FDs
Customer Satisfaction Survey	Interruptions	CSAU/CSAD	ENWL	1.1	1.1	1.0
			NPgN	0.8	0.8	0.8
			NPgY	1.1	1.0	1.1
			WMID	1.4	1.3	1.4
			EMID	1.4	1.4	1.4
			SWALES	0.7	0.7	0.7
			SWEST	1.0	1.0	1.0
			LPN	1.1	0.9	0.9
			SPN	1.1	0.9	0.9
			EPN	1.7	1.4	1.5
			SPD	1.1	1.0	1.0
			SPMW	1.2	1.1	1.1
			SSEH	0.7	0.7	0.7
			SSES	1.6	1.4	1.4
	Connections	CSBU/CSBD	ENWL	1.9	1.8	1.7
			NPgN	1.3	1.3	1.3
			NPgY	1.9	1.7	1.8
			WMID	2.4	2.2	2.3
			EMID	2.4	2.3	2.3
			SWALES	1.1	1.1	1.2
			SWEST	1.7	1.7	1.7
			LPN	1.8	1.5	1.5
			SPN	1.9	1.6	1.6
			EPN	2.8	2.4	2.4
			SPD	1.9	1.7	1.7
			SPMW	2.0	1.9	1.8
			SSEH	1.2	1.2	1.2
			SSES	2.5	2.3	2.3
	General Enquiries	CSCU/CSCD	ENWL	0.7	0.7	0.7
			NPgN	0.6	0.5	0.5
			NPgY	0.7	0.7	0.7
			WMID	1.0	0.9	0.9
			EMID	1.0	0.9	0.9
			SWALES	0.5	0.5	0.5
			SWEST	0.7	0.7	0.7
			LPN	0.7	0.6	0.6
			SPN	0.7	0.6	0.6
			EPN	1.1	1.0	1.0

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	DDs	FDs
			SPD	0.7	0.7	0.7
			SPMW	0.8	0.7	0.7
			SSEH	0.5	0.5	0.5
			SSES	1.0	0.9	0.9
Complaints Metric	Overall cap	ARCM	ENWL	1.9	1.8	1.7
			NPgN	1.4	1.3	1.3
			NPgY	1.9	1.7	1.8
			WMID	2.4	2.2	2.3
			EMID	2.4	2.3	2.3
			SWALES	1.1	1.1	1.2
			SWEST	1.7	1.7	1.7
			LPN	1.8	1.5	1.5
			SPN	1.9	1.6	1.6
			EPN	2.8	2.4	2.4
			SPD	1.9	1.7	1.7
			SPMW	2.0	1.9	1.8
			SSEH	1.2	1.2	1.2
			SSES	2.5	2.3	2.3
Interruptions Incentive Scheme	Upside cap	TRIM	ENWL	16.4	8.8	13.1
			NPgN	12.0	6.3	9.7
			NPgY	16.2	8.7	13.4
			WMID	21.3	11.1	16.9
			EMID	20.6	11.3	17.3
			SWALES	9.9	5.7	8.6
			SWEST	14.7	8.6	13.1
			LPN	15.9	7.5	11.3
			SPN	16.4	7.8	11.7
			EPN	24.4	12.0	18.3
			SPD	16.4	8.3	12.5
			SPMW	17.3	9.3	13.9
			SSEH	10.2	6.0	9.3
			SSES	21.9	11.5	17.5
	Downside Cap	TRIM	ENWL	16.4	22.0	21.8
			NPgN	12.0	15.8	16.2
			NPgY	16.2	21.8	22.4
			WMID	21.3	27.9	28.2
			EMID	20.6	28.4	28.8
			SWALES	9.9	14.2	14.4
			SWEST	14.7	21.4	21.9
			LPN	15.9	18.7	18.9

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	DDs	FDs
			SPN	16.4	19.6	19.6
			EPN	24.4	30.0	30.6
			SPD	16.4	20.8	20.8
			SPMW	17.3	23.2	23.1
			SSEH	10.2	15.1	15.5
			SSES	21.9	28.8	29.2
Time to Connect	Time to quote (LVSSA)	TQARE	ENWL	0.4	0.3	0.3
			NPgN	0.2	0.2	0.2
			NPgY	0.4	0.3	0.3
			WMID	0.5	0.4	0.4
			EMID	0.5	0.4	0.4
			SWALES	0.2	0.2	0.2
			SWEST	0.4	0.3	0.3
			LPN	0.4	0.3	0.3
			SPN	0.4	0.3	0.3
			EPN	0.6	0.5	0.5
			SPD	0.4	0.3	0.3
			SPMW	0.4	0.3	0.3
			SSEH	0.2	0.2	0.2
			SSES	0.5	0.4	0.4
	Time to quote (LVSSB)	TQBRE	ENWL	0.4	0.3	0.3
			NPgN	0.2	0.2	0.2
			NPgY	0.4	0.3	0.3
			WMID	0.5	0.4	0.4
			EMID	0.5	0.4	0.4
			SWALES	0.2	0.2	0.2
			SWEST	0.4	0.3	0.3
			LPN	0.4	0.3	0.3
			SPN	0.4	0.3	0.3
			EPN	0.6	0.5	0.5
			SPD	0.4	0.3	0.3
			SPMW	0.4	0.3	0.3
			SSEH	0.2	0.2	0.2
			SSES	0.5	0.4	0.4
	Time to connect (LVSSA)	TCARE	ENWL	0.4	0.3	0.3
			NPgN	0.2	0.2	0.2
			NPgY	0.4	0.3	0.3

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	DDs	FDs
			WMID	0.5	0.4	0.4
			EMID	0.5	0.4	0.4
			SWALES	0.2	0.2	0.2
			SWEST	0.4	0.3	0.3
			LPN	0.4	0.3	0.3
			SPN	0.4	0.3	0.3
			EPN	0.6	0.5	0.5
			SPD	0.4	0.3	0.3
			SPMW	0.4	0.3	0.3
			SSEH	0.2	0.2	0.2
			SSES	0.5	0.4	0.4
	Time to connect (LVSSB)	TCBRE	ENWL	0.4	0.3	0.3
			NPgN	0.2	0.2	0.2
			NPgY	0.4	0.3	0.3
			WMID	0.5	0.4	0.4
			EMID	0.5	0.4	0.4
			SWALES	0.2	0.2	0.2
			SWEST	0.4	0.3	0.3
			LPN	0.4	0.3	0.3
			SPN	0.4	0.3	0.3
			EPN	0.6	0.5	0.5
			SPD	0.4	0.3	0.3
			SPMW	0.4	0.3	0.3
			SSEH	0.2	0.2	0.2
			SSES	0.5	0.4	0.4
Major Connections	Max exposure	Appendix 1, CRC 2E	ENWL	3.4	3.1	3.1
			NPgN	2.5	2.2	2.3
			NPgY	3.4	3.0	3.1
			WMID	4.4	3.9	3.9
			EMID	4.3	4.0	4.0
			SWALES	2.0	2.0	2.0
			SWEST	3.0	3.0	3.1
			LPN	3.2	2.6	2.6
			SPN	3.4	2.7	2.7
			EPN	5.0	4.2	4.3
			SPD	3.4	2.9	2.9
			SPMW	3.6	3.3	3.2
			SSEH	2.2	2.1	2.2

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	DDs	FDs
			SSES	4.6	4.0	4.1
Engagement/ Vulnerability	Max exposure	SEt	ENWL	1.9	1.8	1.7
			NPgN	1.3	1.3	1.3
			NPgY	1.9	1.7	1.8
			WMID	2.4	2.2	2.3
			EMID	2.4	2.3	2.3
			SWALES	1.1	1.1	1.2
			SWEST	1.7	1.7	1.7
			LPN	1.8	1.5	1.5
			SPN	1.9	1.6	1.6
			EPN	2.8	2.4	2.4
			SPD	1.9	1.7	1.7
			SPMW	2.0	1.9	1.8
			SSEH	1.2	1.2	1.2
			SSES	2.5	2.3	2.3
DSO Incentive	Max upside	n/a	ENWL		1.8	3.5
			NPgN		1.3	2.6
			NPgY		1.7	3.6
			WMID		2.2	4.5
			EMID		2.3	4.6
			SWALES		1.1	2.3
			SWEST		1.7	3.5
			LPN		1.5	3.0
			SPN		1.6	3.1
			EPN		2.4	4.9
			SPD		1.7	3.3
			SPMW		1.9	3.7
			SSEH		1.2	2.5
			SSES		2.3	4.7
	Max downside	n/a	ENWL		1.8	1.7
			NPgN		1.3	1.3
			NPgY		1.7	1.8
			WMID		2.2	2.3
			EMID		2.3	2.3
			SWALES		1.1	1.2
			SWEST		1.7	1.7
			LPN		1.5	1.5
			SPN		1.6	1.6
			EPN		2.4	2.4
			SPD		1.7	1.7

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	DDs	FDs
			SPMW		1.9	1.8
			SSEH		1.2	1.2
			SSES		2.3	2.3
Collaborative Streetworks (LPN)	Max reward	n/a	ENWL		n/a	n/a
			NPgN		n/a	n/a
			NPgY		n/a	n/a
			WMID		n/a	n/a
			EMID		n/a	n/a
			SWALES		n/a	n/a
			SWEST		n/a	n/a
			LPN		1.5	1.5
			SPN		n/a	1.6
			EPN		n/a	2.4
			SPD		n/a	n/a
			SPMW		n/a	n/a
			SSEH		n/a	n/a
			SSES		n/a	n/a
Dig, Fix, Go (ENWL)	Max exposure	n/a	ENWL		1.8	1.7
			NPgN		n/a	n/a
			NPgY		n/a	n/a
			WMID		n/a	n/a
			EMID		n/a	n/a
			SWALES		n/a	n/a
			SWEST		n/a	n/a
			LPN		n/a	n/a
			SPN		n/a	n/a
			EPN		n/a	n/a
			SPD		n/a	n/a
			SPMW		n/a	n/a
			SSEH		n/a	n/a
			SSES		n/a	n/a

Appendix 8 - REVISED Financial values for electricity distribution networks

ENWL

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,988.2	2,073.8	2,170.1	2,271.4	2,357.7	10,861.2	2,172.2
Net additions (after disposals)	238.2	245.4	247.1	227.4	228.6	1,186.7	237.3
Depreciation	152.7	149.0	145.8	141.1	139.8	728.4	145.7
Closing RAV	2,073.8	2,170.1	2,271.4	2,357.7	2,446.5	11,319.5	2,263.9
Calculated allowances							
Fast pot expenditure	109.6	112.4	112.5	104.1	103.2	541.8	108.4
RAV depreciation	152.7	149.0	145.8	141.1	139.8	728.4	145.7
Return	79.1	82.3	86.1	88.8	91.3	427.7	85.5
Pass-through expenditure	55.6	50.4	50.2	49.1	49.1	254.3	50.9
Equity issuance costs	4.7	-	-	-	-	4.7	0.9
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.7	1.7	1.7	1.7	1.7	8.4	1.7
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	26.4	25.5	22.1	14.5	10.9	99.3	19.9
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	429.7	421.4	418.3	399.2	396.0	2,064.5	412.9

NPgN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,501.8	1,551.0	1,611.4	1,670.8	1,747.0	8,082.0	1,616.4
Net additions (after disposals)	161.0	170.9	169.1	184.3	185.2	870.5	174.1
Depreciation	111.8	110.5	109.7	108.1	106.5	546.6	109.3
Closing RAV	1,551.0	1,611.4	1,670.8	1,747.0	1,825.6	8,405.9	1,681.2
Calculated allowances							
Fast pot expenditure	57.6	60.5	59.0	63.2	63.3	303.5	60.7
RAV depreciation	111.8	110.5	109.7	108.1	106.5	546.6	109.3
Return	59.5	61.4	63.6	65.6	67.9	317.9	63.6
Pass-through expenditure	41.5	36.6	37.1	37.6	38.2	191.0	38.2
Equity issuance costs	3.5	-	-	-	-	3.5	0.7
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.6	0.6	0.6	0.6	0.6	3.2	0.6
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.2)	(0.0)
Tax allowance	25.3	25.9	23.9	21.5	18.8	115.3	23.1
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	299.7	295.4	293.9	296.6	295.3	1,480.9	296.2

NPgY

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,034.4	2,121.8	2,221.1	2,304.2	2,427.3	11,108.8	2,221.8
Net additions (after disposals)	235.1	246.0	227.8	265.6	260.7	1,235.3	247.1
Depreciation	147.7	146.7	144.8	142.4	142.2	723.8	144.8
Closing RAV	2,121.8	2,221.1	2,304.2	2,427.3	2,545.9	11,620.3	2,324.1
Calculated allowances							
Fast pot expenditure	76.0	78.6	71.1	80.3	78.3	384.3	76.9
RAV depreciation	147.7	146.7	144.8	142.4	142.2	723.8	144.8
Return	81.0	84.3	87.7	90.8	94.5	438.2	87.6
Pass-through expenditure	50.4	48.1	48.8	49.4	50.0	246.7	49.3
Equity issuance costs	4.8	-	-	-	-	4.8	1.0
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.9	0.9	0.9	0.9	0.9	4.3	0.9
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.2)	(0.0)
Tax allowance	34.2	34.3	29.5	26.3	21.9	146.1	29.2
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	394.8	392.8	382.7	389.9	387.7	1,947.9	389.6

WMID

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,698.3	2,768.7	2,843.3	2,906.1	2,954.0	14,170.4	2,834.1
Net additions (after disposals)	266.3	268.3	255.6	236.0	251.4	1,277.6	255.5
Depreciation	195.9	193.7	192.9	188.1	183.4	954.0	190.8
Closing RAV	2,768.7	2,843.3	2,906.1	2,954.0	3,022.0	14,494.1	2,898.8
Calculated allowances							
Fast pot expenditure	77.8	78.0	73.9	68.3	73.0	371.1	74.2
RAV depreciation	195.9	193.7	192.9	188.1	183.4	954.0	190.8
Return	106.5	108.9	111.4	112.5	113.6	552.9	110.6
Pass-through expenditure	44.0	44.1	44.3	44.1	44.1	220.6	44.1
Equity issuance costs	6.3	-	-	-	-	6.3	1.3
Business plan incentive	1.4	-	-	-	-	1.4	0.3
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.1	1.1	1.1	1.1	1.1	5.6	1.1
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	42.9	43.0	40.1	34.1	31.6	191.8	38.4
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	476.0	468.8	463.7	448.2	446.8	2,303.5	460.7

EMID

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,697.8	2,793.4	2,893.8	2,982.8	3,067.1	14,434.9	2,887.0
Net additions (after disposals)	287.7	292.2	281.0	274.2	259.5	1,394.7	278.9
Depreciation	192.1	191.8	191.9	190.0	187.5	953.3	190.7
Closing RAV	2,793.4	2,893.8	2,982.8	3,067.1	3,139.2	14,876.3	2,975.3
Calculated allowances							
Fast pot expenditure	79.9	80.7	77.3	75.6	71.5	385.0	77.0
RAV depreciation	192.1	191.8	191.9	190.0	187.5	953.3	190.7
Return	106.0	109.4	112.9	115.2	116.9	560.4	112.1
Pass-through expenditure	42.6	42.6	42.8	42.6	42.7	213.4	42.7
Equity issuance costs	6.3	-	-	-	-	6.3	1.3
Business plan incentive	1.4	-	-	-	-	1.4	0.3
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.1	1.1	1.1	1.1	1.1	5.6	1.1
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	39.7	38.9	36.2	31.2	26.2	172.3	34.5
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	469.2	464.5	462.3	455.8	445.8	2,297.6	459.5

SWALES

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,287.1	1,357.5	1,426.0	1,504.9	1,569.7	7,145.3	1,429.1
Net additions (after disposals)	159.0	156.9	167.1	153.1	151.3	787.5	157.5
Depreciation	88.7	88.4	88.2	88.3	87.6	441.1	88.2
Closing RAV	1,357.5	1,426.0	1,504.9	1,569.7	1,633.5	7,491.7	1,498.3
Calculated allowances							
Fast pot expenditure	44.2	43.4	46.1	42.2	41.3	217.1	43.4
RAV depreciation	88.7	88.4	88.2	88.3	87.6	441.1	88.2
Return	51.5	54.0	56.8	59.0	60.9	282.2	56.4
Pass-through expenditure	22.9	22.9	23.0	22.9	22.9	114.6	22.9
Equity issuance costs	3.0	-	-	-	-	3.0	0.6
Business plan incentive	0.7	-	-	-	-	0.7	0.1
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.6	0.6	0.6	0.6	0.6	2.8	0.6
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	17.3	16.5	15.7	12.8	10.2	72.4	14.5
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	228.8	225.7	230.4	225.7	223.4	1,134.0	226.8

SWEST

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,973.0	2,071.8	2,172.8	2,283.8	2,378.9	10,880.3	2,176.1
Net additions (after disposals)	229.7	231.9	241.3	225.2	217.4	1,145.6	229.1
Depreciation	130.9	131.0	130.3	130.1	129.0	651.2	130.2
Closing RAV	2,071.8	2,172.8	2,283.8	2,378.9	2,467.4	11,374.6	2,274.9
Calculated allowances							
Fast pot expenditure	60.3	60.7	63.0	58.7	56.6	299.5	59.9
RAV depreciation	130.9	131.0	130.3	130.1	129.0	651.2	130.2
Return	78.8	82.4	86.4	89.5	92.1	429.1	85.8
Pass-through expenditure	28.8	28.8	29.7	29.6	29.6	146.5	29.3
Equity issuance costs	4.6	-	-	-	-	4.6	0.9
Business plan incentive	1.2	-	-	-	-	1.2	0.2
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.8	0.8	0.8	0.8	0.8	4.0	0.8
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	24.8	25.8	24.5	20.1	16.7	111.9	22.4
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	330.2	329.4	334.7	328.8	324.8	1,647.9	329.6

LPN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,798.8	1,849.0	1,907.9	1,955.8	1,992.7	9,504.2	1,900.8
Net additions (after disposals)	186.8	193.3	181.3	167.0	162.1	890.5	178.1
Depreciation	136.5	134.5	133.4	130.1	125.5	660.0	132.0
Closing RAV	1,849.0	1,907.9	1,955.8	1,992.7	2,029.2	9,734.6	1,946.9
Calculated allowances							
Fast pot expenditure	90.5	93.9	86.7	79.7	75.6	426.4	85.3
RAV depreciation	136.5	134.5	133.4	130.1	125.5	660.0	132.0
Return	71.1	72.9	74.9	75.8	76.4	371.1	74.2
Pass-through expenditure	89.6	91.4	72.9	68.8	68.2	390.7	78.1
Equity issuance costs	4.2	-	-	-	-	4.2	0.8
Business plan incentive	1.0	1.0	1.0	1.0	1.0	4.8	1.0
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	(19.3)	(14.6)	2.4	16.0	26.5	11.0	2.2
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	22.4	24.0	28.4	29.2	29.1	133.0	26.6
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	395.9	402.9	399.7	400.6	402.2	2,001.2	400.2

SPN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,852.3	1,901.4	1,968.5	2,022.6	2,073.4	9,818.2	1,963.6
Net additions (after disposals)	193.7	210.2	195.3	188.8	192.1	980.1	196.0
Depreciation	144.6	143.0	141.2	138.0	136.2	703.1	140.6
Closing RAV	1,901.4	1,968.5	2,022.6	2,073.4	2,129.3	10,095.2	2,019.0
Calculated allowances							
Fast pot expenditure	88.9	96.3	89.4	86.4	87.3	448.3	89.7
RAV depreciation	144.6	143.0	141.2	138.0	136.2	703.1	140.6
Return	73.1	75.1	77.4	78.6	79.9	384.1	76.8
Pass-through expenditure	63.0	62.7	48.2	45.0	44.6	263.5	52.7
Equity issuance costs	4.3	-	-	-	-	4.3	0.9
Business plan incentive	4.1	4.1	4.1	4.1	4.1	20.7	4.1
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	(10.9)	(14.4)	4.4	14.3	14.8	8.1	1.6
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	30.2	30.1	33.6	33.2	31.3	158.4	31.7
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	397.4	396.9	398.3	399.8	398.2	1,990.7	398.1

EPN

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,857.0	2,968.3	3,091.3	3,162.4	3,228.8	15,307.9	3,061.6
Net additions (after disposals)	331.8	341.4	289.0	281.9	287.0	1,531.0	306.2
Depreciation	220.5	218.4	217.8	215.5	211.2	1,083.4	216.7
Closing RAV	2,968.3	3,091.3	3,162.4	3,228.8	3,304.6	15,755.5	3,151.1
Calculated allowances							
Fast pot expenditure	152.2	156.5	132.0	129.4	129.5	699.6	139.9
RAV depreciation	220.5	218.4	217.8	215.5	211.2	1,083.4	216.7
Return	112.5	116.5	120.1	121.8	123.0	593.9	118.8
Pass-through expenditure	82.5	82.5	79.9	74.5	74.0	393.3	78.7
Equity issuance costs	6.7	-	-	-	-	6.7	1.3
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	(31.3)	(22.8)	13.9	23.8	31.5	15.0	3.0
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	36.1	38.7	46.0	45.3	43.7	209.8	42.0
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	579.1	589.8	609.8	610.2	612.9	3,001.7	600.3

SPD

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,974.7	2,011.3	2,060.4	2,134.9	2,210.6	10,392.0	2,078.4
Net additions (after disposals)	205.8	216.3	205.4	205.3	205.8	1,038.7	207.7
Depreciation	169.2	167.2	130.9	129.5	127.4	724.3	144.9
Closing RAV	2,011.3	2,060.4	2,134.9	2,210.6	2,289.1	10,706.3	2,141.3
Calculated allowances							
Fast pot expenditure	84.7	87.9	83.2	82.9	82.2	420.9	84.2
RAV depreciation	169.2	167.2	130.9	129.5	127.4	724.3	144.9
Return	77.7	79.0	81.3	83.4	85.5	406.9	81.4
Pass-through expenditure	97.0	97.5	66.7	68.1	68.0	397.3	79.5
Equity issuance costs	4.6	-	-	-	-	4.6	0.9
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.2	1.2	1.2	1.2	1.2	5.9	1.2
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.2)	(0.0)
Tax allowance	28.6	28.6	13.0	9.5	6.3	86.1	17.2
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	463.0	461.4	376.2	374.6	370.6	2,045.9	409.2

SPMW

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,206.7	2,256.9	2,323.9	2,386.7	2,437.1	11,611.3	2,322.3
Net additions (after disposals)	208.7	223.9	217.4	202.3	197.3	1,049.5	209.9
Depreciation	158.5	156.9	154.5	151.9	145.9	767.7	153.5
Closing RAV	2,256.9	2,323.9	2,386.7	2,437.1	2,488.4	11,893.0	2,378.6
Calculated allowances							
Fast pot expenditure	86.4	91.9	89.7	83.5	80.9	432.2	86.4
RAV depreciation	158.5	156.9	154.5	151.9	145.9	767.7	153.5
Return	87.0	88.9	91.3	92.6	93.6	453.4	90.7
Pass-through expenditure	75.8	76.0	76.2	77.5	77.7	383.1	76.6
Equity issuance costs	5.2	-	-	-	-	5.2	1.0
Business plan incentive	-	-	-	-	-	-	-
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.0	1.0	1.0	1.0	1.0	5.2	1.0
Directly Remunerated Services	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)
Tax allowance	24.5	25.5	21.6	15.9	10.8	98.2	19.6
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	438.2	440.1	434.3	422.4	410.0	2,145.0	429.0

SSEH

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	1,301.6	1,376.5	1,442.1	1,719.3	1,792.5	7,632.1	1,526.4
Net additions (after disposals)	180.8	172.5	361.0	162.3	146.0	1,022.7	204.5
Depreciation	105.9	106.9	83.9	89.1	89.5	475.2	95.0
Closing RAV	1,376.5	1,442.1	1,719.3	1,792.5	1,849.1	8,179.5	1,635.9
Calculated allowances							
Fast pot expenditure	90.3	86.3	114.3	82.0	74.0	446.8	89.4
RAV depreciation	105.9	106.9	83.9	89.1	89.5	475.2	95.0
Return	52.2	54.7	61.2	67.4	69.2	304.6	60.9
Pass-through expenditure	(49.7)	(24.8)	(29.2)	(28.6)	(29.0)	(161.3)	(32.3)
Equity issuance costs	3.0	-	-	6.7	-	9.7	1.9
Business plan incentive	1.2	-	-	-	-	1.2	0.2
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	0.6	0.6	0.6	0.6	0.6	3.0	0.6
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	16.3	18.0	12.7	12.2	6.9	66.1	13.2
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	219.8	241.7	243.3	229.4	211.1	1,145.3	229.1

SSES

£m 20/21 prices	2023/24	2024/25	2025/26	2026/27	2027/28	RIIO-2 total	RIIO-2 average
Regulatory Asset Value (RAV)							
Opening RAV	2,656.8	2,769.6	2,916.5	3,062.6	3,194.0	14,599.3	2,919.9
Net additions (after disposals)	303.6	336.9	335.4	320.1	288.7	1,584.7	316.9
Depreciation	190.8	190.0	189.3	188.7	187.5	946.3	189.3
Closing RAV	2,769.6	2,916.5	3,062.6	3,194.0	3,295.1	15,237.7	3,047.5
Calculated allowances							
Fast pot expenditure	158.2	175.2	173.8	167.0	151.6	825.7	165.1
RAV depreciation	190.8	190.0	189.3	188.7	187.5	946.3	189.3
Return	104.8	109.3	114.8	119.2	122.2	570.3	114.1
Pass-through expenditure	81.9	81.6	81.8	82.3	76.8	404.3	80.9
Equity issuance costs	6.2	-	-	-	-	6.2	1.2
Business plan incentive	2.3	-	-	-	-	2.3	0.5
Output delivery incentive	-	-	-	-	-	-	-
Other revenue allowances	1.1	1.1	1.1	1.1	1.1	5.4	1.1
Directly Remunerated Services	-	-	-	-	-	-	-
Tax allowance	48.9	49.7	45.8	39.4	30.3	214.2	42.8
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	594.2	606.9	606.5	597.6	569.6	2,974.8	595.0

Appendix 9 - REVISED Totex reconciliation

Containing updated figures for Table 25.

Network	FD Allowed totex	Post-modelling adjustments	Total Proposed Totex excl RPEs	NPCA & other adj. for PCFM totex	PCFM totex excl Access & RPEs	Access SCR funding	RPEs	PCFM totex	PCFM totex: Non-Variant	PCFM totex: Variant	PCFM: fast money	PCFM: RAV additions
	A	*B*	*C=A+B*	*D*	*E=C+D*	*F*	*G*	*H=E+F+G*	*I*	*J*	*K*	*L*
ENWL	1,722	3	1,726	(72)	1,654	13	62	1,728	1,284	445	542	1,187
NPgN	1,186	2	1,189	(75)	1,113	17	44	1,174	874	300	304	870
NPgY	1,596	2	1,598	(92)	1,507	53	60	1,620	1,190	430	384	1,235
WMID	1,679	5	1,685	(132)	1,553	37	59	1,649	1,262	386	371	1,278
EMID	1,838	6	1,843	(169)	1,674	42	64	1,780	1,391	389	385	1,395
SWALES	1,015	3	1,019	(65)	953	15	36	1,005	768	237	217	787
SWEST	1,449	5	1,454	(86)	1,368	25	52	1,445	1,078	367	299	1,146
LPN	1,416	4	1,420	(175)	1,245	25	47	1,317	1,046	271	426	890
SPN	1,476	5	1,482	(117)	1,365	12	51	1,428	1,095	333	448	980
EPN	2,277	8	2,285	(248)	2,038	114	78	2,231	1,752	479	700	1,531
SPD	1,469	5	1,474	(76)	1,398	9	53	1,460	1,142	317	421	1,039
SPMW	1,476	5	1,481	(64)	1,417	12	53	1,482	1,123	358	432	1,049
SSEH	1,227	247	1,474	(64)	1,409	17	43	1,470	1,008	462	447	1,023
SSES	2,397	5	2,402	(127)	2,275	48	87	2,410	2,007	404	826	1,585
Total	22,224	306	22,530	(1563)	20,968	439	790	22,197	17,019	5,178	6,202	15,995

Table notes

NPCA = Non-Price Control Allocation

FD Allowed Totex: Value net before NPCA. See Table 1 of Chapter 7 of the Core Methodology Document for more information.

Post-modelling adjustments: We add variant totex allowances for Cyber resilience OT and Shetland Link RAV transfer and remove the ongoing efficiency applied to Worst Served Customers and Visual Amenity.

Total Proposed Totex excl RPEs: Value net before NPCA

NPCA & other adjustments for PCFM totex: Reductions to proposed totex for related party margins, disposals, non-price control allocation costs and other controllable opex. We apply a % allocation methodology for non-price control allocation costs and assume submitted costs for all other adjustments.

PCFM totex excl Access & RPEs: Value net after NPCA

Access SCR funding: Access SCR funding as set out in Chapter 12 of the Overview Document.

PCFM totex: PCFM Totex covers allowances that are split between fast money and RAV under the heading 'totex allowances'. It excludes other revenue categories such as pass-through costs & other allowances, incentive rewards and penalties. PCFM totex also is also the sum of columns I and J, or columns K and L, with rounding to two decimal places.

Due to rounding, some of the total values may not exactly equal the sum of the relevant inputs.