

Consultation

RIIO-ED2 Draft 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 have now assessed these plans and this document, and others published alongside it, set out our Draft Determinations for DNO allowances under the RIIO-ED2 price control for consultation. Responses are sought to the questions posed in these documents by 25 August 2022. Following our consideration of these responses we will confirm our Final Determinations by December 2022.

The full suite of Draft Determinations documents outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses before confirming our Final Determinations. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our website at [Ofgem.gov.uk/consultations](https://www.ofgem.gov.uk/consultations). If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

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1. Introduction

- 1.1 The RIIO-ED2 price control will cover the five-year period, from 1 April 2023 to 31 March 2028. We began the development process for RIIO-ED2 in August 2019 with an open letter¹ 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 this framework and 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.
- 1.2 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 (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.
- 1.3 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.
- 1.4 In this chapter, we set out how this document fits in with the wider suite of RIIO-ED2 Draft Determinations and with the other RIIO-ED2 documents.
- 1.5 Our Draft Determinations document suite is set out in Figure 1. This document is the Finance Annex and contains our Draft Determinations proposals on the

¹ ED2 Open Letter, https://www.ofgem.gov.uk/sites/default/files/docs/2019/08/open_letter_consultation_on_the_riio-ed2_price_control.pdf

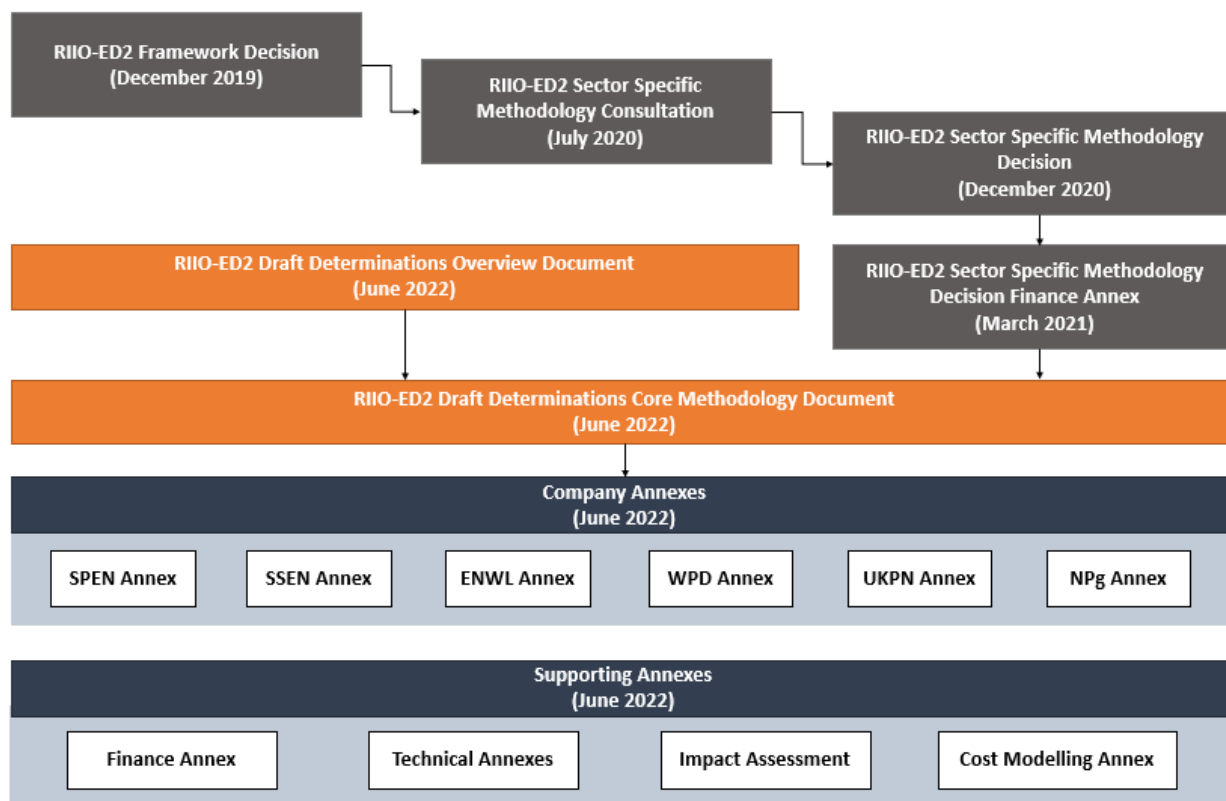
² ED2 Framework Decision, https://www.ofgem.gov.uk/sites/default/files/docs/2019/08/open_letter_consultation_on_the_riio-ed2_price_control.pdf

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

regulatory finance building blocks of RIIO-ED2. In general, these apply across all DNOs. Company-specific considerations have been identified, where relevant.

Figure 1: RIIO-ED2 Sector Methodology document map



- 1.6 We received 11 consultancy reports on finance issues. These reports are summarised below in Table 1 and Table 2.
- 1.7 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 RIIO-ED2 companies and other stakeholders.
- 1.8 Alongside this Finance Annex we have published supporting technical annexes, as listed in Table 3. These allow stakeholders to engage in detail with the primary work that supports our finance proposals, as explained in the remaining sections of this document. We welcome stakeholder views on these annexes during the consultation period.

Table 1: Debt and Financeability focussed consultancy reports we received

Report	Author	Prepared for	Report Date	Report reference
D1	KPMG	ENWL	Dec 2021	Critical review and comparison of analysis by Frontier Economics, SGN and NGN of the infrequent issuer premium
D2	NERA	ENA (Energy Networks Association)	15 Jun 2021	ED2 Additional costs of borrowing ⁵
D3	NERA	SPEN	30 Jun 2021	Cost of Capital for SPEN at RIIO-ED2 ⁶
D4	Oxera	SSEN	26 Nov 2021	ED2 Cost of Debt and Financeability ⁷

Table 2: Equity focussed consultancy reports and research we received

Report	Author	Prepared for	Report Date	Report reference
E1	Frontier	WPD	16 Nov 2021	Cost of equity assessment for RIIO ED2: An updated report prepared for WPD ⁸
E2	Oxera	ENA	4 Jun 2021	The cost of equity for RIIO-ED2 ⁹
E3	WPD	WPD	[not dated]	RIIO-ED2 Investor Questionnaire Responses
E4	KPMG	ENWL	1 Dec 2021	Assessment of ENWL risk exposure at ED2
E5	NERA	SPEN	30 Jun 2021	The Cost of Capital at RIIO-ED2 ¹⁰
E6	KPMG	UKPN	Dec 2021	Relative risk analysis and beta estimation for ED2

⁵ NERA ED2 Additional costs of borrowing,
https://ssenfuture.co.uk/wp-content/uploads/2021/12/A_19.4_NERA_Additional-Costs-of-Borrowing-and-Small-Company-Premium-at-RIIO-ED2_CLEANFINAL_REDACTED.pdf

⁶ NERA Cost of Capital for SPEN at RIIO-ED2,
<https://www.spenergynetworks.co.uk/userfiles/file/Annex%20D.2%20NERA%20Cost%20of%20Capital%20for%20SPEN%20at%20RIIO-ED2.pdf>

⁷ RIIO-ED2 cost of debt and financeability assessment,
https://ssenfuture.co.uk/wp-content/uploads/2021/12/A_19.2_ED2_cost_of_debt_and_financeability_report_CLEANFINAL_REDACTED.pdf

⁸ Cost of equity assessment for RIIO ED2: An updated report prepared for WPD,
<https://yourpowerfuture.westernpower.co.uk/downloads-view/41760>

⁹ The Cost of equity for RIIO-ED2,
<https://d16qaq4vfpk8c6.cloudfront.net/app/uploads/2021/11/Appendix-25b-The-cost-of-equity-for-RIIO-ED2.pdf>

¹⁰ The Cost of capital at RIIO-ED2,
<https://www.spenergynetworks.co.uk/userfiles/file/Annex%20D.2%20NERA%20Cost%20of%20Capital%20for%20SPEN%20at%20RIIO-ED2.pdf>

Table 3: Technical annexes published alongside this finance document

File	Author	File name	Purpose
1	Ofgem	ED2 Licence Model	Forecasts of allowed revenues and financial metrics for Electricity Distribution licensees
2	Ofgem	Gridlines Audit Letter	A letter from Gridlines to summarise its review of the RIIO-ED2 licence model
3	Ofgem	WACC Allowance Model	Presents our proposed implementation approach for debt and equity indexation during RIIO-ED2

2. Allowed return on debt

Section summary

The cost of debt allowance is a significant component of allowed returns and the cost to consumers of network services.

We summarise network companies' Business Plan submission proposals on the debt allowance and set out our updated view on what would provide networks with a reasonable allowance for their debt costs.

Setting a baseline allowance for the cost of debt

Purpose	To provide a reasonable allowance for debt costs that updates with 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.

Background

- 2.1 In this section, we set out our proposals for setting the cost of debt allowance and address the related issues raised by the network companies in their Business Plan submissions.
- 2.2 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 price control period and new debt raised during the price control period).
- 2.3 Our intention is to provide a reasonable allowance for debt costs that updates with changes in market conditions, based on an appropriate index. An approach 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.
- 2.4 An alternative approach would involve placing weight on actual company debt costs, as proposed by one DNO. This would expose each network's customers to

that network's decisions on debt type, tenor, timing and risk management.¹¹ We continue to consider it more appropriate that a network company's shareholders are instead exposed to these risks, in common with corporates in the broader market. The notional company approach reflects the principle that companies and their investors are best placed to bear the risks associated with their borrowing choices.

- 2.5 In our SSMD, we decided to apply full indexation to the cost of debt allowance, which involves setting the cost of debt allowance each year according to updated data for a benchmark index.
- 2.6 In our SSMD Finance Annex, we provided a working assumption for the cost of debt based on a 17-year trailing average of the iBoxx GBP Utilities 10yr+ index yields, with 25 basis points (bps) allowance for additional costs of borrowing.
- 2.7 All network Business Plans accepted the length of the trailing average period but proposed higher additional costs of borrowing. This would increase the cost of debt allowance above our Ofgem SSMD working assumption cost of debt.

¹¹ CMA Final Determination, Volume 3: Individual grounds, Paragraph 14.81, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

Draft Determinations position

Cost of Debt parameter	Draft Determinations position
Index selection	To index the cost of debt allowance with reference to the yield of the iBoxx GBP Utilities 10yr+ index (ISIN reference DE0005996532).
Additional costs of borrowing	To add 25bps to the index for additional borrowing costs.
Calibrating the index – trailing average period	To calculate the allowance using a fixed 17-year trailing average.
Calibrating the index – exceptional cases	To include a 6bps infrequent issuer premium on the allowed cost of debt for three licensees: LPN, NPgN and SWALES.
Deflation to CPIH (Consumer Price Index including owner occupied housing costs)	To deflate the result of the above nominal "all in" yields to CPIH real allowances using the five-year Office for Budget Responsibility (OBR) forecast for CPI, using the Fisher equation.

2.8 The following tables represent forecast Draft Determinations of the cost of debt allowances for each company, based on a 17-year trailing average of the iBoxx GBP Utilities 10yr+ index, plus 25bps for additional costs of borrowing, deflated to CPIH real using the long-term OBR forecast for CPI.

Table 4: Forecast cost of debt allowance (all licensees, except LPN, NPgN and SWALES)

Component	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Cost of debt (17-year trailing average w/ 25bps additional cost of borrowing)	2.47%	2.39%	2.28%	2.15%	2.01%	2.26%

2.9 The allowances for the cost of debt for the three licensees for which we propose an infrequent issue premium of 6bps are shown below.

Table 5: Forecast cost of debt allowance (LPN, NPgN and SWALES)

Component	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Cost of debt (17-year trailing average w/ 25bps additional cost of borrowing and 6bps infrequent issuer premium)	2.53%	2.45%	2.34%	2.21%	2.07%	2.32%

Rationale for Draft Determinations position

Index selection

- 2.10 In our SSMC, we proposed using the iBoxx GBP Utilities 10yr+ index (ISIN reference DE0005996532) rather than the non-financial corporate indices used in RIIO-1. This was based on our view that this provides a better match to network company debt costs. This is consistent with the index used in the RIIO-2 determinations in the GD&T sectors.¹² We consider that the GBP Utilities 10yr+ index remains a relatively broad and representative index, with 84 bonds in the index with a value of £37bn+.¹³
- 2.11 In our SSMD, we noted that we considered the risk of the iBoxx GBP Utilities 10+ index constituent ratings diverging from the notional company rating to be lower (to both networks and consumers) than the risk of the A/BBB combined index diverging from the average borrowing costs of networks. However, because of evidence submitted in response to the RIIO-GD&T2 Draft Determinations that indicated the average rating of the constituents of the GBP Utilities 10yr+ index has fallen over time, we said that we would monitor this information and reassess at Draft and Final Determinations stages whether the index remains appropriate.
- 2.12 All networks accepted our working assumptions on index selection in their Business Plans, though one network considered that the previous move to the iBoxx GBP Utilities index was not supported due to the risk of mismatch with no explicit credit rating.

¹² RIIO-2 Final Determinations Finance Annex, Paragraphs 2.16-2.18, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

¹³ Of the 84 bonds as of 2 June 2022, 21 of the bonds (25%) are captured by iBoxx as broad A, with the remaining 63 bonds (75%) are broad BBB.

- 2.13 The iBoxx GBP Utilities families of indices are not linked to any particular credit rating (other than investment grade). We remain comfortable that the selected benchmark index reflects the circumstances facing networks and provides more representative allowances at times of macro-economic shock than the indices used for RIIO-1. We consider that the iBoxx GBP Utilities 10yr+ index continues to be fit for purpose as a relatively broad and representative index.
- 2.14 The “halo effect” relates to the ability of network companies to consistently issue debt at rates below the relevant iBoxx benchmark. Our analysis at the RIIO-GD&T2 Final Determinations found a much smaller positive halo effect compared to the use of the combined A/BBB index (outperformance of the index of 4bps on a weighted basis, 8bps on an unweighted basis)¹⁴; this was, in part, used as the basis for our SSMD position.
- 2.15 Our updated analysis continues to show that "on the day" debt costs of energy networks when compared to the iBoxx GBP Utilities 10yr+ index exhibits a small positive "halo" (ie outperformance). The size of that halo effect is slightly larger than assessed for the GD&T sectors (7bps using a weighted average, 11bps using an unweighted average). Around half of the constituents of the iBoxx GBP Utilities 10yr+ index are utilities operating in competitive environments, eg energy suppliers, which could explain the higher halo effect observed on more recent issuances during the COVID-19 pandemic.
- 2.16 Our approach involves broadly matching the cost of debt allowance with the average borrowing costs of networks by using a benchmark index that is expected to be most representative. The calibration of the index implicitly captures "on the day" performance for embedded debt, while we cannot be certain that a positive halo effect will continue for new debt and its likely impact would in any case be small.
- 2.17 In light of the above, we continue to consider that the iBoxx GBP Utilities 10yr+ index is appropriate as the basis for the allowed cost of debt, and do not propose an explicit adjustment for any halo effect.

¹⁴ RIIO-2 Final Determinations Finance Annex, Paragraph 2.22, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

Additional costs of borrowing

2.18 In our SSMD, we said that we prefer the transparency of a yield allowance and an additional cost of borrowing allowance so that the total allowance reflects the separable elements.

2.19 We set out a working assumption of 25bps for annual additional borrowing costs. We propose this estimate for Draft Determinations, which is broken down in the table below.

Table 6: Additional cost of borrowing estimate

Additional cost component	Ofgem estimate	Estimate basis
Transaction costs	6bps	Based on networks' data, excluding one bond.
Liquidity/ Revolving Credit Facility (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 assumed differential cost between debt and cash.
CPIH basis risk mitigation	5bps	Allowances on new debt for higher CPIH linked costs, with an allowance for risk mitigation on embedded debt costs.
Total	25bps	

2.20 The 25bps additional cost of borrowing estimate is equivalent to the allowance provided in the RIIO-GD&T2 Final Determinations. We note this is higher than the 10bps included in the Competition and Market Authority's (CMA) PR19 Final Decision on its redetermination for four water companies.¹⁵

2.21 All networks considered that the additional costs of borrowing were insufficient. Consultancy reports were provided on these costs and the infrequent issuer

¹⁵ CMA Final Report – Redetermination of PR19 determinations, Table 9-31, https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_---_web_version_-_CMA.pdf

premium. Please see Appendix 2 for a full review of those consultancy reports. We discuss our proposed approach to each component below.

Transaction costs

- 2.22 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.
- 2.23 We propose to include an allowance of 6bps for transaction costs, based on evidence submitted to us on behalf of the networks.

Liquidity/RCF costs

- 2.24 This allowance is associated with the additional costs tied to liquidity and revolving credit facilities.
- 2.25 We propose to provide an allowance of 4bps, based on RFPR and group account data about actual RCF holdings. This approach is consistent with companies arranging facilities sized at about 10% of debt balances. We assume that the RCF is not drawn down and that any draw-down costs would be covered through the calibration of the debt allowance. Our calculations involve a commitment fee using the mid-point of a 35-45bps range, as per the RIIO-GD&T2 Final Determinations.¹⁶ This range is consistent with the estimate proposed by NERA on behalf of the Energy Networks Association (ENA) in its June 2021 report.¹⁷

Cost of carry

- 2.26 The allowance for the cost of carry covers the issuance of debt ahead of need (ie before a return can be earned on the assets that debt finances) to ensure the sufficiency of cash flows to meet operational requirements.
- 2.27 We propose an allowance of 10bps to cover this cost. 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

¹⁶ RIIO-2 Final Determinations - Finance Annex, Page 14,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

¹⁷ See Appendix 2 for further details and the response to individual arguments raised by the consultants.

(expressed in percentage terms). This is based on the five-year average difference between the benchmark iBoxx GBP Utilities 10yr+ index and the 3m cash deposit rate, as per the approach adopted for the RIIO-GD&T2 Final Determinations.¹⁸ We consider that adopting a long-dated iBoxx index value as the basis for the cost of carry is likely to mitigate risks that the allowance for additional costs is insufficient.

- 2.28 The point estimate we propose to adopt is from the upper bound of a plausible range (2-10bps). In forming our range we have had regard to the different levels at which the calculation could be carried out (eg group vs. operating level) and the possibility that end-of-year balances may be lower than balances at other points during the year.

CPIH issuance/ basis mitigation

- 2.29 This allowance reflects costs faced in relation to index-linked embedded and new debt, resulting from our proposal to switch indexation of the Regulatory Asset Value (RAV) from RPI at RIIO-1 to CPIH at RIIO-2 (set out in Chapter 9).
- 2.30 We propose to provide an allowance of 5bps in total. This is made up of 3bps for embedded debt and an allowance of 2bps for new debt. The embedded debt allowance is 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 weight for embedded debt (78%). The allowance of 2bps for new debt is 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 determination on the premium at issuance for CPI- and CPI-H linked debt vs. RPI-linked debt) multiplied by the assumed proportion of index-linked debt (25%) and the weight for new debt (22%).

Infrequent issuer premium

- 2.31 This premium reflects an increase in the cost of 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 lower RAV growths for RIIO-ED2. While applied to the overall cost of debt, the increase is intended to reflect higher debt costs for the notional company for new debt costs only. As in

¹⁸ RIIO-2 Final Determinations Finance Annex, Table 4,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

our RIIO-GD&T2, we define less frequently issuing notional networks as those that are expected to issue less than £150m per annum on average.¹⁹

- 2.32 Where the notional licensee is not issuing debt equal to the £150m threshold each year, we assume that the licensee may incur additional costs relative to a large (frequent) issuer.
- 2.33 There are three licensees who currently have expected issuance sizes below this threshold – LPN, NPgN and WPD SWALES. We propose to re-assess forecast annual issuance sizes ahead of Final Determinations.
- 2.34 We propose to include an allowance of 6bps on the allowed cost of debt for these three licensees, consistent with the infrequent issuer premium provided in the RIIO-GD&T2 Final Determinations.
- 2.35 We do not include an infrequent issuer premium for embedded debt. We consider that doing so based on actual debt costs would dilute incentives to minimise debt costs. There is also a risk of double counting and an overly generous allowance, given our calibration approach broadly matches expected industry debt costs to expected values of the allowance.
- 2.36 In RIIO-GD&T2, SGN Scotland and NGN both presented evidence suggesting an infrequent issuer premium of 6bps on the overall cost of debt was appropriate.
- SGN Scotland focused on additional risks from "small infrequent issuers" ie licensees who issue benchmark size debt but less frequently than larger licensees, presenting evidence from three banks on the costs of a Constant Maturity Swap (CMS) to mitigate additional risks from issuing less frequently than larger issuers. This equated to a 26bps increase on the proposed cost of new debt, with pricing evidence provided by SGN's relationship banks.²⁰
 - NGN presented arguments around illiquidity costs facing "small frequent issuers" ie licensees who issue as frequently as larger licensees, but with sub-benchmark sized debt, to derive a 6bps overall increase. This equated to a 15bps increase on the proposed cost of new debt.²¹

¹⁹ This is based on an assumed benchmark size of £250m, with the potential for £100m of that amount to be tapped at a later date. We assess the threshold under our base case assumptions.

²⁰ KPMG LLP (2021) Critical review and comparison of analysis by Frontier Economics, SGN and NGN of the infrequent issuer premium, December 2021 – Prepared for Electricity North West Limited.

²¹ KPMG (2021) *ibid*.

- 2.37 For RIIO-ED2, evidence presented by ENWL from its consultants, KPMG, (see Appendix 2) indicates that the SGN and NGN estimates may have underestimated the true additional costs faced by infrequent issuers (though this is not quantified).
- 2.38 Our estimate of 6bps on the total cost of debt is 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 reflects the use of CMS to hedge interest rate risk from less frequent issuance. The 6bps is estimated based on the proportion of new debt estimated to be issued for RIIO-ED2 (22%).²² We note that use of a 15bps premium on new debt, as per the NGN proposals at RIIO-GD&T2, would lead to a 3bps infrequent issuer premium for RIIO-ED2, given the proportion of new debt expected to be raised in RIIO-ED2.

Other transaction costs

- 2.39 We do not propose an allowance for either a positive halo effect (discussed in paragraph 2.14) or include a New Issuance Premium. The cost of network companies' debt should be reflected in the calibration of the index and we do not consider that a separate allowance is required.

Calibrating the index

- 2.40 In our SSMD, we stated that we would assess the appropriate debt calibration for the ED sector following Business Plan submission, at which point we would have sight of the likely RAV growth, and hence borrowing requirements, of notional ED networks.
- 2.41 Our SSMD proposed 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

²² Note that this is based on an industry average, rather than company specific weightings. The underlying calculations for the premium use an assumed 60% gearing for all licensees and changes in RAV using a common assumption on debt tenor.

by the CMA in relation to the WWU appeal²³. This approach has also had regard to the need to secure that licensees are able to finance their activities.

2.42 We said in our SSMD that once final Business Plans were submitted, we would revisit the precise calibration of the index. This calibration is intended to broadly match debt allowances with expected efficient debt costs of ED networks across RIIO-ED2. This approach has parallels with approaches applied in other regulatory contexts, for example, the approach adopted by Ofwat for PR19 (a principle that was maintained in the CMA PR19 redeterminations).

2.43 One of the key tools in this calibration is the selection of a suitable trailing average period. In our SSMD,²⁴ we set out why we do not consider that it would be appropriate to set the debt allowance based on a trailing average broadly equal to a more conceptual weighted average maturity of sector debt.²⁵

2.44 While not all network Business Plans agreed with the use of the pooled approach to setting a suitable cost of debt allowance, all networks adopted the working assumptions set out using a 17-year trailing average of the iBoxx GBP Utilities 10yr+ index, based on RIIO-ED2 sector costs (with additional costs of borrowing applied on top). One network (ENWL) also highlighted that Ofgem should consider derivatives in its assessment of sector debt costs.

2.45 We set out further details on our proposals below.

Pooling network debt costs

2.46 For calibrating the index, there are multiple options available for assessing average industry debt costs. This includes consideration of ED sector costs only, all RIIO-2 sectors or a combination of the two approaches.

2.47 In our SSMD, we considered it more appropriate to focus on RIIO-ED2 sector costs only.²⁶ Placing weight on all RIIO-2 sectors risks underfunding the RIIO-ED2 networks on average and may include cost estimates that are less representative

²³ CMA Final Determination, Volume 3: Individual grounds, Paragraph 14.144, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

²⁴ RIIO-ED2 SSMD Finance Annex, Paragraph 2.23, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

²⁵ This conceptual cross-check would increase the length of the trailing average to around 20 years. The use of a 20-year trailing average rather than a 17-year trailing average would increase the expected allowed cost of debt by 24bps over the RIIO-ED2 price control period.

²⁶ RIIO-ED2 SSMD Finance Annex, Paragraph 2.27, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

of the notional ED licensee and the characteristics of their debt. The figures for other sectors are also not as up to date as in the ED sector (both for existing debt and future borrowing requirements), so we have greater confidence in the robustness of the RIIO-ED2 data.

- 2.48 We still have reference to the broader pool of RIIO sectors as a sense-check (ie gas transmission (GT), electricity transmission (ET) and gas distribution (GD)), given the inclusion of more networks and a greater volume of debt being included as part of the analysis. This cross-check helps ensure that we are not placing excess weight on company-specific financing decisions in the ED sector.

Use of derivatives

- 2.49 Our SSMD did not go into specific detail on the precise calibration methodology, but our approach is informed by our approach for RIIO-GD&T2, which was upheld on appeal to the CMA.²⁷
- 2.50 Our approach to calibrating the trailing average periods for RIIO-ED2 utilises two initial pools of debt: one pool that excludes all derivatives, and another pool that includes derivatives.
- 2.51 We consider it is more appropriate to focus on the pool of debt costs excluding derivatives. This is more likely to lead to a more representative cost of debt. The pool of debt costs including derivatives is only considered as a broad cross check, due to the relative benefits and costs from including derivatives within our calculations.
- 2.52 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. As noted by the CMA (2021)²⁸, all standard derivatives should have a net present value (NPV) of zero at the point of deployment (ie are deployed as a "fair bet").

²⁷ CMA Final Determination, Volume 3: Individual grounds, Paragraphs 14.201-14.259, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

²⁸ CMA Final Determination, Volume 3: Individual grounds, Paragraph 14.224, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

- 2.53 We note that 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.
- 2.54 Assessing derivatives at a single point in time creates complications where derivatives are used to profile cash inflows and outflows. At least one ED 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.²⁹ This approach could create an incentive for companies to enter into derivative contracts immediately before the calibration exercise to profile cash flows. 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.
- 2.55 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.
- 2.56 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.³⁰ We consider that 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. In any case, there is no certainty that this would address the concern about the ability to accurately measure the true underlying rate of interest on these derivatives during RIIO-ED2.

Other considerations for calibration

- 2.57 In our approach to calibration, we consider trailing averages for the cost of debt allowances using unweighted averages of daily yields. This is consistent with our approach to indexation in the RIIO-GD&T2 price controls, with the exception of the approach taken for SHETL's (Scottish Hydro Electric Transmission Limited) bespoke cost of debt indexation mechanism.

²⁹ 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.

³⁰ The approach would require a full review of the relevant terms and conditions, with an absence of available market benchmarks in many cases meaning an assessment of the efficiency of derivatives is very challenging.

- 2.58 We consider it appropriate to exclude intercompany loans from our analysis of embedded debt costs because we are not satisfied that features of these loans represent terms and conditions that would be generally available to a notionally efficient operator if borrowing from an external third party. This is consistent with our approach at RIIO-GD&T2.

Approach to assessing debt costs

- 2.59 Our estimate of forecast network debt costs involved modelling the embedded and forecast new debt of networks. In doing so, we:

- Excluded liquidity facilities, revolving credit facilities and overdrafts (as these are considered in the additional costs of borrowing, discussed above).
- Excluded intercompany loans from embedded debt costs but assumed they are refinanced at their maturity with 20-year fixed rate debt raised at the forecast benchmark rate for that year.³¹
- Excluded all derivatives in the central calibration exercise.
- Excluded instruments with insufficient data to model.
- Used the yield to maturity at issue for fixed rate and inflation linked bonds (rather than the coupon).
- Used OBR forecast inflation to forecast inflation-linked debt payments and accretion.
- Used London Interbank Offered Rate (LIBOR) forward curves (combined with the stated margin) to forecast debt payments on floating rate debt.
- Assumed all maturing debt is refinanced with 20-year fixed rate debt raised at the forecast benchmark rate for that year.
- Assumed RAV growth is funded by a proportion of debt equal to notional gearing for each notional company.
- Where notional gearing has been adjusted downwards from RIIO-1, adjusted downwards the amount of refinancing or new debt assumed to reflect a matching percentage move downwards in gearing.
- Added our assumption of 25bps for additional costs of borrowing to both embedded and new debt.

- 2.60 Using this approach, we compared various network-proposed index calibrations to forecast ED debt costs, in nominal terms.

³¹ We exclude these as we are not satisfied that features of these loans represent terms and conditions that would be generally available to a notionally efficient operator if borrowing from an external third party.

Testing different calibrations under relevant scenarios

2.61 We tested the suitability of calibrations with forecast industry debt costs under different scenarios; those scenarios involved varying assumptions in relation to totex performance, inflation and interest rates ie iBoxx and LIBOR.

Table 7: Comparing forecast allowed and forecast industry debt costs in RIIO-ED2 – excluding derivatives and excluding the infrequent issuer premium

Calibration approach	Base	Inflation +1%	Inflation -1%	iBoxx and LIBOR +1%	iBoxx and LIBOR -1%
10yr + 25 bps costs	-0.82%	-0.92%	-0.71%	-0.91%	-0.72%
15yr + 25 bps costs	-0.25%	-0.36%	-0.15%	-0.41%	-0.09%
17yr + 25 bps costs	-0.02%	-0.13%	+0.08%	-0.20%	+0.15%
18yr + 25 bps costs	+0.07%	-0.04%	+0.18%	-0.11%	+0.25%
20yr + 25 bps costs	+0.21%	+0.11%	+0.32%	+0.02%	+0.40%
10-14yr + 25 bps costs	-0.47%	-0.58%	-0.36%	-0.62%	-0.32%
11-15yr + 25 bps costs	-0.35%	-0.46%	-0.25%	-0.51%	-0.20%
10-20yr + 25 bps costs	+0.17%	+0.06%	+0.28%	-0.02%	+0.36%

2.62 The inclusion of derivatives as a cross-check would reduce outperformance (increase underperformance) by 9-23bps under the scenarios shown above. However, we consider this as a cross-check only. We consider that the results of this cross-check do not suggest that our decision above was wrong or should be revisited.

2.63 Based on the above calibration, we consider it suitable to apply a 17-year trailing average of the iBoxx GBP Utilities 10yr+ index, with additional costs of borrowing of 25bps. We propose to assess the suitability of this assumption ahead of Final Determinations to ensure that the forecast allowance continues to be reflective of expected industry debt costs.

2.64 We do not believe it is necessary to calibrate the index to fully compensate networks in all potential macro-economic environments, as this could lead to consumers overpaying to cover risks that we consider should be borne by equity holders.

Deflating the index to a CPIH real allowance

- 2.65 We need to obtain a real CPIH cost of debt allowance, to be consistent with the measure of indexation used as part of the regulatory framework. This requires the deflating of nominal yields into a real equivalent.
- 2.66 In our SSMD, we set out a decision to use a long-term OBR forecast for CPI inflation to directly deflate nominal index yields into CPIH real allowances.³² Our proposed approach is to deflate nominal yields by the OBR's five-year forecast of CPI inflation, given the current absence of long-term estimates of CPIH inflation.
- 2.67 In making this conversion, we propose to use the Fisher equation, as per the approach to setting real allowances in previous RIIO price controls. We consider that this approach reflects best practice and provides the most accurate real cost.
- 2.68 The network Business Plans did not present alternative measures for deflating nominal yields, though one network did propose that the regulatory framework could be changed, with the non-inflation linked element of debt costs receiving a nominal allowance under the alternative proposal. We discuss the approach to inflation in more detail in Chapter 4.

Consideration of unusual or exceptional circumstances

- 2.69 We have historically 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. Examples of this include the infrequent issuer premiums and the use of RAV-weighted averaging for SHETL in both RIIO-1 and RIIO-2. The latter case reflected the RAV profile and expected RAV growth being considered exceptional and exogenous to the company's financing decisions. Forward-looking costs were adjusted to reflect this.
- 2.70 In our SSMD, we said that we would assess any such requests in light of the proposed methodology and principles underpinning setting the allowed cost of debt.³³
- 2.71 One licensee (ENWL) made a request for consideration of unusual or exceptional circumstances. In its Business Plan, ENWL suggested that a "one size fits all"

³² RIIO-ED2 SSMD Finance Annex, Paragraph 2.44,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

³³ RIIO-ED2 SSMD Finance Annex, Paragraph 2.41,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

approach is not optimal as it fails to consider relevant company-specific characteristics that may influence debt costs. ENWL proposed mechanisms that it considered better reflected the circumstances faced by the individual networks and improved Ofgem's approach. The two proposed mechanisms were a debt performance sharing mechanism and a time-weighted issuance approach that allocates risk around debt timing to customers.

2.72 ENWL's proposals on debt performance sharing would have negative impacts on incentive properties for licensees to manage debt prudently and efficiently that setting a sector-wide cost of debt benchmarked to market trailing averages provides. The approach would also move away from well-established regulatory precedent and an aggregate notional assessment of the cost of debt³⁴. The use of time-weighted averaging based on issuance moves risk from companies to consumers – we do not consider that ENWL has provided compelling evidence why such an approach would be appropriate for RIIO-ED2.

2.73 We do not consider that there are exogenous factors for individual DNOs that would warrant further adjustments to the cost of debt.

Consultation question on allowed return on debt

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

³⁴ Debt performance sharing was in our RIIO-GD&T2 SSMD Finance Decision, Paragraphs 2.28-2.40, https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf

3. Allowed return on equity

Section summary

We summarise Business Plan submissions with regards to baseline equity returns for the ED licensees during RIIO-ED2. We provide an updated view and propose baseline returns of 4.75% (using market data as at 29 April 2022) at 60% notional gearing, before seeking views on the underpinning analysis and proposals. All values in this chapter are CPIH-real, unless stated otherwise.

Setting a baseline allowance for the cost of equity

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

Background

3.1 In our RIIO-ED2 Framework Decision,³⁵ in the absence of compelling evidence to suggest that a different methodology should be used for the ED sector, we decided to set the baseline allowed return on equity using the same methodology as applied to the other RIIO sectors (GD&T).

3.2 In our SSMC,³⁶ we sought views on how to apply this methodology to the ED 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 ED sector?

3.3 Equity issues for ED are very similar to GD&T because the risks and returns for investors will be driven by common issues. In our RIIO-ED2 SSMD,³⁷ we

³⁵ RIIO-ED2 Framework Decision,
https://www.ofgem.gov.uk/sites/default/files/docs/2020/01/riio-ed2_framework_decision_jan_2020.pdf#page=45

³⁶ RIIO-ED2 SSMC Finance Annex, Page 12,
https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf#page=12

³⁷ RIIO-ED2 SSMD Finance Annex, Page 34,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=34

considered that there was no compelling evidence to support implementing a cost of equity methodology in the ED sector that was different from GD&T, nor that different systematic risk assumptions applied for the ED sector compared to the GD&T sectors.

- 3.4 In March 2021, each of the GD&T licensees appealed elements of our RIIO-GD&T2 Final Determinations to the CMA. All eight appealed our decision on the cost on equity. In October 2021, the CMA published its Final Determinations,³⁸ finding, among other things, that the Gas & Electricity Markets Authority (GEMA) had not erred in its approach to, or estimate of, the cost of equity. However, it found against GEMA on the adjustment for Expected Outperformance (the "Outperformance Wedge") in Step 3 of its equity methodology.^{39,40} We believe it is appropriate to reflect CMA's view on the RIIO-GD&T2 price control appeals within these RIIO-ED2 Draft Determinations, because the issues are similar across the sectors, even though RIIO-ED2 remains a separate price control.
- 3.5 We have reflected the CMA's findings from the RIIO-GD&T2 appeals in these Draft Determinations for RIIO-ED2. The main change is that we propose to remove the Expected Outperformance adjustment of 25bps from Step 3. The CMA agreed with our view that there is asymmetry of information between the regulator and regulated entities.⁴¹ The CMA also considered the overall extent of operational outperformance in RIIO-1 to have provided strong support for GEMA treating the scope for operational outperformance as an important risk area for RIIO-2, in relation to which significant changes might be required to protect consumers appropriately.⁴² In light of the CMA's conclusions on operational outperformance and information asymmetry, we remain open to proposals as to how these issues might best be addressed.

³⁸ CMA Licence Modification Appeals,

<https://www.gov.uk/cma-cases/energy-licence-modification-appeals-2021>

³⁹ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity,

https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf

⁴⁰ CMA Final determination Volume 2B: Joined Grounds B, C and D,

https://assets.publishing.service.gov.uk/media/617fd07ce90e07197483b8a9/ELMA_Final_Determination_Vol.2_B.pdf

⁴¹ CMA Final determination Volume 2B: Joined Grounds B, C and D, paragraph 6.95

https://assets.publishing.service.gov.uk/media/617fd07ce90e07197483b8a9/ELMA_Final_Determination_Vol.2_B.pdf#page=44

⁴² CMA Final determination Volume 2B: Joined Grounds B, C and D, paragraph 6.91

https://assets.publishing.service.gov.uk/media/617fd07ce90e07197483b8a9/ELMA_Final_Determination_Vol.2_B.pdf#page=43

Business Plan submissions

3.6 The DNOs submitted final Business Plans in December 2021 using the working assumptions provided in our SSMD. DNOs also provided their views on equity returns, as shown in Table 8 below.

Table 8: DNOs' views on equity returns

DNO company	Equity quotes / proposals from Business Plans
ENWL	"As a consequence of the timing of the CMA publication, we have chosen not to propose a target equity return in this Business Plan submission" "[4.79%] is the minimum level of equity return that results in the Notional company with the baseline level of investment attaining a 1.4x AICR [adjusted interest coverage ratio]."
SSE	"Our selection of 5.9% is towards the bottom of the Oxera (June 2021) CoE [cost of equity] range only by virtue it is the minimum number required to reach 1.4x AICR for the target investment grade credit rating"
WPD	"In summary, we consider that the appropriate cost of equity for RIIO-ED2 is 4.96%." WPD presented a range of 4.37% to 5.54%.
NPg	"In reaching our own view, we have worked with financial expert Oxera to review the evidence. It has concluded that the cost of equity for companies in our sector is between 5.8 per cent and 6.9 per cent."
SPEN	"Taking a balanced consideration of the economic evidence outlined in the previous sections, we propose an allowed cost of equity of 6.21% real-CPIH, post-tax for the RIIO-ED2 price control."
UKPN	"Based on the analysis we believe that the cost of equity lies within a range of 5.28% and 6.73% and as minimum should be 5.5%"

Source: Ofgem analysis

3.7 To support their views, DNOs referred to consultancy reports (listed at Table 2 above). In the sections below we address the key issues raised in those reports, and we provide a detailed summary and response to the issues raised within Appendix 3.

Step 1 – The Capital Asset Pricing Model evidence

Risk-free rate (RFR) and equity indexation

Business Plan submissions

3.8 Submissions focused on the best estimate of the RFR and whether this could be improved by using AAA-rated corporate debt, rather than RPI Index-Linked Gilts

(ILGs). There was little discussion on how the RFR should be updated during the control period ("equity indexation").

- 3.9 WPD proposed an RFR range of -1.61% to -0.65%, consistent with Ofgem's working assumption⁴³ of -1.16% and consistent with the range proposed by WPD's advisor, Frontier Economics, in a report dated November 2021.⁴⁴
- 3.10 SPEN suggested that a more accurate estimate of the RFR would be to follow the CMA's approach in the PR19 re-determinations⁴⁵, which uses corporate bond information. SPEN referred to NERA's June 2021 report which proposes an RFR of -0.76%. UKPN suggested an RFR range of -1.34% to -0.93%, while referring to another UK regulator, the Civil Aviation Authority (CAA), where corporate bond information informed its view of the RFR in its initial proposals for the Heathrow Airport price control.⁴⁶

Consultation position: Step 1 Ofgem view on RFR

Allowance parameter	Consultation position
Risk-free rate	To use RPI ILGs, adjusted to CPIH-real terms, as the basis for the RFR assumption as calculated in the weighted average cost of capital (WACC) allowance model published alongside these Draft Determinations. We welcome stakeholder views on the inflation wedge calculation therein and ask a consultation question on this below.

- 3.11 We publish alongside these Draft Determinations, a model ('WACC Allowance Model - RIIO-ED2 30th April 2022 update Alternative Wedge.xlsx') to allow stakeholders to review the proposed detailed implementation, and to suggest any changes prior to Final Determinations. Table 9 below displays our latest estimates of the RFR, using recent information on ILGs.

⁴³ RIIO-ED2 SSMD Finance Annex, Page 34, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=34

⁴⁴ Frontier Economics, Cost of Equity Assessment for RIIO-ED2, Page 25, <https://yourpowerfuture.westernpower.co.uk/downloads-view/41760#page=25>

⁴⁵ CMA Final Report - Redetermination of PR19 determinations, see Paragraph 9.265 for example: https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_---_web_version_-_CMA.pdf#page=799

⁴⁶ CAA Economic Regulation of Heathrow Airport Limited - Section 2: Financial Issues, Page 63, [https://publicapps.caa.co.uk/docs/33/H7%20Initial%20Proposals%20Section%202%20Financial%20issues%20\(CAP2265C\).pdf#page=63](https://publicapps.caa.co.uk/docs/33/H7%20Initial%20Proposals%20Section%202%20Financial%20issues%20(CAP2265C).pdf#page=63)

Table 9: ILGs and the forward curve, 20-year tenor, as at April 2022

Component	2023/24	2024/25	2025/26	2026/27	2027/28	Average	Ref	Source
ILG (RPI, spot)	-1.75%	-1.75%	-1.75%	-1.75%	-1.75%	-1.75%	A	Bank of England
Uplift (RPI)	0.07%	0.23%	0.38%	0.44%	0.49%	0.32%	B	Bank of England
ILG (RPI, forward)	-1.68%	-1.52%	-1.37%	-1.31%	-1.26%	-1.43%	C	C = A+B
ILG (CPIH, spot)	-1.06%	-1.06%	-1.06%	-1.06%	-1.06%	-1.06%	D	$D = (1+A) * (1+0.7\%)^{-1}$
Uplift (CPIH)	0.07%	0.23%	0.38%	0.44%	0.50%	0.32%	E	E = F - D
ILG (CPIH, forward)	-0.99%	-0.83%	-0.68%	-0.62%	-0.57%	-0.74%	F	$F = (1+C) * (1+0.7\%)^{-1}$

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

Rationale for consultation position

- 3.12 In our SSMD, we explained that the RFR should not vary between sub sectors and that the logic and methodology we used in RIIO-GD&T2 should be applicable to RIIO-ED2.
- 3.13 Further, we still believe that ILGs provide a sound basis for estimating the RFR, because government bonds are very low risk and because we are not persuaded there are other sources, such as AAA corporate bonds, which provide a better estimate. As we stated in our SSMD,⁴⁷ the yield on the UK AAA corporate bond index may not be appropriate given: the inclusion of securitised bonds; the inclusion of financial sector bonds; a lack of liquidity in the underlying securities; and the inclusion of an inflation risk premium in nominal bond yields.
- 3.14 The consultancy reports from Oxera and NERA are both dated June 2021, and both suggest the use of an AAA corporate bond rate. However, neither report overcomes the issues we identified in our SSMD (as summarised in the previous paragraph). Further, neither report addresses the CMA's Final Determinations (published in October 2021) in the RIIO-GD&T2 price control appeals, that "GEMA's methodology for estimating the RFR, specifically its reliance on UK ILGs, was not wrong".⁴⁸

⁴⁷ RIIO-ED2 SSMD Finance Annex, Page 21, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=21

⁴⁸ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 67, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=67

- 3.15 By contrast, Frontier's report⁴⁹ for WPD (dated 16 Nov 2021) takes into account the CMA's findings and suggests an RFR range of -1.61% to -0.65%. See Appendix 3 for our detailed comments on the Oxaera, NERA and Frontier reports.
- 3.16 It is now clear that there will be changes to the definition of RPI gilts in February 2030.^{50,51} In light of this change, we are considering how best to estimate the RPI-CPIH wedge used to convert RPI index-linked gilts to CPIH terms. We have included two options within the WACC allowance model: one which uses a wedge measured over a single year (OBR's 5th year ahead) and one which is based on 20 years of inflation forecasts (a 20-year geometric wedge, which uses 5 years of OBR forecasts combined with assumptions for the following 15 years), which captures the convergence of RPI and CPIH. The WACC allowance in these Draft Determinations currently uses the first approach.
- 3.17 See the consultation question below for specific cell references to the WACC allowance model. The model shows that a single year approach suggests an RPI-CPI wedge of 0.7% whereas a 20-year forecast approach suggests an RPI-CPIH wedge of 0.2% to 0.3%, which suggests an impact on the allowed return on equity of approximately 0.1%.
- 3.18 In our SSMD,⁵² we decided to implement an equity indexation approach as per the GD&T sectors and we note that Business Plans were silent on this.

Step 1 - Consultation question on risk-free rate and equity indexation

- FQ2. Do you have any views on the model to implement equity indexation that is published alongside this document, (the 'WACC Allowance Model - RIIO-ED2 30th April 2022 update Alternative Wedge')?
- FQ3. In light of the upcoming change to the definition of RPI in 2030, should the RPI-CPIH inflation wedge be based on: a) a single year (as shown in the WACC allowance model when: cell D2 is "year 5 forecast" and cell B5 is "01/04/2022"); or b) should it be based on 20 years of inflation forecasts (as

⁴⁹ Frontier Economics, Cost of Equity Assessment for RIIO-ED2, Page 25, <https://yourpowerfuture.westernpower.co.uk/downloads-view/41760#page=25>

⁵⁰ ONS Consultation on the Reform to Retail Prices Index Methodology, <https://consultations.ons.gov.uk/rpi/2020/>

⁵¹ ONS Response to the Consultation on the Reform to Retail Prices Index (RPI) Methodology, Page 26, <https://consultations.ons.gov.uk/rpi/2020/results/rpiconsultationresponse.pdf#page=26>

⁵² RIIO-ED2 SSMD Finance Annex, Page 22, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=22

shown in the WACC allowance model when: cell D2 is “20 year geometric” and cell B5 is “01/04/2031”)?

Total Market Returns (TMR)

Business Plan submissions

- 3.19 The submissions contained little discussion of the TMR assumption for RIIO-ED2.
- 3.20 WPD proposes a TMR range of 6.3% to 6.9%, which is consistent with the range proposed by WPD’s advisor, Frontier Economics, in a report dated November 2021,⁵³ and with Ofgem’s SSMD working assumption⁵⁴ of 6.5%.
- 3.21 SPEN refers to a TMR range of 6.73% to 7.46%, consistent with NERA’s advice dated June 2021. UKPN estimates a range of 6.81% to 7.46%. SSEN, ENWL and NPg refer to a TMR range of 7.0% to 7.5% based on advice from Oxera dated June 2021.

Consultation position: Step 1 Ofgem view on TMR

- 3.22 Our Draft Determinations consultation position for TMR is shown in the following table.

Allowance parameter	Consultation position
Total Market Return	TMR range of 6.25% to 6.75% with a mid-point of 6.5%

Rationale for consultation position

- 3.23 In the July 2018 Framework Decision,⁵⁵ we decided that we would “estimate the expected market return by considering the historical long-run average of market returns as the best objective estimate of investors’ expectations of the future.”⁵⁶
- 3.24 In our SSMD, we explained that the TMR should not vary by sector and suggested a working assumption of 6.5%.⁵⁷ Since then, we have not received evidence that

⁵³ Frontier Economics, Cost of Equity Assessment for RIIO-ED2, Page 25, <https://yourpowerfuture.westernpower.co.uk/downloads-view/41760#page=25>

⁵⁴ ED2 SSMD Finance Annex, Page 34, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=34

⁵⁵ RIIO-2 Framework Decision, Page 56, https://www.ofgem.gov.uk/sites/default/files/docs/2018/07/riio-2_july_decision_document_final_300718.pdf#page=56

⁵⁶ RIIO-2 Framework Decision, page 56, *ibid*.

⁵⁷ RIIO-ED2 SSMD Finance Annex, Page 24, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=24

leads us to believe that we should change our approach to TMR analysis or to move away from an assumption of 6.5%. We therefore continue to believe that our approach to TMR is appropriate for RIIO-ED2 and note that it is consistent with the approach we took for RIIO-GD&T2.

- 3.25 However, it may be beneficial to re-consider the degree of weight we attribute to outturn averages. We accept that outturn averages are objective and stable, but this does not mean outturn averages are necessarily accurate reflections of current expectations, or optimal from a policy standpoint. There may be evidence, such as the cross-checks we explore in Step 2 below, which suggests that current expectations are materially lower than outturn averages. We welcome stakeholders' views on this and ask a related consultation question on this below.
- 3.26 The consultancy reports from Oxera and NERA are both dated June 2021 and therefore do not address the CMA's Final Determinations (published in October 2021) in the RIIO-GD&T2 price control appeals, that "GEMA's point estimate of 6.5% (CPI-real) and its range of 6.25% to 6.75% were not wrong".⁵⁸
- 3.27 By contrast, Frontier's report⁵⁹ for WPD (dated 16 Nov 2021) reflects the CMA's findings in the RIIO-GD&T2 price control appeals, by suggesting a TMR range of 6.3% to 6.9%. See Appendix 3 below for our detailed comments on the Oxera, NERA and Frontier reports.
- 3.28 We note that our approach to RIIO-ED2 is consistent with the CMA's determination in the RIIO-GD&T2 appeals, which concluded that this approach to TMR was not wrong.⁶⁰ In our view, the DNOs' submissions for RIIO-ED2 do not identify a better approach than the one we have taken to date. We consider our approach is a reasonable one because it is objective and consistent with preceding price controls including RIIO-GD&T2. However, we remain open-minded to new evidence and request stakeholders provide their view in response to the consultation questions below.

⁵⁸ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 103, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=103

⁵⁹ Frontier Economics, Cost of Equity Assessment for RIIO-ED2, Page 25, <https://yourpowerfuture.westernpower.co.uk/downloads-view/41760#page=25>

⁶⁰ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 103, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=103

- 3.29 Given the rationale above, we propose a TMR mid-point of 6.5% CPIH for RIIO-ED2.

Step 1 - Consultation questions on TMR

- FQ4. Is there evidence that suggests we should change our approach to TMR for RIIO-ED2?
- FQ5. Can stakeholders confirm their view on the trade-off between: the objectivity of using outturn averages (even though the results may be materially higher or lower in future price controls than current TMR expectations); versus the benefits of putting more weight on current expectations (noting the evidence from cross-checks and the associated risk of subjectivity)?
- 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?

Notional equity beta and asset beta

Relevant background

- 3.30 For a reminder of the methods and techniques we use for estimating beta, which follow our approach used for RIIO-GD&T2, we refer stakeholders to the documents listed in the following three paragraphs, rather than repeat the same information in this document.
- 3.31 In the July 2020 Draft Determinations for RIIO-GD&T2, we published beta analysis for GB comparator stocks (SSE, National Grid plc (NG), Pennon (PNN), Severn Trent (SVT) and United Utilities (UU)).⁶¹ We showed how SSE had diverged from the other four stocks and explained that this reflected its distinct business profile. We estimated raw equity betas and asset betas (assuming a debt beta of 0.125), using both OLS⁶² and GARCH⁶³ techniques, before arriving on a notional equity beta of 0.72.⁶⁴ We also described our view on de-gearing and re-gearing⁶⁵ and debt beta.⁶⁶ We also provided further explanations in our May

⁶¹ RIIO-2 Draft Determinations Finance Annex, Page 39, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=39

⁶² Ordinary Least Squares (OLS) is a basic econometric technique designed for estimating the unknown parameters in a linear regression model.

⁶³ The generalised autoregressive conditional heteroscedasticity (GARCH) process is an advanced econometric approach developed in 1980s by Robert F. Engle.

⁶⁴ RIIO-2 Draft Determinations – Finance Annex, Page 48, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=48

⁶⁵ RIIO-2 Draft Determinations Finance Annex, Page 41, *ibid*.

⁶⁶ RIIO-2 Draft Determinations Finance Annex, Page 41, *ibid*.

2019 SSMD⁶⁷ including our approach to estimation windows and averaging periods.

3.32 In our RIIO-GD&T2 Final Determinations, we published updated beta analysis⁶⁸ including a consideration of the systematic risk differences between network sectors and between price controls. We published unlevered beta estimates⁶⁹ (assuming debt beta of zero) before concluding on a notional equity beta of 0.759.⁷⁰

3.33 In our RIIO-ED2 SSMD we said⁷¹:

"... we have not identified any argument, from the submissions by the ED companies or by any other party, which presented conclusive evidence that any energy subsector is higher or lower risk than another. At this stage in the ED2 price control, we do not see strong evidence to suggest that the ED sector faces higher systematic risk than GD or T or in favour of a higher beta for ED"

Business Plan submissions

3.34 WPD proposes an equity beta range of 0.76 to 0.82, consistent with the range proposed by its advisor, Frontier Economics, in a report dated November 2021.⁷² WPD's lower bound of 0.76 is very close to Ofgem's SSMD working assumption⁷³ of 0.7586 and is based exclusively on GB water companies.

3.35 UKPN refers to a range of 0.71 to 0.91, where 0.71 is based on GB water companies, before selecting the upper half (0.81 to 0.91) for its cost of equity range, to reflect advice from KPMG. SPEN refers to an equity beta range of 0.806 to 0.881, consistent with NERA's advice dated June 2021. SSEN, ENWL and NPg

⁶⁷ RIIO-ED2 SSMD Finance Annex, Page 152, https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=152

⁶⁸ RIIO-2 Final Determinations, page 42, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf#page=42

⁶⁹ Ibid

⁷⁰ RIIO-2 Final Determinations, page 49, *ibid*.

⁷¹ ED2 SSMD Finance Annex, page 30, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=30

⁷² Frontier Economics, Cost of Equity Assessment for RIIO-ED2, page 25, <https://yourpowerfuture.westernpower.co.uk/downloads-view/41760#page=25>

⁷³ RIIO-ED2 SSMD Finance Annex, Page 34, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=34

refer to an equity beta range of 0.85 to 0.93 based on advice from Oxera dated June 2021.

Updated analysis

- 3.36 The Business Plans we received in December 2021 do not provide materially different or new evidence on equity betas. For example, the DNOs' submissions generally focus on the same issues we considered previously, including: the best benchmark firms (National Grid plc, water networks, and/or European networks); and the best estimation techniques/periods.
- 3.37 In the absence of any materially different or new evidence from the DNOs, we believe it is beneficial to refer to a qualitative risk comparison between RIIO-ED2 and RIIO-GD&T2 as shown in Table 10 below.

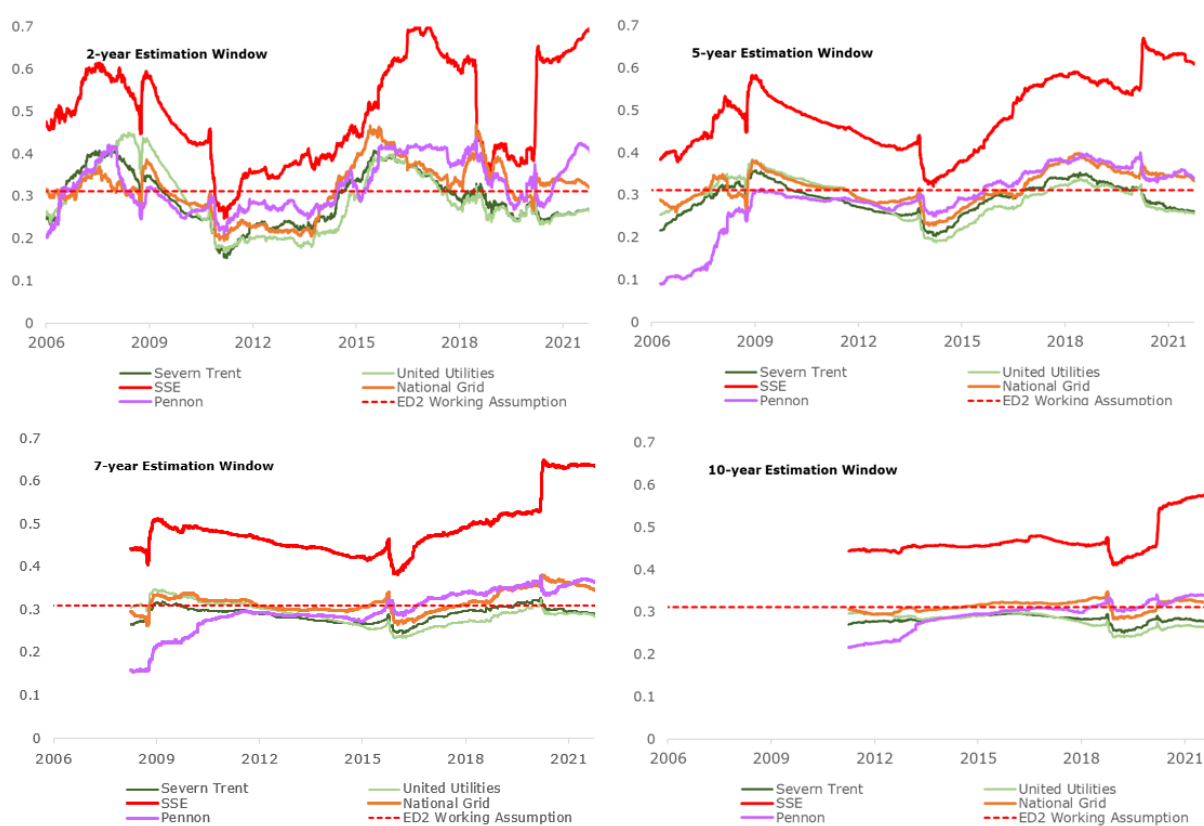
Table 10: Qualitative risk comparison between DNOs and other regulated energy networks in GB during respective RIIO-2 periods

DNOs may bear lower risk because...	DNOs may bear similar levels of risk because...	DNOs may bear higher levels of risk because...
... stranding risk could be lower for DNOs than the gas sectors	... public scrutiny, political interest and political risks are similar	... RoRE ranges appear larger for DNOs
... investments in distribution networks can be less lumpy, smaller and less complex than the transmission sectors	... investors do not appear to see material net differences	... Totex incentive rates are higher than in the transmission sectors
	... regulatory risks are very similar	... the scale of investment relative to RAV could be larger for DNOs
	... interest rate risk and inflation risk are virtually identical	

- 3.38 Table 10 reflects the latest information and is consistent with our proposals for RIIO-ED2, including RoRE ranges which are larger for DNOs than for the RIIO-GD&T2 networks. Table 10 reflects the arguments that may carry most credibility, although we recognise that there are legitimate arguments about whether these risks are necessarily systematic or beta risks at all. For example, it can be argued that the "scale of investment" is not systematic.

- 3.39 We seek stakeholder views on Table 10 and ask an associated question below. In particular, we welcome views on whether there is relevant quantitative evidence and whether there are other issues that are worthy of inclusion in any of the three columns of Table 10.
- 3.40 We also considered whether the beta analysis that we conducted for the RIIO-GD&T2 price controls would materially change when using more up to date information. Figure 2 below provides updated analysis, in a similar format to the July 2020 and December 2020 publications. We find no material change in the results relative to those that we used for RIIO-GD&T2 Final Determinations in December 2020.

Figure 2: Unlevered betas to 30 September 2021⁷⁴ (debt beta of zero)



Source: Ofgem analysis of Bloomberg share price movements

⁷⁴ We use a September cut-off as this is the most recent date for debt information. We also ran analysis to April 2022 using provisional debt information and found similar results. Thus, Figure 2 is not sensitive to an extra 7 months of information.

3.41 Given the results in Table 10 and Figure 2, we see no material basis for a change in the view we expressed in our RIIO-ED2 SSMD, or the values shown in Table 11 below.

Table 11: Unlevered beta, asset beta and notional equity beta range

Component	Low	Mid	High	Ref	Source
Observed gearing ⁷⁵	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)

Source: Ofgem analysis

Consultation position: Step 1 Ofgem view on beta

Allowance parameter	Consultation position
Unlevered beta and notional equity beta	Unlevered beta range of 0.285 to 0.335 and a notional equity beta range of 0.694 to 0.819, as shown in Table 11

Rationale for consultation position

3.42 There is general agreement among network companies that National Grid plc is a suitable proxy for the systematic risk of GB electricity distribution networks.⁷⁶ Figure 2 shows that an unlevered beta assumption of 0.311 remains in line with most beta estimates for National Grid plc. We are not persuaded to adopt a different value than 0.311 for the systematic risk of RIIO-ED2, based solely on the analysis of National Grid plc, for the following reasons. Firstly, a large proportion of National Grid plc's business is based in the United States, rather than in Great Britain. Secondly, National Grid plc has only recently gained an exposure to ED assets in GB via its acquisition of WPD. Thirdly, we are conscious that systematic risk may be changing over time and that no one reference period (long-run average or recent values) and that no one estimation technique (OLS or GARCH) will perfectly reflect the systematic risk of RIIO-ED2.

⁷⁵ See Table 31. On a ten-year estimation window, and excluding SSE, average gearing for the other four companies is 48% or 50%. Similarly, on a five-year estimation window, we observe values of 48% and 52%.

⁷⁶ See, for example, Appendix 3 where consultancy reports 1, 2 and 3 use National Grid as the basis for proposed beta ranges.

- 3.43 We note that both WPD and UKPN use water company information to inform their views on beta, and we found this to be helpful. It remains our view that GB water companies provide a good proxy for the systematic risk of GB energy networks, including electricity distribution networks, because the regulatory regimes are very similar.
- 3.44 By contrast, SPEN, SSEN, ENWL and NPg, put no weight on water company betas. We also note the CMA's finding in the RIIO-GD&T2 appeals, that it was not wrong to put some weight on water company betas.⁷⁷ For similar reasons we believe it is appropriate to put some weight on water company betas when estimating the risk of the ED sector, given the similarities between ED, GD&T and water networks. In addition, Figure 2 shows that an unlevered beta of 0.311 is typically higher than beta estimates for GB water companies, UU and SVT. However, we are not currently persuaded to adopt a different value than 0.311 for the systematic risk of ED2 based solely on the analysis of water networks because it is not clear what the net impact is, as there are lots of similarities (eg regulatory regimes and political risks) but also some differences (eg we noted in the RIIO-GD&T2 Draft Determinations various reasons why energy networks may bear lower systematic risk than water networks⁷⁸).
- 3.45 We are not convinced that putting weight on European firms' beta estimates would improve the reliability of the resulting beta estimates because European firms can be exposed to different risks, such as unregulated businesses, and different regulatory and political risks, than a pure-play GB energy network. Again, we note that the CMA's findings in the RIIO-GD&T2 appeals are consistent with our proposals for RIIO-ED2, that it is not wrong to exclude European energy networks betas.⁷⁹
- 3.46 We note that the consultancy reports from Oxera and NERA are both dated June 2021 and therefore do not address the CMA's Final Determinations (published in October 2021) in the RIIO-GD&T2 price control appeals that "GEMA was not

⁷⁷ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, See for example, Paragraphs 5.362 and 5.368,
https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=122

⁷⁸ RIIO-2 Draft Determinations Finance Annex, Page 51,
https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=51

⁷⁹ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, see for example, Paragraphs 5.393 and 5.394,
https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=187

wrong in determining the beta estimates as part of the RIIO-2 price controls”.⁸⁰

In addition, these reports largely repeat the same arguments that we and/or CMA had considered previously (see Appendix 3 for further detail).

- 3.47 Compared with Oxera and NERA’s reports, the Frontier report (dated November 2021) is better aligned with the position we expressed in our SSMD and with the CMA’s Final Determinations in the RIIO-GD&T2 appeals. However, Frontier’s report is not aligned in all respects: for example, Frontier excludes Global Financial Crisis (GFC) periods when estimating betas. By contrast, we continue to believe that inclusion of such periods is valuable for capturing systematic risk (we note that the CMA also considered this issue in the RIIO-GD&T2 appeals⁸¹ and concluded that the GFC is fundamentally an example of systematic risk).
- 3.48 The consultancy report from KPMG (November 2021) appears to contain two major weaknesses that were already considered during the RIIO-GD&T2 appeals: the use of SSE as a proxy and the use of shorter periods (ie small samples of data such as 2 years) for beta estimation. We do not believe SSE is a good proxy for the systematic risk of a pure-play energy network because of its involvement in unregulated business. We also do not believe short periods (ie small samples of data such as 2 years) are necessarily good indicators of long-run systematic risk.
- 3.49 See Appendix 3 below for our detailed comments on the Oxera, NERA, Frontier and KPMG reports.

Step 1 - Consultation questions on beta

- 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?
- FQ8. What are your views on the relative risk comparison shown in Table 10?
- 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?

⁸⁰ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, page 187, *ibid*.

⁸¹ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Paragraph 5.493, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=159

Step 1 - CAPM-implied cost of equity at 60% notional gearing

3.50 Table 12 summarises the CAPM evidence as per the preceding sections.

Table 12: Step 1, CAPM-implied cost of equity at 60% notional gearing

Component	Low	Mid	High	Ref	Source
Risk-free rate	-0.74%	-0.74%	-0.74%	A	Table 9
Notional Equity beta	0.694	0.759	0.819	B	Table 11
Total Market Return	6.25%	6.50%	6.75%	C	Paragraph 3.22
CAPM-implied cost of equity	4.1%	4.75%	5.4%	D	$D = A + B * (C - A)$

Source: Ofgem analysis

Step 2 – Cross-checking the CAPM-implied cost of equity**Business Plan submissions**

3.51 Business Plan submissions provided no material new evidence on cross-checks.

3.52 SSEN refers to Oxera analysis dated March 2019⁸² and June 2021⁸³ and suggests that no reliance can be placed on Market to Asset Ratios (MARs). SSEN also suggests that: no conclusion can reliably be drawn on the WPD transaction with National Grid; and that Offshore Transmission Owner (OFTO) returns increase significantly when including a terminal value in valuation models.

3.53 ENWL agrees that CAPM should be cross-checked but raises concerns with Ofgem's analysis. For example, ENWL suggests that estimates of the cost of equity from MAR data are uncertain because these are forward looking. NPg refers to Oxera's June 2021 report, while suggesting that the cross-checks Ofgem has used are flawed. For example, NPg suggests that cross-checks based on water company traded values do not give reliable estimates because these companies are all regarded as top performers.

3.54 SPEN agrees it is prudent to cross-check the CAPM-implied cost of equity and suggests placing weight on Oxera's Asset Risk Premium (ARP) Debt Risk Premium

⁸² Oxera Review of RIIO-2 finance issues,
<https://www.northerngasnetworks.co.uk/wp-content/uploads/2020/09/Oxera-2019-Review-of-RIIO-2-finance-issues-Rates-of-return-used-by-investment-managers-6-March.pdf>

⁸³ Oxera The cost of equity for RIIO-ED2,
https://ed2plan.northernpowergrid.com/sites/default/files/document-library/Oxera_study_The_cost_of_equity_for_RIIOED2.pdf

(DRP) cross-check. SPEN suggests Ofgem's cross-checks do not provide a reliable basis to inform the cost of equity: for example, SPEN suggests that there is no cogent evidence that MARs differ from 1. SPEN refers to NERA's conclusion (from NERA's June 2021 report) that MAR evidence is not a reliable method for cross-checking the cost of equity, given the magnitude and uncertainty of the required adjustments. SPEN argues that OFTO internal rates of return (IRRs) are unreliable comparator as OFTOs are a lower risk asset.

- 3.55 UKPN refers to Oxera's June 2021 report, which suggests that Ofgem's MAR analysis does not take into account all of the relevant market factors, eg scale of non-regulated activities. WPD does not refer to Ofgem's proposed Step 2 cross-checks.

Updated analysis

Modigliani-Miller cost of equity inference, WACC cross-check and beta re-gearing impact

- 3.56 In our RIIO-GD&T2 Draft Determinations, we explained the background and rationale for this cross-check.⁸⁴ We explained that two comparator companies, UU and PNN, have actual gearing levels close to 60% (see Table 31) and hence provide an opportunity to cross-check the overall WACC estimate without material exposure to de-gearing and re-gearing assumptions.
- 3.57 Table 13 shows updated estimates of the actual cost of capital using actual gearing levels, for each of the five comparator companies.

Table 13: WACC inference at observed gearing levels

Estimation window	Averaging period	Debt valuation method	SSE	NG	PNN	SVT	UU
5-year	Spot	Market value	4.1%	2.3%	2.2%	1.8%	1.9%
10-year	Spot	Market value	3.8%	2.2%	2.3%	1.9%	1.9%

Source: Ofgem analysis. For example, SSE's WACC of 4.1% is derived using: a spot cost of debt as of 30 September 2021 (0.73%); a cost of equity of 6.2% from Appendix 4, Table 30; and gearing of 38% from Appendix 4, Table 31 as follows: $0.73\% \times 38\% + 6.2\% \times (1-38\%)$

⁸⁴ RIIO-2 Draft Determinations Finance Annex, Page 53, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=53

3.58 These WACC estimates are used to derive a cost of equity at 60% gearing, using an assumption that the WACC does not vary with gearing, in line with the Modigliani-Millar theory.⁸⁵ The results are shown in Table 14.

Table 14: Cost of equity inference at 60% gearing based on flat WACC hypothesis

Estimation window	Averaging period	Debt valuation method	SSE	NG	PNN	SVT	UU
5-year	Spot	Market value	9.1%	4.6%	4.5%	3.4%	3.5%
10-year	Spot	Market value	8.5%	4.4%	4.7%	3.8%	3.8%

Source: Ofgem analysis. For example, SSE's 9.1% derived using values from Table 13 and a spot cost of debt as of 30 September 2021 (0.73%) as follows: $(4.1\% - 60\% \times 0.73\%) / (1 - 60\%)$

3.59 The inference for all companies, aside from SSE, is that the cost of equity at 60% gearing ranges from 3.4% to 4.7%. This aligns with our July 2020 Draft Determinations for GD&T2 (3.2% to 4.1%).⁸⁶

Market to Asset Ratios (MARs)

3.60 In our RIIO-2 framework decision,⁸⁷ we decided to use MARs to cross-check the CAPM results. In our RIIO-GD&T2 Draft Determinations,⁸⁸ we showed how we could use MARs to infer both a cost of equity and expected performance.

3.61 In our RIIO-ED2 SSMD,⁸⁹ we stated our view that the RIIO-GD&T2 Final Determinations adequately address the issues raised by Oxera. We also decided that the same data for regulated UK network companies can be applied to ED as well as GD&T because there is no reason to think that water company MAR data is any more or less applicable to ED than to GD or T.⁹⁰

⁸⁵ 'The Cost of Capital, Corporation Finance and the Theory of Investment', <https://www.jstor.org/stable/1809766?seq=1>

⁸⁶ RIIO-2 Draft Determinations Finance Annex, Page 55, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=55

⁸⁷ RIIO-2 Framework Decision, Page 6, https://www.ofgem.gov.uk/sites/default/files/docs/2018/07/riio-2_july_decision_document_final_300718.pdf#page=6

⁸⁸ RIIO-2 Draft Determinations Finance Annex, Page 57, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=57

⁸⁹ RIIO-ED2 SSMD Finance Annex, Page 31, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=31

⁹⁰ RIIO-ED2 SSMD Finance Annex, Page 31, *ibid*.

- 3.62 The CMA's Final Determinations for the GD&T appeals state⁹¹: "we [CMA] disagreed with the appellants that little to no inference could be taken from MAR premiums, and concluded that GEMA was not wrong to use MAR evidence as a cross-check to its cost of equity estimate. We also agreed with GEMA's assessment that the MAR evidence available suggests that GEMA's allowed return on equity is not too low."
- 3.63 We now refer to additional MAR estimates in Table 15 below. These are particularly helpful for RIIO-ED2 Draft Determinations because: one transaction (WPD) relates to ED network assets; three transactions (WPD, SGN and NGGT) are in the energy sector, and occur after the RIIO-GD&T2 Final Determinations were published in December 2020; and one transaction (NGGT) occurs in February 2022, after the CMA's Final Determinations on the GD&T2 appeals were published in October 2021. Accordingly, investors in these transactions benefit from a clearer understanding of allowed returns, and the costs of capital, than investors in other transactions which occurred prior to December 2020.

Table 15: Notable MAR transactions since December 2020

Transaction	MAR estimate	Source	Date reference
Western Power Distribution	1.61	National Grid	Mar 2021
Bristol Water	1.44	Pennon	Jun 2021
SGN	1.35	JP Morgan	Aug 2021
National Grid Gas Transmission	c.1.30	Investec	Feb 2022

Source: Ofgem analysis

- 3.64 In addition to the model we published in July 2020 alongside the RIIO-GD&T2 Draft Determinations⁹², we now provide another inference model. The results of this new analysis are summarised in Table 16 below, based on the algebraic manipulations and assumptions shown in Appendix 6.

⁹¹ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 229, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=229

⁹² See 'Technical Annexes - 1' and the file 'Draft Determinations - Simple MAR Application Model.xlsx' <https://www.ofgem.gov.uk/publications/riio-2-draft-determinations-transmission-gas-distribution-and-electricity-system-operator>

Table 16: Equity inferences from MAR transactions

Component	WPD	Bristol	SGN	NGGT	Formula
Baseline allowed return on equity	4.65%	4.09%	4.55%	4.55%	A
Expected Outperformance	2.00%	1.00%	1.00%	1.00%	B
Return on equity - real	6.65%	5.09%	5.55%	5.55%	C = A+B
CPIH	2.00%	2.00%	2.00%	2.00%	D
Return on equity - nominal	8.65%	7.09%	7.55%	7.55%	E = D+C
RAV growth (real)	2.00%	2.00%	2.00%	0.00%	F
RAV growth (nominal)	4.00%	4.00%	4.00%	2.00%	G = F+D
Dividend pay-out ratio	70%	61%	64%	100%	H = 1 - F/C
Dividends paid	4.65%	3.09%	3.55%	5.55%	I = H * C
Market to Asset Ratio (MAR)	1.61	1.44	1.35	1.30	J
Notional Gearing	60%	60%	60%	60%	K
Equity Multiple	2.53	2.10	1.88	1.75	L = (J-K) / (1-K)
Cost of equity (real)	3.8%	3.5%	3.9%	3.2%	M= I/L + C - I

Source: Ofgem analysis using hypothetical assumptions to derive a cost of equity

- 3.65 Table 16 demonstrates that the cost of equity must be less than 3.9% for the observed MAR values to be logically consistent with the other values shown. This 3.9% cost of equity is based on (an assumption of) 1% expected outperformance for SGN. However, we arrive at a similar inference for WPD's cost of equity (3.8%) when we use 2% for expected outperformance. Given the observed MAR of 1.61 for WPD, a cost of equity of more than 3.8% would require expected outperformance of more than 2%. For example, given the observed MAR of 1.61 for WPD, a cost of equity of 4.75% is consistent with expected outperformance of 4.3%. However, our view is that expected outperformance of 4.3% in perpetuity is implausibly high. We therefore conclude, based on this inference technique and these transactions, that the cost of equity is, in all likelihood, lower than 4.75%.
- 3.66 We have considered SSEN's argument that no conclusion can reliably be drawn on the WPD transaction with National Grid. However, our view is that, if we make reasonable assumptions for other variables that could impact a transaction value, such as for growth and for outperformance, we can gain valuable insight on the cost of equity.
- 3.67 We considered ENWL's argument that there is uncertainty in the link between equity returns and MARs. However, while we can agree that there is some uncertainty, that is not, in our view, a good reason to ignore or discard MAR evidence. ENWL's observation that the uncertainty arises because of the use of

forward-looking assumptions, is, in our view, an advantage of MAR data, rather than a drawback, because we want to know the latest information on forward looking costs even if this differs materially from historical information.

- 3.68 We have considered SPEN's argument that there is no cogent evidence that MARs differ from 1, after adjustments. However, our view is that most MARs differ materially from 1, and we have not seen reasonable adjustments which demonstrate that most MARs are 1. Further, in response to SPEN's reference to NERA's conclusion that MAR evidence is not reliable given the magnitude and uncertainty of the adjustments, our view is that MAR adjustments are not sufficiently large or uncertain to rob MARs of all probative value.
- 3.69 NPg contends that cross-checks based on listed water companies may not be representative. However, we note that the MAR cross-check is based on both listed and private company transactions, as well as for water and energy networks. Our analysis suggests a large degree of consistency between listed and unlisted transactions, and between water and energy transactions.
- 3.70 We have considered UKPN's argument that Ofgem's MAR analysis does not take into account all of the relevant factors (eg scale of non-regulated activities). However, our view is that the full body of MARs evidence is not sensitive to non-regulated activities because the analysis is designed to reflect only the regulated activities and there seems to be agreement that non-regulated activities are not a material factor in that analysis.

Investor bids for OFTOs

- 3.71 We previously referred to OFTO bids in December 2018⁹³, May 2019⁹⁴ and July 2020⁹⁵ where we used OFTO bids to derive the average implied equity IRR (nominal, post tax). We acknowledge that there are risk differences between DNOs and OFTOs. OFTOs are not subject to cyclical price controls (such as RIIO-ED2) that apply to the onshore electricity distribution assets. However, we believe that this cross-check is valuable because it relates to electricity network

⁹³ RIIO-2 Sector Specific Methodology Annex: Finance, Page 46, https://www.ofgem.gov.uk/sites/default/files/docs/2018/12/riio-2_finance_annex.pdf#page=46

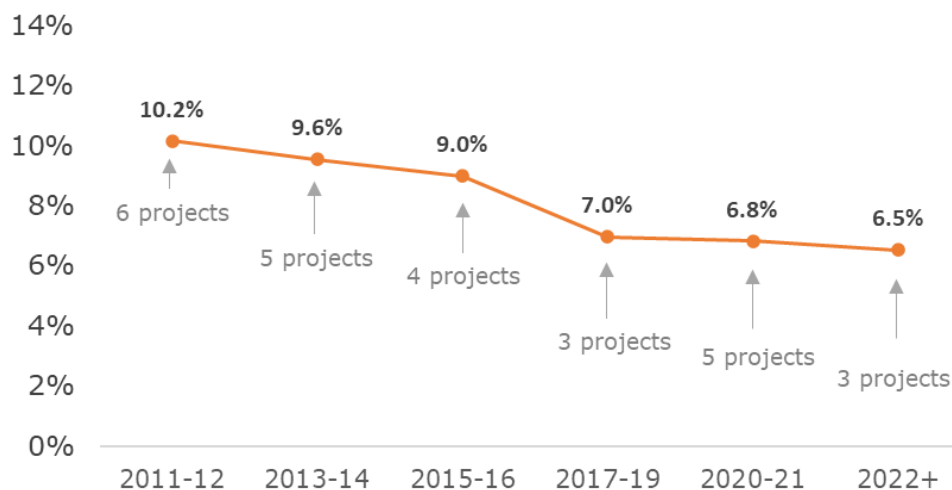
⁹⁴ RIIO-ED2 SSMD Finance Annex, Pages 62 and 162, https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=62 and https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=162

⁹⁵ RIIO-2 Draft Determinations Finance Annex, Page 59, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=59

assets, where Ofgem issues and modifies licences, as it does for the electricity distribution sector.

3.72 We now provide updated data on OFTO-implied IRRs in Figure 3 below.

Figure 3: OFTOs – average nominal post-tax equity IRR (weighted by project transfer value)⁹⁶



Source: Ofgem analysis

3.73 SSER argues that OFTO returns increase significantly when including a Terminal Value Assumption (TVA).⁹⁷ We agree that TVAs could impact OFTO returns.

However, we do not believe that all OFTO bids have unreliable TVAs, as would need to be the case for all OFTO bids, or the resulting equity IRRs, to be biased because of TVAs. Further, all bidders are exposed to competitive pressures, and we therefore see no rationale for all bidders to have biased TVAs.

3.74 SPEN argues that OFTO-implied IRRs are unreliable as OFTOs are a lower risk asset. However, our view is that there may be lower operational/asset risk but there may also be much higher financial risk given OFTO gearing levels of 80-90%.

3.75 Since receiving RIIO-ED2 Business Plans in December 2021, we have conducted further analysis of OFTO IRRs to make them more comparable with a cost of equity at 60% notional gearing. We refer stakeholders to Appendix 5 where we

⁹⁶ Chart now updated since July 2020 GD&T2 Draft Determinations such that the fifth data point reflects financial close and is now displayed as 6.8% rather than 7.0%. The sixth data point includes projects for which there is a preferred bidder, but which have not yet reached financial close.

⁹⁷ A terminal value assumption is the estimated value of a business beyond the explicit forecast period.

derive a 3.1% cost of equity at 60% notional gearing. We welcome views on this and ask a consultation question on this below.

Investment managers' forecasts

3.76 We previously referred to these forecasts in December 2018,⁹⁸ May 2019⁹⁹ and July 2020.¹⁰⁰ We explained in the RIIO-GD&T2 Draft Determinations how this information can cross-check both TMR and the cost of equity. We noted potential limitations and our interest in the level and the changes over time.

3.77 Table 17 below provides recent forecasts from the same sources.

Table 17: Professional forecasts of TMR (nominal terms)

May 2020					Updated: Feb 2022				
Author	Date	Scope	Horizon	Nominal	Date	Scope	Horizon	Nominal	Change
Schroders	Dec-19	UK	10	4.90%	Dec-21	UK	10	6.90%	+2.00%
Blackrock	Dec-19	UK	10	5.70%	Sep-21	UK	10	7.20%	+1.50%
Old Mutual	Dec-19	UK	L Term	7.52%	Sep-21	UK	L Term	7.14%	-0.38%
Nutmeg	Sep-17	UK	10+	7.80%	Sep-17	UK	10+	7.80%	0.00%
FCA	Sep-17	UK	10-15	7.60%	Sep-17	UK	10-15	7.60%	0.00%
Aon Hewitt	Sep-19	UK	10	7.70%	Jun-21	UK	10	7.50%	-0.20%
Redacted author	Nov-18	UK	10	7.19%	Nov-18	UK	10	7.19%	0.00%
Aberdeen	Dec-19	UK	10	8.60%	Feb-22	UK	10	7.70%	-0.90%
JP Morgan	Sep-19	UK	L Term	6.90%	Jan-22	UK	L Term	4.97%	-1.93%
Willis T W	Dec-18	UK	10	5.24%	Dec-18	UK	10	5.24%	0.00%
Vanguard	Dec-19	UK	10	5.00%	Feb-22	UK	10	6.60%	+1.60%
Mean				6.74%				6.90%	+0.15%
Mean (excluding WTW and Vanguard)				7.10%				7.11%	+0.01%
Median				7.19%				7.19%	+0.00%

Source: Ofgem analysis, published forecasts and discussions with publishers

⁹⁸ RIIO-2 Sector Specific Methodology Annex: Finance, Page 29, https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_finance_annex.pdf#page=29

⁹⁹ RIIO-ED2 SSMD Finance Annex, Page 39, https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=39

¹⁰⁰ RIIO-2 Draft Determinations Finance Annex, Page 61, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=61

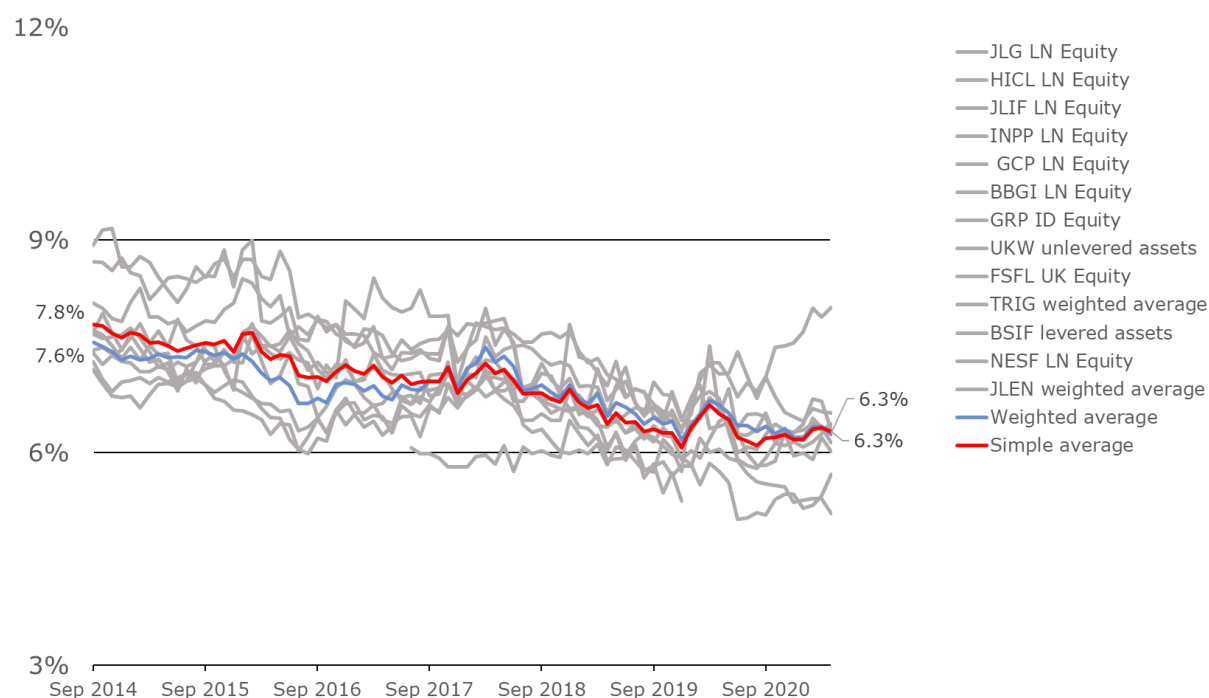
3.78 Based on Table 17, we continue to draw a very similar interpretation from this cross-check to the interpretation we had in July 2020, given the stable values for the mean and the median, which is that this evidence suggests the cost of equity could be lower than our Step 1 conclusion.

Infrastructure funds: discount rates, NAV premiums and implied Internal Rates of Return

3.79 We explained and analysed this cross-check in December 2018,¹⁰¹ May 2019¹⁰² and July 2020.¹⁰³ We noted different asset and risk characteristics between the individual funds and between the average funds and energy networks. We explained the data sources and the calculation approach alongside the basic assumptions for the analysis.

3.80 We now provide updated analysis in Figure 4 below.

Figure 4: Infrastructure fund implied equity IRRs (nominal terms)



Source: Ofgem analysis of Bloomberg and published accounts

¹⁰¹ RIIO-2 Sector Specific Methodology Finance Annex, Page 47, https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_finance_annex.pdf#page=47

¹⁰² RIIO-2 SSMD Finance Annex, Page 150, https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_finance.pdf#page=150

¹⁰³ RIIO-2 Draft Determinations, Page 62, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_finance.pdf#page=62

3.81 Figure 4 shows a jump during the COVID-19 period around March 2020 followed by a fall towards the 6% level. Overall, this cross-check indicates no material change between 2019 and 2021. Therefore, we continue to draw a similar interpretation for RIIO-ED2 purposes to the interpretation we had in July 2020, that the real cost of equity for the average fund could be lower than our Step 1 conclusion.

Summary interpretation of cross-checks

3.82 Table 18 presents a summary of cross-check evidence.

Table 18: Summary evidence on cross-checks

Cross-check	Nominal	CPIH-real	Source
Modigliani-Miller cost of equity inference (WACC cross-check)	5.5% to 6.8%	3.4% to 4.7%	Real values as per Table 14 for NG, PNN, SVT and UU. Nominal values derived using 2% CPIH assumption, for example: $(1+3.4\%) * (1+2\%) - 1 = 5.5\%$
MAR-implied cost of equity	5.3% to 6.0%	3.2% to 3.9%	Real values as per Table 16. Nominal values derived using 2% CPIH assumption
Unadjusted OFTO implied equity IRR	6.5%	4.4%	Nominal value as per Figure 3 CPIH-real derived using 2% CPIH assumption. $(1+6.5\%) / (1+2\%) - 1 = 4.4\%$
Adjusted OFTO implied cost of equity	5.2%	3.1%	Real value derived in Appendix 5. Nominal value derived using 2% CPIH assumption
Unadjusted investment managers' (TMR) cost of equity	7.2%	5.1%	Nominal value as per Table 17. Real derived using 2% CPIH assumption.
Unadjusted infrastructure fund implied equity IRR	6.3%	4.2%	Nominal value as displayed in Figure 4. Real derived using 2% CPIH assumption.
CAPM with 0.9 equity beta and investment managers' TMR	6.6%	4.5%	Real value calculated using risk-free rate of -0.74% and real TMR of 5.1%. Nominal value derived using 2% CPIH assumption.

Source: Ofgem analysis

Consultation position: Step 2 cross-check implied cost of equity at 60% notional gearing

Allowance parameter	Consultation position
Step 2 cross-check implied cost of equity at 60% notional gearing	Cross-checks provide greater support for the lower half of the CAPM-implied range from Step 1.

3.83 In our view, cross-checks support values in the lower half of the CAPM range. However, for consistency with our decision in the RIIO-GD&T2 Final Determinations and because no cross-check is perfect, we do not propose to modify the cost of equity to reflect step 2 evidence. We welcome views from stakeholders on this and therefore ask a consultation question on this below.

Rationale for consultation position

- 3.84 Our cross-checks give us confidence that the CAPM results are not too low, although we do not adjust the results from step 1 because we are mindful that no cross-check is perfect, and we are confident that CAPM should remain the primary model.
- 3.85 We highlight that only two cross-check results are above 4.75% (the CAPM mid-point shown in Table 12 above). In both cases these are 'unadjusted' cross-checks that are potentially upwardly biased for the following reasons.
- 3.86 Firstly, the investment managers' TMR is upwardly biased because it assumes an equity beta of 1 – which we do not believe is plausible for notional DNOs. When we adjust the investment managers' TMR for a slightly lower beta of 0.9, we arrive at a value of 4.5% (ie we find it relatively easy to arrive at a value below 4.75% when taking systematic risk into account).
- 3.87 Secondly, the unadjusted OFTO cross-check embeds gearing levels of 80% to 90%, which is materially higher than notional gearing of 60%: when we adjust OFTOs to 60% notional gearing, we arrive at a value of 3.1% (ie again we find it relatively easy to arrive at a value below the CAPM mid-point of 4.75%).
- 3.88 Therefore, we will continue to monitor these cross-checks and will evaluate stakeholder feedback on whether there is a growing body of evidence which suggests our CAPM results are too high.

- 3.89 We draw confidence from the WPD transaction because it relates to RIIO-ED2 assets and the buyer (National Grid plc) was very well informed on cost and allowance issues.
- 3.90 We also take confidence that the CMA considered Ofgem’s analysis and interpretation of these cross-checks in the RIIO-GD&T2 appeals and found that Ofgem was not wrong.¹⁰⁴
- 3.91 We also note that RIIO-ED2 Business Plans do not propose superior cross-checks, in our view. We do not believe that the ARP-DRP results, as suggested by SPEN for example, is a valuable cross-check because it relies on regulatory precedents rather than contemporaneous market data.

Step 2 - implied cost of equity consultation questions

- 3.92 We seek feedback from stakeholders on the following questions.

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

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

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

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?

Step 3 – Selecting a baseline allowed return on equity

Business Plan submissions

- 3.93 SSEN refers to the CMA’s decision in the RIIO-GD&T2 appeals and states that an adjustment for expected outperformance is not appropriate and suggests that Ofgem should aim towards the top of the range to mitigate the risk of underinvestment.
- 3.94 ENWL believes an adjustment for expected outperformance is unnecessary and can only lead to disincentives to invest at a time when investment for net zero is critical. ENWL suggests that Ofgem should aim up to maximise societal welfare

¹⁰⁴ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 239, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=239

(the theory here is that the cost of over-funding is smaller than the cost of under-funding).

- 3.95 WPD disagrees with the proposed reduction of 25bps to the cost of equity allowance for future outperformance. WPD refers to CMA's decision in the RIIO-GD&T2 appeals that it was wrong to impose the 'Outperformance Wedge'.¹⁰⁵ WPD quotes the CMA's decision that "...GEMA has not demonstrated sufficiently why the extensive set of tools it used for RIIO-2 should be regarded as providing insufficient protection for customers".¹⁰⁶ WPD suggests that aiming up is an optimal regulatory response and common practice in UK regulatory regimes.
- 3.96 NPg does not think it is appropriate to reduce the cost of equity allowance by 25bps because: there is a longer track record on existing incentives which can be used to set challenging targets; reducing the cost of equity allowance is the wrong response; and because it creates a deadband in which there is no incentive to improve performance. NPg refers to the CMA's redetermination for PR19 to choose a point estimate 25bps above the middle of its range.
- 3.97 SPEN believes the 'Outperformance Wedge' is arbitrary, unprecedented, and based on a flawed conceptual and evidential basis. SPEN suggests that Ofgem should recognise the CMA's determination and remove the adjustment in its entirety from the RIIO-ED2 price control. SPEN suggests aiming up is necessary and desirable and refer to NERA's estimate that the 90th percentile is 32 bps above the mid-point.
- 3.98 UKPN agrees with the CMA that the application of the 'Outperformance Wedge' is inappropriate.

Updated analysis

- 3.99 We agree with the DNOs that CMA's finding on the RIIO-GD&T2 appeals is relevant and that the CMA decided adjusting for expected outperformance of 25 bps was wrong. However, we note that the CMA also decided that:

¹⁰⁵ RIIO-2 Energy Licence Modification Appeals, Page 7, https://assets.publishing.service.gov.uk/media/61791296d3bf7f55ff1fc099/Energy_appeals_-_Summary_of_final_determination_28.10.21.pdf#page=7

¹⁰⁶ RIIO-2 Energy Licence Modification Appeals, Page 7, https://assets.publishing.service.gov.uk/media/61791296d3bf7f55ff1fc099/Energy_appeals_-_Summary_of_final_determination_28.10.21.pdf#page=7

- the extent of operational outperformance, and the evidence on totex outperformance in previous energy price control periods, provided strong support for treating the scope for operational outperformance as an important risk area¹⁰⁷;
- regulators inevitably faced information asymmetries, and that those asymmetries can make the setting of appropriately stringent and robust price controls challenging¹⁰⁸; and
- it was appropriate, having defined and calibrated the totex and Output Delivery Incentives (ODI) arrangements, to step back and consider whether those arrangements overall could be expected to provide for an appropriately stringent and robust price control, and if not, to identify whether additional (and potentially novel) responses were appropriate.¹⁰⁹

3.100 On aiming up, the CMA found that RIIO-GD&T2 appellants offered no sufficiently persuasive evidence that regulators are required to aim up.¹¹⁰ The CMA also referred to this rationale:

- The CMA was presented with no evidence that GEMA was required to aim above the midpoint of their overall cost of equity range.¹¹¹
- GEMA's margin of appreciation will be at its greatest in situations such as this (ie when considering whether to aim up or not) as it is required to make an overall value judgement based upon a range of sometimes conflicting expert evidence in the context of a public policy decision.¹¹²
- GEMA considered cross-checks and the fact that some evidence would support a lower cost of equity.¹¹³

¹⁰⁷ CMA Final determination Volume 2B: Joined Grounds B, C and D, Page 49, https://assets.publishing.service.gov.uk/media/617fd07ce90e07197483b8a9/ELMA_Final_Determination_Vol.2_B.pdf#page=49

¹⁰⁸ CMA Final determination Volume 2B: Joined Grounds B, C and D, Page 51, https://assets.publishing.service.gov.uk/media/617fd07ce90e07197483b8a9/ELMA_Final_Determination_Vol.2_B.pdf#page=51

¹⁰⁹ CMA Final determination Volume 2B: Joined Grounds B, C and D, Page 71, https://assets.publishing.service.gov.uk/media/617fd07ce90e07197483b8a9/ELMA_Final_Determination_Vol.2_B.pdf#page=71

¹¹⁰ RIIO-2 Energy Licence Modification Appeals, October 2021, Page 5, https://assets.publishing.service.gov.uk/media/61791296d3bf7f55ff1fc099/Energy_appeals_-_Summary_of_final_determination_28.10.21.pdf#page=5

¹¹¹ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 307, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=307

¹¹² CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 309, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=309

¹¹³ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 309, *ibid*.

- GEMA referred to specific factors within the price control (such as the use of indexation and the implementation of uncertainty mechanisms (UMs) as factors which mitigate the historical arguments for 'aiming up').¹¹⁴

3.101 Our current view is that the rationale above, as per the CMA's Final Determinations on the RIIO-GD&T2 appeals, also applies to the ED2 sector. However, we recognise that RIIO-ED2 is a separate price control from RIIO-GD&T2 and that there may be sector-specific reasons to 'aim off' (either up or down) from the mid-point of the CAPM range. We therefore seek stakeholder views on this and ask a consultation question on this below.

Consultation position: Step 3 baseline allowed return on equity

Allowance parameter	Consultation position
Step 3 allowed return on equity	We propose a baseline allowed return on equity of 4.75% in line with our CAPM mid-point. We propose not to adjust for expected outperformance of 25 bps, as anticipated in our RIIO-ED2 SSMD.

3.102 Taking the above considerations in the round, we consider that the cost of equity falls within the 4.1% to 5.4% range, with a mid-point of 4.75%, at 60% notional gearing.

Rationale for consultation position

3.103 We believe the CMA's decisions for the RIIO-GD&T2 appeals are relevant considerations for these RIIO-ED2 Draft Determinations. We believe that it is helpful for RIIO-ED2 stakeholders to consider the CMA's view on all equity issues, including the cost of equity, cross checks, aiming up and expected outperformance, which is what we have done in reaching our proposals for RIIO-ED2. Our proposal not to adjust for expected outperformance in these RIIO-ED2 Draft Determinations reflects the CMA's decision on the same issue in the RIIO-GD&T2 appeals and we think RIIO-ED2 issues are very similar to those that applied to RIIO-GD&T2, and which were before the CMA.

3.104 Our Step 3 proposals for these RIIO-ED2 Draft Determinations are a change from our RIIO-ED2 SSMD and from the RIIO-GD&T2 Final Determinations, in both a quantitative and a qualitative/presentational sense. From a quantitative sense, we are proposing not to adjust downwards by 25bps to reflect expected

¹¹⁴ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Page 309, *ibid*.

outperformance. From a qualitative/presentational sense, we consider all aiming issues within Step 3, as we did for GD&T, but refer to this Step 3 in broader terms of 'selecting a baseline allowed return on equity'. Aside from these two changes, our equity methodology, and our approach to Steps, 1, 2 and 3, remains unchanged from RIIO-GD&T2. Step 3 focuses on what the allowed return on equity should be, whereas Steps 1 and 2 focus exclusively on what the cost of equity is, by using different estimation techniques to establish the true (but unobservable) cost.

3.105 Even though Step 3 does not have a quantitative impact on the allowed return, we remain of the view that it is important because:

- it allows for aiming issues to be explicitly considered;
- there is general agreement that the baseline allowed return on equity can differ from the cost of equity; and
- new evidence in respect of our Step 3 proposals may emerge in response to these RIIO-ED2 Draft Determinations.

3.106 We consider that the baseline allowed return on equity should be set in line with the Step 1 CAPM mid-point of 4.75% because we have not received strong evidence to suggest that we should aim away from that value.

Step 3 - allowed return on equity consultation questions

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

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

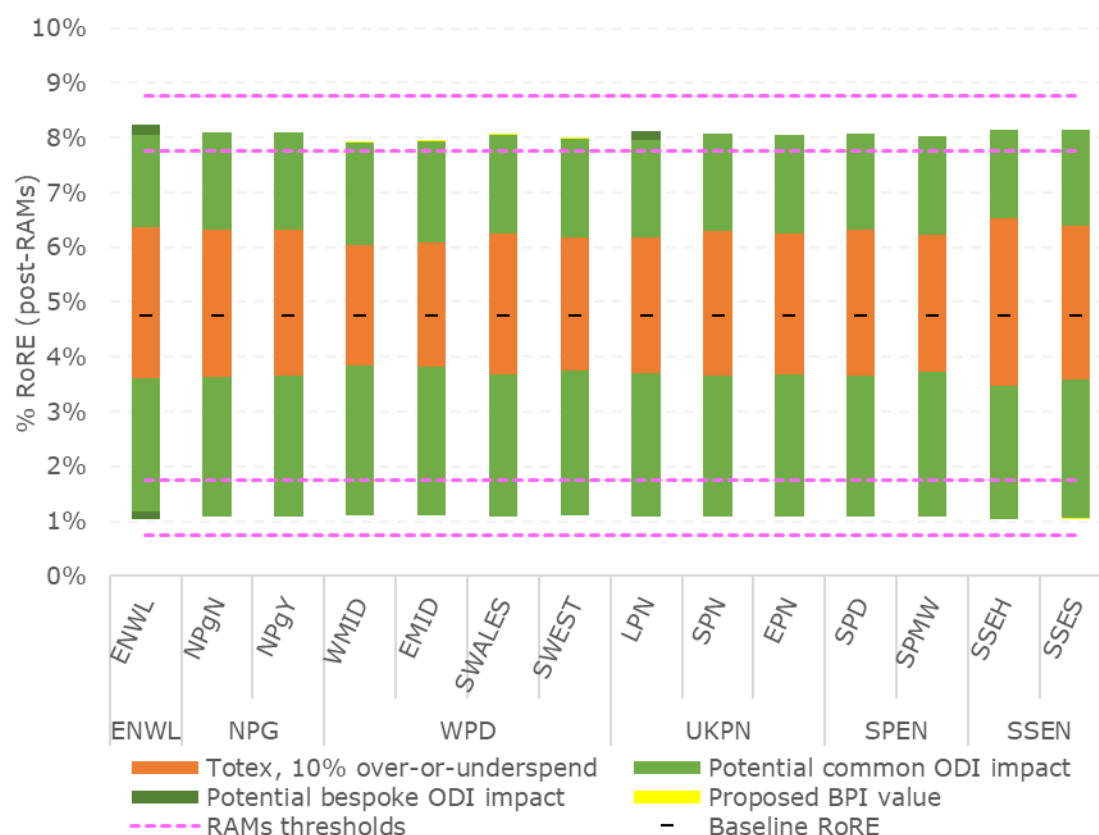
Return on Regulatory Equity (RoRE)

3.107 In this section, we present our view on the package of incentives for RIIO-ED2. Figure 5 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-2.

Figure 5: RIIO-ED2 ex ante RoRE ranges (Post RAMs)



Source: Ofgem analysis

3.108 We consider that our RIIO-2 price control package strikes an appropriate balance between scope for outperformance for high performing companies and the scope for underperformance for poorly performing companies.

3.109 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 5 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 Appendix 8 below where we present the pre-RAMs RoRE ranges. Additional information can also be found in the company specific documents and the supporting files we published alongside these Draft Determinations.

4. WACC allowance

Section summary

In this section we bring together our proposals for debt, equity and notional gearing to generate an overall allowance for the cost of capital. We summarise how allowances for the cost of capital will change during RIIO-ED2 to reflect debt and equity indexation. We also note the impact of high inflation on the real equity returns of the notional company.

WACC allowance	
Purpose	The real WACC allowance remunerates debt and equity investors for their investment in network services.
Benefits	Accurate remuneration will secure network investment during RIIO-ED2 and help keep consumer charges in line with efficient costs.

- 4.1 Our current view on the baseline allowed return on capital during RIIO-ED2 is summarised in Table 19, and reflects the combined proposals made in other chapters: debt, equity and financeability.

Table 19: Draft Determinations on the baseline allowed return on capital¹¹⁵ (average for the five years ending 31st March 2028, CPIH real)

Component	ENWL, NPgY, SPEN, SSEN, SPN, EPN, EMID, SWEST and WMID	LPN, NPgN and SWALES	Ref	Source
Notional Gearing	60%	60%	A	Paragraph 5.71
Cost of equity allowance	4.75%	4.75%	B	Paragraph 3.102
Cost of debt allowance	2.26%	2.32%	C	Table 4 and Table 5
WACC allowance (vanilla, real CPIH terms)	3.26%	3.29%	D	$D = A * C + B * (1 - A)$

Source: Ofgem analysis

- 4.2 The WACC allowance in Table 19 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 alongside these Draft

¹¹⁵ Table values may not sum due to rounding.

Determinations. The WACC allowance above is stated in CPIH deflated terms, to reflect expected inflation, for equity and debt investors, and in line with our policy of adding outturn inflation to the RAV.

Impact of high outturn inflation on real equity returns

- 4.3 We are currently in a period of high inflation, where outturn inflation may continue to be much higher than long-run expected inflation. We are conscious that there may be risks and costs to consumers during such periods of high inflation.
- 4.4 In our March 2018 RIIO-2 Framework Consultation, we sought views on how we should remunerate inflation and whether we should set a nominal return or a real return.¹¹⁶ We also noted advice from the UKRN study to use a long-horizon for all CAPM parameters.¹¹⁷ In our RIIO-2 Framework Decision, we ruled out the option of using a nominal approach for returns.¹¹⁸ In our RIIO-GD&T2 SSMD, we noted suggestions from network companies that we should ‘true-up’ our inflation expectations using outturns¹¹⁹ but we also noted that the cost of equity is based on a long run expectation.¹²⁰ We also stated our preference of using expected inflation measures rather than outturn inflation measures when estimating real debt costs.¹²¹
- 4.5 We note that by using this approach, both consumers and investors are exposed to the risk that outturn inflation (which is applied to the RAV, ex post) is higher or lower than expected inflation (which is deducted, ex ante, from debt and equity when calculating a real WACC). In periods of high inflation, investors benefit from

¹¹⁶ RIIO-2 Framework Consultation, Page 96,
https://www.ofgem.gov.uk/sites/default/files/docs/2018/03/riio2_march_consultation_document_final_v1.pdf#page=96

¹¹⁷ RIIO-2 Framework Consultation, Page 125,
https://www.ofgem.gov.uk/sites/default/files/docs/2018/03/riio2_march_consultation_document_final_v1.pdf#page=125

¹¹⁸ RIIO-2 Framework Decision, Page 6,
https://www.ofgem.gov.uk/sites/default/files/docs/2018/07/riio-2_july_decision_document_final_300718.pdf#page=6

¹¹⁹ RIIO-2 SSMD Finance Annex, Page 27,
https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=27

¹²⁰ RIIO-2 SSMD Finance Annex, Page 30,
https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=30

¹²¹ RIIO-2 SSMD Finance Annex, Page 23,
https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=23

higher nominal RAV growth, generating a higher nominal return. In periods of low inflation, the opposite is true.

- 4.6 The notional company is assumed to be geared at 60% (including 25% index-linked debt). The use by the notional company of fixed-rate debt financing - which does not benefit from outturn inflation - creates a leveraging effect to equity investor returns of unexpected inflation levels. By this, we mean that for every 1% increase or decrease in inflation compared to expected inflation embedded in the WACC, nominal equity returns to the notional company will increase or decrease by more than 1% (all else equal).
- 4.7 As a result of this leveraging effect, when outturn inflation is higher or lower than expected, equity investors in the notional company can potentially generate real returns that are higher or lower than the returns we allow in our Cost of Equity determination, although the real WACC allowance that consumers pay remains unchanged.
- 4.8 We have previously indicated that there may be some extreme circumstances where it would be appropriate to consider notional company financeability constraints at the time that they arose, and that we consider it appropriate and proportionate that potential remedies be considered in those circumstances at the time rather than incorporating ex ante 'fixes' to a problem that we do not expect to materialise.¹²² For example, in the event that notional company financeability constraints were to arise following a period of very low inflation, it would be open to Ofgem to consider in its discretion what tools, if any, might be appropriate to respond to that distress.¹²³ However, there is no similar protection in extremis for consumers in the event of high inflation.
- 4.9 In Chapter 8, we propose using RAMs 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, but - consistent with our approach to RIIO-GD&T2 - these RAMs do not consider the impact of inflation on RoRE.

¹²² RIIO-2 Final Determinations Finance Annex, Page 85, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf#page=85

¹²³ Arrangements for responding in the event that a network company experiences deteriorating financial health, <https://www.ofgem.gov.uk/sites/default/files/docs/2008/12/position-paper---responding-to-deteriorating-financial-health-final.pdf#page=1>

4.10 Finally, we note that this issue is not unique to RIIO-ED2 but is common to our RIIO-GD&T2 price controls as well.

4.11 We seek stakeholder views on these inflation issues by asking the following questions.

Inflation and WACC consultation questions

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?

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

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?

5. Financeability

Section summary

Financeability relates to a licence holder's ability to finance the activities that are the subject of obligations imposed by or under the relevant licence or legislation. We focus in this chapter on the financeability considerations for RIIO-ED2.

We have considered the financeability assessments as per received Business Plans and have applied a similar assessment to forecasts of financial performance once updated for Ofgem's totex allowances, incentives and notional structure as well as macro-economic changes since Business Plan submissions.

Financeability measures	
Purpose	To check that all components of our Draft Determinations, 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.

Background

- 5.1 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.
- 5.2 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 can generate cash flows sufficient to meet its financing needs.
- 5.3 As discussed in Chapters 2 and 3 above we have updated the assumptions for equity and debt based on further work undertaken since Business Plan submission and changes in macro-economic factors such as interest rates and inflation forecasts.
- 5.4 Our Business Plan Guidance (BPG)¹²⁴ 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

¹²⁴ 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

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.

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

Draft Determinations

Allowance parameter	Consultation position
Notional Gearing	Notional gearing of 60% for the ED networks.
Financeability Check	We consider all networks are financeable on the basis of the notional capital structure taking account of the proposed allowed costs, cost recovery and allowed returns in these Draft Determinations.

- 5.6 We consider that the baseline credit quality of the notional licensee is, in the round, generally consistent with two notches above the minimum investment grade, which was the target rating for the notional company most commonly proposed by networks.¹²⁵ There is some variation in credit metrics and modelled credit ratings between licensees but we are satisfied that this variation is not indicative of fundamental differences in underlying credit quality and does not materially change each licensee's resilience to downside scenarios.
- 5.7 We have completed our notional company financeability assessment with regard to actual market data and RIIO-ED1 assumptions. Our assumptions for the notional company cost of equity and debt are based on actual market data, our notional gearing assumption is based on market examples, and our assumption for the proportion of inflation linked debt in the notional company is based on current actual network average proportions of inflation linked debt.
- 5.8 In considering equity financeability as distinct from debt financeability, we have looked primarily at our assessment of allowed equity returns (discussed in

¹²⁵ With the exceptions of SPEN and NPG, who indicated Baa1/A3 and A-/A3 target ratings respectively, although NPG assessed financeability "against a threshold of BBB+ or Baa1 for the credit tests", Page 194, December 2021 NPG Business Plan Submission.

Chapter 3 above). We have used a notional dividend yield of 3.0% (see paragraph 10.79) and assessed the implied dividend cover ratios in financeability modelling. We consider the dividend yields and cover ratios to be adequate, in line with our views on allowed equity returns.

Rationale for Draft Determinations

Approach – financeability assessment

- 5.9 In our RIIO-ED2 SSMD, we decided to align our approach to financeability with the approach set out in our RIIO-GD&T2 SSMD, ie to focus on the notional company for assessing price control parameters and to review notional company financeability analysis for individual notional licensees following Business Plan submission.
- 5.10 Several networks argued in their Business Plan submissions that actual company financeability constraints should be considered in addition to the notional company. We have considered actual company debt positions and structures to inform the notional structure. However, consistent with our RIIO-ED2 SSMD and our Final Determinations for RIIO-GD&T2, we treat actual company financing decisions as matters for companies themselves.
- 5.11 As stated in our RIIO-ED2 SSMD,¹²⁶ 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). The CMA agreed 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.”¹²⁷
- 5.12 Regarding the notional company approach, the CMA said: “...we consider that the 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 of protecting the consumer interest. In short, we agree

¹²⁶ RIIO-ED2 SSMD Finance Annex, Paragraph 4.19,

https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

¹²⁷ CMA Final Determinations, Volume 3: Individual Grounds, Paragraph 14.86,

https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

with GEMA that it creates strong incentives on the part of licensees to manage company debt prudently and efficiently.”¹²⁸ ¹²⁹

- 5.13 Therefore, we continue to focus on the notional company for setting price control parameters in light of our obligation to have regard to financeability and our other duties.
- 5.14 In line with our approach to financeability in our RIIO-GD&T2 SSMD,¹³⁰ Ofgem does not target any particular credit rating or credit ratio for notional companies. However, in common with the networks themselves, we do consider forecasts of key financial metrics and draw on rating agency methodologies to assess likely credit quality in the round, which in turn influences our view of access to capital and ability to repay capital and financing costs.
- 5.15 Most networks targeted a credit rating of BBB+/Baa1 in their Business Plans. One network mentioned increased flexibility in unexpected circumstances, and potential increases in investment requirements as reasons to target a credit rating above BBB+/Baa1. Some networks mentioned debt market access and increased costs of debt for lower ratings as reasons to target a BBB+/Baa1 rating.
- 5.16 We agreed with the Challenge Group’s view that such a target would be at the upper end of the acceptable range, and have considered whether a lower target rating could be justified 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 company ratings across EMEA indicating a similar trend;
 - whether a lower powered (less risky) price control could require less headroom in the base case to absorb shocks; or

¹²⁸ CMA Final Determinations, Volume 3: Individual Grounds, Paragraph 14.81, https://assets.publishing.service.gov.uk/media/617fd092d3bf7f5604d83de4/ELMA_Final_Determination_Vol.3.pdf

¹²⁹ Wales and West Utilities Limited are seeking judicial review of, among other things, the CMA’s final determinations in respect of the interpretation of Ofgem’s financeability obligations.

¹³⁰ RIIO-GD&T2 SSMD Finance Annex, Paragraphs 4.19-4.26, https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=81

- whether targeting a lower credit quality could cost consumers less than any adjustments required to maintain notional company credit quality at BBB+/Baa1.
- 5.17 However, we also consider the following benefits of targeting notional company credit quality two notches above minimum investment grade:
- a lower cost of debt;
 - a lower risk of migration to sub investment grade or default (if networks broadly aim to replicate the notional structure);
 - better access to capital, particularly in times of market disruption;
 - more headroom in the energy supply chain generally if networks are more financially resilient; and
 - greater ability to absorb market or operational impact of shocks (generally but also from COVID-19).
- 5.18 On balance, we are comfortable with the BBB+/Baa1 credit rating target adopted by most networks.
- 5.19 However, it is clear that rating agencies, lenders and market participants do not always agree on the credit quality of a given entity¹³¹ and that this assessment involves some degree of judgement. We therefore do not take the view that a BBB+/Baa1 credit rating ought to be adopted as a fixed target for notional companies.
- 5.20 In previous price controls,¹³² we have expressed our concerns with overly focussing on particular individual metrics and have set out our view on the limitations of the adjusted interest coverage ratio (AICR) or post maintenance interest coverage ratio (PMICR) in particular. As noted in the RIIO-GD&T2 Draft Determinations¹³³, we believe an assessment of credit quality and financeability requires a consideration of a number of metrics and qualitative factors in the round. However, we also recognised that it is rating agencies' prerogative to use

¹³¹ As evidenced by a large volume of companies that have different rating category assignments by different agencies, banks having their own internal credit assessments that do not always equal published ratings and bond market pricing that is often not equal for entities rated in the same category.

¹³² 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.

¹³³ RIIO-2 Draft Determinations Finance Annex, Paragraph 5.26, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=57

and apply thresholds for these metrics as they choose for their own rating assessments.

- 5.21 We therefore do not take the approach that some networks did which was to apply strict threshold levels to particular credit metrics without also considering how or why published methodologies would imply a different rating outcome and/or whether particular metrics are genuinely good indicators of credit quality.
- 5.22 We have previously indicated that it will be for networks and the rating agencies to evaluate whether any issues revealed by weak metrics should lead to lower levels of gearing, tolerance of lower credit ratings or further evolution in rating methodologies.¹³⁴ We are not aware of any change in rating methodologies on this topic and networks did not indicate tolerance of lower credit ratings in their Business Plans.
- 5.23 We have therefore undertaken an in-the-round assessment that targets each notional company being broadly of comfortable investment grade credit quality. This included consideration of:
- financial projections from our financial model that is used to propose revenue allowances in these Draft Determinations;
 - the implied Moody's methodology rating (as this is the most transparent and therefore replicable methodology of the three rating agencies);
 - key ratios compared to stated agency guidance thresholds for ratings two notches above investment grade but without a hard requirement to always meet those guidance levels for every ratio, recognising the discretion that rating agencies have in applying those levels to their eventual ratings assessments;
 - the strength of other metrics and qualitative factors; and
 - stress test results.
- 5.24 In completing this assessment, we used the following starting assumptions for the notional company in our base case modelling:
- The allowed return (WACC allowance) as set out in chapter 4.
 - Totex allowances are assumed to equal network totex cost forecasts for RIIO-2.

¹³⁴ RIIO-ED1 Draft Determinations Financial Issues, Paragraphs 3.21-3.22, https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio-ed1_draft_determination_financial_issues.pdf

- 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 Draft Determinations 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 allowances set out in Table 4 and Table 5.
- 25% of the network's debt is assumed to be CPIH linked (with a scenario test showing an alternative of 25% RPI-linked debt).
- 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-1 as provided in Business Plan Data Template submission, and inclusive of any known logged-up adjustments.
- Lagged revenue impacts arising from RIIO-1 are excluded (eg inflation true-up, cost pass-through adjustments, output incentive revenue and over / under collection of revenue).
- Depreciation rates are based on the proposed policy set out in Chapter 10 below.
- Capitalisation rates are based on the proposed policy set out in Chapter 10 below.
- Dividend yield assumed at 3% of regulatory equity, as set out in paragraph 10.79.
- Equity issuance transaction costs of 5% of any amount forecast to be issued, as set out in paragraph 10.79.

5.25 We have previously indicated¹³⁵ that “we cannot justify giving investors higher cost of capital allowances to improve a financial metric”, and we remain of this view. In carrying out our assessment of financeability, we have considered the actions set out in the following section as potential means of assessing financeability constraints.

¹³⁵ RIIO-ED1 Draft Determinations Financial Issues, Paragraph 3.19, https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio-ed1_draft_determination_financial_issues.pdf

Approach – financeability actions

5.26 In our SSMC and SSMD,¹³⁶ we set out the actions that network companies could take to address any financeability concerns, which were:

- Dividend policies can be adjusted to retain cash within the ring-fence during the RIIO-1 or RIIO-2 period.
- Equity injections can be used to reduce gearing.
- Expensive debt or other financial commitments could be re-financed.
- Network companies can propose alternative capitalisation rates and/or depreciation rates, if appropriate.

5.27 Of the above measures, only some are applicable for any identified notional company financeability constraints, namely:

- reducing the dividend assumption, if appropriate;
- adjusting capitalisation and/or depreciation rates; and/or
- adjusting notional gearing (which implies notional equity injection).

Capitalisation and depreciation rates

5.28 In our RIIO-ED2 SSMD,¹³⁷ we left open the option of adjusting capitalisation or depreciation rates to address financeability constraints. These measures can increase revenue in the short-to-medium term in return for lower RAV growth and are, therefore, NPV-neutral levers.

5.29 We also said that we would assess any proposed adjustments to capitalisation rates and depreciation in light of the evidence and justification provided in Business Plans. We asked network companies to also assess the financeability impact of any changes to depreciation and/or capitalisation rates, if the company considers such changes are appropriate and justified.

5.30 Some networks indicated that adjusting capitalisation or depreciation rates would not be effective in addressing financeability constraints, mentioning that mitigating actions such as changing the regulatory depreciation period or reducing capitalisation rates below their natural levels will increase costs to consumers in the short term while masking financeability problems that may

¹³⁶ RIIO-ED2 SSMD Finance Annex, Paragraph 4.5,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

¹³⁷ RIIO-ED2 SSMD Finance Annex, Paragraph 4.33,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

reappear in the long term. We believe this is an oversimplification because some ratings agencies, lenders, and market participants would consider that these measures improve credit quality while others have indicated that they do not consider these measures to improve credit quality.

- 5.31 Several networks suggested decreasing their capitalisation rates slightly improved financeability. One network mentioned that decreasing the regulatory capitalisation rate below the statutory capitalisation rate will improve cash flows and assist with de-gearing the network to the RIIO-ED2 notional level.
- 5.32 Several networks considered reducing the regulatory depreciation period to increase return of capital and improve operational cash flows. One network suggested that Ofgem should set the asset life for business as usual levels of investment at the current average (c. 25 years) and retain flexibility to use the longer 45-year asset life for any significant additional investment. They set out three core arguments in support of this approach:
- current customers have not been overpaying under 20-year asset lives;
 - the RAV and network charges would increase significantly if 45- year asset were maintained; and
 - the 45-year asset life policy could strain financeability as electricity distribution heads into the net zero transition.
- 5.33 On the other hand, other networks considered changing asset lives but did not recommend a change in the regulatory depreciation period. Their core arguments against this were that reducing this period:
- did not materially improve financeability; and
 - may lead to intergenerational inequality as customers today are paying for assets that have useful economic lives longer than the regulatory period.
- 5.34 Chapter 10 sets out our proposals on regulatory depreciation rates and capitalisation rates. On the whole, the evidence supplied did not justify a change to our working assumptions from a financeability viewpoint. We did, however, consider whether the results from our own financeability analysis provided grounds for any further changes.

Notional gearing

- 5.35 During the RIIO-ED1 price control, notional gearing was assumed to be 65% for assessment of financeability for all electricity distribution networks.

- 5.36 In our SSMD, we provided a working assumption of 60% notional gearing for Business Planning purposes but indicated that we would review our notional gearing assumption in light of the riskiness of the overall price control settlement and the ability of the notional efficient company to sustain downsides following Business Plan submission.
- 5.37 Allowances for the cost of equity are determined with reference to current risk-free rates but allowances for the cost of debt are determined with reference to a trailing average of corporate debt rates over the last 10 years or longer.¹³⁸ This can naturally create some lag in debt servicing ability when rates have been falling.
- 5.38 In our RIIO-ED2 SSMD,¹³⁹ we noted that the working assumption of 60% notional gearing represents a 5% reduction from RIIO-ED1 levels, which is consistent with the RIIO-GD&T2 Final Determinations notional gearing levels and is more likely to provide a meaningful starting point for the ED financeability assessment. However, we encouraged DNOs to undertake analysis and stakeholder engagement on the trade-offs involved in different notional gearing levels, and the relative costs and benefits to consumers.
- 5.39 Some networks carried out risk, RoRE and financeability assessments at 55%, 60% and 65% notional gearing intervals. In general, networks were content with our proposed notional gearing of 60% and that the decrease in notional gearing from RIIO-ED1 was reasonable.
- 5.40 Several networks argued that reducing notional gearing below 60% was not practical because it would not be feasible to raise the amount of equity needed to implement this change. One company provided evidence that under the assumptions of 60% notional gearing and a notional dividend yield of 3%, investors may receive negative cash flows, and argued that notional gearing could not be further decreased.
- 5.41 On the other hand, most companies did not favour notional gearing above 60%. In particular:

¹³⁸ This is because the cost of debt allowance seeks to cover both embedded debt that has been fixed with reference to market rates over time and new debt that will be raised in the upcoming price control.

¹³⁹ RIIO-ED2 SSMD Finance Annex, Paragraph 4.38, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

- the benefits of switching to apparently cheaper debt financing were considered to be offset by higher equity costs (reflecting the fact that equity is more exposed to risk);
 - companies considered that higher gearing could limit the financial flexibility of the sector to fund investments for the net zero transition; and
 - companies argued that at 65% gearing the modelled downside is a considerable risk to shareholders, so a lower gearing should be implemented to calibrate the downside cover closer to the cost of debt.
- 5.42 Networks raised concerns that changes to notional gearing should be based on market evidence and determined to be a more efficient level of gearing, and lower gearing should not be used by Ofgem to artificially increase credit ratios that are strained because the cost of equity is set too low.
- 5.43 One network recommended that notional gearing should remain at the RIIO-ED1 level of 65%. They stated that reducing gearing to 60% places additional stress on the company at a time when investment requirements are growing. Additionally, any failure to transition to the new 60% notional gearing level risks tax clawback by the end of RIIO-ED2, further compounding financeability challenges.
- 5.44 On the whole, there was no clear case based on companies' views to adopt a different starting point from our working assumption of 60%. We tested alternatives to this based on our own analysis by:
- examining whether there was excessive headroom which might indicate it could be more efficient to increase notional gearing levels;
 - checking consistency with market benchmarks; and
 - considering the impact of higher or lower gearing on different model scenarios, particularly stress test results.
- 5.45 This logic constrains the de-gearing process to secure that the notional company remains within the bounds of market benchmarks and provides an allowance for any assumed de-gearing (equity issuance).

Analysis results

- 5.46 Financeability analysis enables us to test whether our proposed Draft Determinations package allows the notional efficient operator sufficient headroom to service its debt.

Baseline results

- 5.47 We began our financeability analysis using our RIIO-ED2 SSMD working assumption of 60% notional gearing. We then combined this with:
- our Draft Determinations positions on costs and incentives;
 - debt and equity allowances as outlined in chapters 2 and 3 above for the relevant working assumption level; and
 - capitalisation and depreciation assumptions as set out in chapter 10.
- 5.48 Table 20 sets out the resulting financial ratios of our Draft Determinations on the basis of baseline totex allowances. As there could be additional totex allowed for through Uncertainty Mechanisms we considered it prudent to also consider an illustrative higher totex case for financeability purposes (resulting ratios also provided in Table 20) in addition to the baseline totex case. This does not represent a forecast or indication of re-opener allowances but is a case that could be considered for illustrative purposes.

Table 20: Base case and high case modelled notional credit ratings and metrics (RIIO-ED2 average).

	Base case totex			High case totex		
Licensee	Adjusted AICR	FFO/net debt	Credit rating	Adjusted AICR	FFO/net debt	Credit rating
ENWL	1.30	11.4%	Baa1	1.31	11.3%	Baa2
NPgN	1.30	12.0%	Baa1	1.28	11.5%	Baa1
NPgY	1.39	11.9%	A3	1.37	11.4%	Baa1
WMID	1.43	12.9%	A3	1.42	12.5%	A3
EMID	1.42	12.5%	A3	1.39	11.8%	Baa1
SWALES	1.37	11.1%	Baa1	1.35	10.7%	Baa1
SWEST	1.41	11.1%	A3	1.39	10.7%	Baa1
LPN	1.43	13.2%	A3	1.41	12.8%	A3
SPN	1.42	13.2%	A3	1.41	12.9%	A3
EPN	1.43	13.4%	A3	1.41	12.9%	A3
SPD	1.40	12.8%	A3	1.39	12.5%	Baa1
SPMW	1.40	12.2%	A3	1.39	11.9%	Baa1
SSEH	1.40	11.5%	Baa1	1.36	10.2%	Baa2
SSSES	1.39	11.8%	Baa1	1.38	11.1%	Baa2

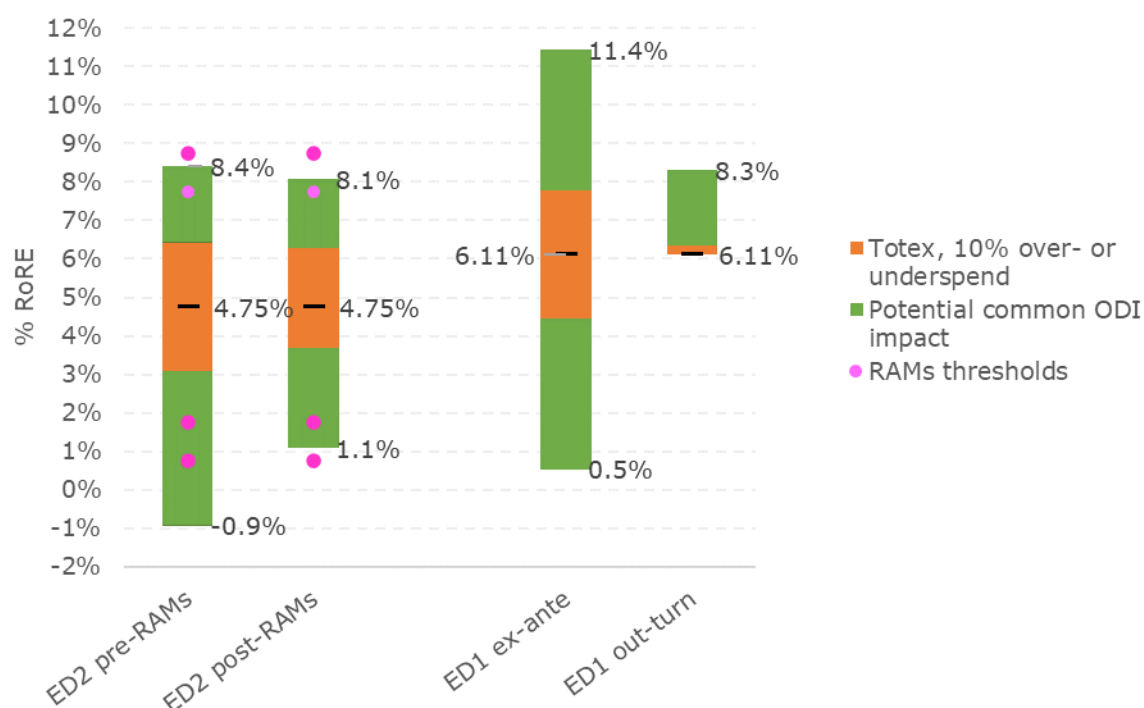
5.49 The financial ratio results in Table 20 indicate to us that there is sufficient headroom in the base case to consider each notional company financeable. While AICR metrics are tight for all licensees relative to typical investment grade levels for that metric alone, overall credit ratings are consistent with a comfortable investment grade rating. Nine networks have three notches of headroom above a minimum investment grade rating and five have two notches.

5.50 We are comfortable with the spread of modelled credit ratings by licensee. Bearing in mind the AICR metrics, we do not consider the A3 ratings indicate excessive headroom that might justify a higher notional gearing assumption. We consider in the following section whether variation in licensees' base case credit ratings materially affects their sensitivity to scenario analysis.

Scenario analysis

- 5.51 In our RIIO-ED2 SSMD, we set out a common set of stress test sensitivities¹⁴⁰ that networks were required to run as part of their Business Plan submissions. These were broadly equivalent to the types of stress tests run at previous price controls, including macroeconomic, totex and overall RoRE scenarios.
- 5.52 We have carried out our own scenario analysis for each notional licensee reflecting our Draft Determinations 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 6 below illustrates the potential range of returns based on common ODI caps and collars and an illustrative 10% over/underspend on totex.¹⁴¹

Figure 6: Illustrative RoRE ranges



- 5.53 The objective of our stress tests is to assess whether the Draft Determinations package provides an appropriate degree of robustness to downside scenarios. As

¹⁴⁰ RIIO-ED2 SSMD Finance Annex, Page 45, Table 2: Ofgem suggested scenarios, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

¹⁴¹ Across a sector average bespoke ODIs are too small to be visible and therefore not included in this graph. The ED2 BPI on a sector average basis is negligible, but also typically excluded from financeability results.

noted above, 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. Licensees are also required by the licences to maintain an investment grade credit rating.¹⁴²

- 5.54 This does not, however, imply that we are obliged to secure that notional licensees can maintain an investment grade credit rating in any and all scenarios, including underperformance scenarios. Though we have not set a target credit rating, companies have generally proposed target ratings of BBB+/Baa1. Our allowance for the cost of debt is based on an index that broadly corresponds to a similar ratings range. The ability of notional licensees to maintain an investment grade rating should be consistent with this.
- 5.55 We have used published credit rating migration rates as a reference point to inform and help calibrate our underperformance scenarios in this context. Among Baa rated corporate infrastructure issuers, Moody's reports an average five-year migration rate to sub-investment grade ratings of around 6%, or about 1-in-16. For an A rated issuer the equivalent rate would be around 2% or a about 1 in 50.¹⁴³
- 5.56 We do not use such probabilities mechanistically. However, they are reference points to which we would expect lenders to A and BBB/Baa rated businesses, including energy networks, to have regard. They indicate that our financeability assessment should not be determined by the extreme tail of the probability distribution of potential outcomes. We note that a 1-in-16 probability is closely comparable (in a sector with 14 licensees) to the most severe outcome that might be expected for an individual licensee in a typical price control. We therefore seek to incorporate in our scenario analysis the lowest level of outturn overall performance that might be expected in a given price control.
- 5.57 This is consistent with our approach in previous price controls, where we have not generally tested financeability with respect to the very extreme of the illustrative downside range presented. For example, in our most recent assessment of financeability for RIIO-GD&T2 we focused on a -100bps RoRE downside as a "reasonable overall stress test", though we presented wider downside scenarios

¹⁴² Standard Licence Condition 40 – Credit rating of the licensee, <https://epr.ofgem.gov.uk/Content/Documents/Electricity%20Distribution%20Consolidated%20Standard%20Licence%20Conditions%20-%20Current%20Version.pdf>

¹⁴³ Based on migration rates reported by Moody's for corporate infrastructure issuers from 1983-2020.

in illustrating the overall package of incentives.¹⁴⁴ Our RIIO-ED1 Final Determinations for slow-track companies referred to “plausible downside scenarios” and “plausible ranges for RORE” in relation to financeability testing.¹⁴⁵ These were almost 200bps narrower on the downside than the illustrative ranges shown in Figure 6 above. Where networks undertook stochastic modelling in support of their Business Plans, they commonly had regard to P10 or P90 outcomes – ie ‘1-in-10’ scenarios. For their respective PR19 determinations, Ofwat and the CMA each considered scenarios consistent with a more moderate level of RoRE underperformance than would have been indicated by, for example, ODI collar rates.^{146,147}

- 5.58 We have assumed that a licensee’s totex and ODI performances are not perfectly correlated. We do not consider it realistic to assume that in a typical price control a notionally efficient licensee would be at the bottom end of performance on totex and all ODIs simultaneously. We therefore accommodate the possibility of some neutral or offsetting positive performance.
- 5.59 In our view, an appropriate downside performance scenario for an individual notional licensee might reasonably fall in the range of 100-200bps RoRE. In calibrating this range, we have had regard to:
- the credit rating migration rates referred to in 5.56-5.57 above;
 - a bottom-up assessment of potential outturn performance based on our best view of performance for each individual incentive;
 - a review of top-down outturn price control totex and ODI performance in the energy, water and aviation sectors;
 - a comparison of the range of outcomes for RIIO-ED2 in comparison to RIIO-ED1 and RIIO-GD&T2; and

¹⁴⁴ RIIO-2 Draft Determinations Finance Annex, Paragraph 5.44 and presentation of RoRE ranges in Figure 6, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

¹⁴⁵ RIIO-ED1: Final determinations for the slow-track electricity distribution companies, Paragraph 5.36 and Figure 5.1, https://www.ofgem.gov.uk/sites/default/files/docs/2014/11/riio-ed1_final_determination_overview_-_updated_front_cover_0.pdf

¹⁴⁶ Ofwat’s ‘PR19 final determinations – Aligning risk and return technical appendix’, Page 99, <https://www.ofwat.gov.uk/wp-content/uploads/2019/12/PR19-final-determinations-Aligning-risk-and-return-technical-appendix.pdf>

¹⁴⁷ CMA’s ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations – Final report’, Paragraphs 10.102-10.105, https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_---_web_version_-_CMA.pdf

- cross references to scenarios referred to by Ofwat and the CMA to inform their financeability testing for the PR19 price control.
- 5.60 The less extreme end of this range is more consistent with a combination of underperformance in some areas and outperformance in others. The more extreme end of the range would require an exceptional degree of underperformance in multiple areas, with little if any offsetting outperformance, and as such would be expected to occur more rarely.
- 5.61 Overall, the range is comparable to or potentially even more severe than stress test scenarios recently referred to by the CMA and Ofwat in relation to PR19. The CMA, for example, modelled the equivalent of a 135bps downside RoRE scenario, noting that it reflected a “severe downside case”.
- 5.62 Our modelling indicates that each notional licensee is able to support an investment grade credit rating under a 200bps RoRE downside. Beyond a 200bps downside there is ‘tipping point’ at which each notional licensee’s modelled rating would fall below investment grade. This point generally falls in the 200-300bps RoRE range, though there is some variation between licensees.
- 5.63 Given that our credible range of expectations for an individual licensee (100-200bps RoRE downside) and the investment grade ‘tipping point’ range (200-300bps) do not overlap, this gives us comfort that the risk of downgrade implied by the package is no greater than investors’ expectations for businesses with a similar rating. We note that were these ranges to overlap, this would not automatically mean that we would revisit our financeability assessment.
- 5.64 We do not think the evidence suggests that an outcome in the -200 to -300bps range is sufficiently likely to be problematic, though it is not impossible. Rather, we consider that this would require a sustained level of underperformance across the board that would be exceptional by the standards of previous price controls. We are satisfied that the threat of a sub-investment grade credit rating would be a proportionate outcome in the face of such underperformance.
- 5.65 In practice, a deterioration of credit metrics would likely take several years and actual companies would be able to implement mitigating actions to avoid sustaining such underperformance and limit the impact on credit ratings. Such actions could include de-gearing, raising new index-linked debt or prioritising and profiling expenditure. These would be for actual companies to determine and so we have not sought to define or model any particular actions. Furthermore,

Ofgem's duties continue to apply during a price control and were it to be appropriate, then there are actions we could take in response to emerging financeability issues.¹⁴⁸

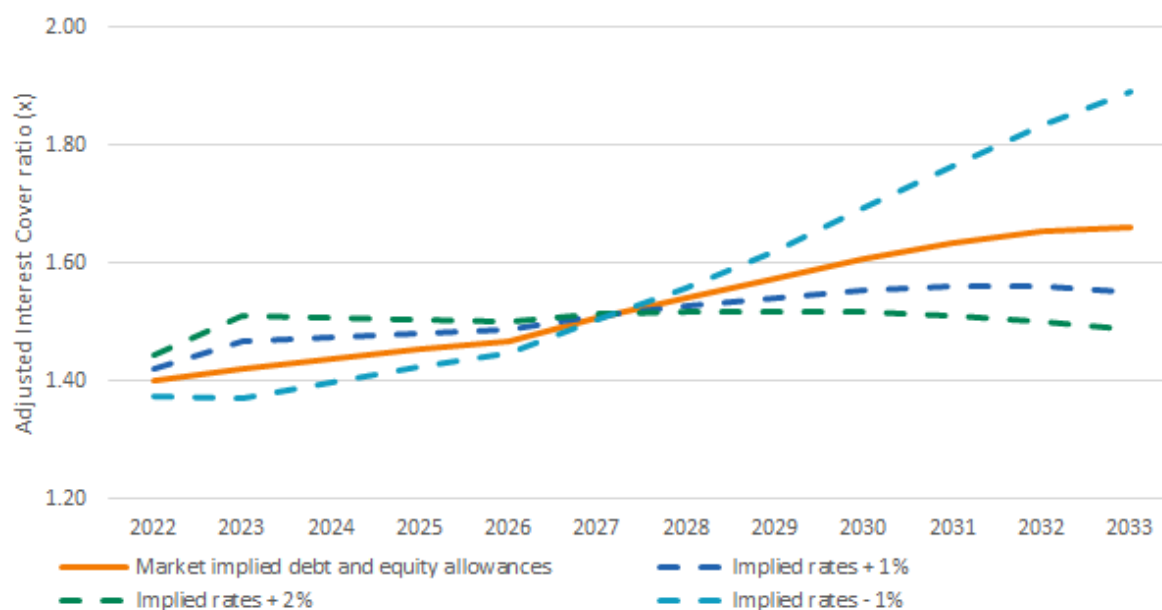
- 5.66 We recognise the inherent uncertainty in defining the range of plausible outturn scenarios. Should any party provide clear evidence indicating that our scenario analysis can be refined further, we would consider this in reaching our Final Determinations.

Longer-term analysis

- 5.67 For RIIO-ED2, allowances for both debt and equity will change to reflect market rates for index-linked gilts and corporate debt. 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. This could better inform our decisions on whether any changes to notional gearing for RIIO-ED2 could be expected to prevail or require further adjustment, prior to RIIO-ED2 or at future price controls.
- 5.68 We considered whether there were 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 tool for looking at longer term expected trends. We show the results of our analysis on the basis of a 60% notional gearing assumption.
- 5.69 Future trends in the overall cost of debt - including the gradual replacement of historical embedded debt costs as well as trends in market rates - combined with a slightly rising equity return would lead to an improving AICR over time (as shown in Figure 7). We therefore do not have any longer term financeability concerns related to AICR in the market implied case.

¹⁴⁸ We noted, for example, in our RIIO-2 Final Determinations – Finance Annex, that we would consider notional company financeability constraints and potential remedies as the price control progresses, Paragraphs 5.42-5.43, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

Figure 7: AICR scenario analysis



Source: Ofgem analysis

Conclusions and implications

- 5.70 Based on our SSMD working assumption of 60% for notional gearing and proposals for capitalisation and depreciation rates, we consider our Draft Determinations to be financeable.
- 5.71 We therefore propose to adopt a figure of 60% for notional gearing and do not consider any changes to our approach to capitalisation or depreciation rates are required on financeability grounds. Our proposals in respect of these parameters are discussed in detail in Chapter 10.

Consultation questions on financeability

FQ19. Do you agree with our approach to assessing financeability?

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

6. Financial resilience

Section summary

In this section we set out our decisions regarding financial resilience reporting to be made by licensees.

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 increases the chance and quantum of recovery for the benefit of consumers.

Background

- 6.1 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.¹⁴⁹
- 6.2 We decided that the requirement for a Financial Resilience Report would be triggered if the licensee's highest issuer rating 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 would also be triggered if any rating 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 is on negative watch, or if the rating is lower than BBB.¹⁵⁰
- 6.3 We also noted that we do not consider there to be any sector-specific reasons why this licence requirement should be different to the GD&T sectors and that we

¹⁴⁹ RIIO-ED2 SSMD Finance Annex, Paragraph 5.3,
<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

¹⁵⁰ RIIO-ED2 SSMD Finance Annex, Paragraph 5.14, *ibid*.

expected to consult on the same drafting across sectors, subject to consultation on the RIIO-ED2 Draft Determinations and statutory consultation process.¹⁵¹

Draft Determinations

- 6.4 We propose that DNOs be required to provide the financial resilience report and, where possible, the ratings reports to Ofgem within 60 days of the triggering event described in our SSMD.¹⁵²

Rationale for Draft Determinations

- 6.5 We have set out our reasons for requiring this report in our SSMD.¹⁵³ Given the potential risk to consumers of network financial failure if networks either operate inefficiently or choose not to protect their financial resilience, we believe it is appropriate for us to bolster our checks and balances on credit quality and financial resilience.
- 6.6 We believe 60 days provides a reasonable time frame for companies to provide this information and for us to consider whether any additional information or actions are necessary. This aligns the ED licensees with the GD&T licensees.¹⁵⁴

Consultation question on financial resilience

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

¹⁵¹ RIIO-ED2 SSMD Finance Annex, Paragraph 5.16,
<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

¹⁵² RIIO-ED2 SSMD Finance Annex, Paragraph 5.14, *ibid*.

¹⁵³ RIIO-ED2 SSMD Finance Annex, Paragraphs 5.11-5.17, *ibid*.

¹⁵⁴ For example, see Electricity Transmission Standard Licence Conditions, SC B10 part C, Page 86,
<https://epr.ofgem.gov.uk/Content/Documents/Electricity%20transmission%20full%20set%20of%20consolidated%20standard%20licence%20conditions%20-%20Current%20Version.pdf>

7. Corporation tax

Section summary

In this section, we summarise the decisions made in our SSMD and set out our Draft Determinations in relation to Corporation Tax, seeking stakeholder views on these proposals.

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.

Decisions made in our SSMD

Notional allowance

- 7.3 In our SSMD Finance Annex, for RIIO-ED2, we decided to align our approach to corporation tax with the approach set out in our RIIO-GD&T2 Final Determinations, ie to continue to provide a tax allowance on a notional basis with

a number of additional mechanisms to improve reporting and to enable us to review the allowance, if required, during RIIO-2.¹⁵⁵

Capital allowances

- 7.4 We decided to make capital allowance allocation rates variable values to better enable the notional allowance to reflect networks' actual tax payments without the use of a complex macro, as was the process in RIIO-ED1.¹⁵⁶
- 7.5 We also decided to roll forward the notional capital allowance pool balances from RIIO-ED1 to RIIO-ED2 to ensure that consumers continue to benefit from tax relief in respect of the asset expenditure they have funded and is also in line with the policy that we set in our RIIO-ED1 Draft Determinations.¹⁵⁷
- 7.6 The RIIO-ED2 opening pool balances will remain under review for all licensees until we can finalise the closing pool balances from the close-out of the RIIO-ED1 price control.

Tax clawback

- 7.7 In RIIO-ED1, we used a tax clawback mechanism that claws back the tax benefit a licensee obtains as a result of higher than notional gearing levels.
- 7.8 We use two tests to determine the value of the clawback in each regulatory year: a gearing level test and a positive tax benefit test. The gearing level test measures the companies' actual gearing against the notional level and the positive benefit test compares their actual tax-deductible interest to the tax-deductible interest assumed for the notional company.¹⁵⁸
- 7.9 We decided in our SSMD that it remains appropriate to retain a tax clawback mechanism as removing it entirely may incentivise licensees to increase their gearing and lower their actual tax costs, while retaining the full tax allowance.

¹⁵⁵ RIIO-ED2 SSMD Finance Annex, Paragraphs 6.17- 6.18,

<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

¹⁵⁶ RIIO-ED2 SSMD Finance Annex, Paragraphs 6.19- 6.20, *ibid*.

¹⁵⁷ RIIO-ED1 Draft Determinations Financial Issues document, Paragraph 5.12,

https://www.ofgem.gov.uk/sites/default/files/docs/2014/07/riio-ed1_draft_determination_financial_issues.pdf

¹⁵⁸ The Tax clawback methodology is described in further detail in the Tax liability allowances - financial adjustment methodologies chapter of the ED1 Price Control Financial Handbook:

<https://www.ofgem.gov.uk/publications-and-updates/latest-price-control-financial-handbooks-riio-network-operator-licensees>

This mechanism ensures that licensees continue to share the benefit of interest deductibility with the consumer.¹⁵⁹

Tax trigger

- 7.10 In RIIO-1, we used a Tax Trigger mechanism, which captures the impact of changes to tax rates, legislation, and accounting standards, during the price control on allowed revenue above or below a materiality threshold.¹⁶⁰
- 7.11 We decided in our SSMD to retain this mechanism for RIIO-ED2 because it is a key element of the tax policy that is supported by all stakeholders and provides value for consumers. However, we decided to simplify the way that it works for changes in tax rates.¹⁶¹ The current RIIO-ED1 PCFM uses a macro to calculate the impact of changes in tax rates on base revenue and then generates an adjustment if the impact is greater than the threshold.
- 7.12 For Type A events, we decided to replace the macro with variable values for each tax rate, which can simply be updated every year as part of the Annual Iteration Process, with no need for a macro or a materiality threshold. This is a modelling simplification, which will also simplify the process of running the Annual Iteration Process.¹⁶²

Tax reconciliation and tax review

- 7.13 We decided in our SSMD to introduce the tax reconciliation and associated tax review protection for RIIO-ED2 to enable us to monitor the tax allowance and adjust the allowance if required to ensure that there are no material, unexplained differences between the tax allowance and the actual tax paid by DNOs.¹⁶³
- 7.14 We also decided to apply a materiality threshold as a trigger for the tax review to ensure that any additional administrative burden on DNOs is proportionate.¹⁶⁴

¹⁵⁹ ED2 SSMD Finance Annex, March 2021, See paragraphs 6.23,

<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

¹⁶⁰ This threshold referred to as “the deadband” and is the higher of the effect of a 1% change in the rate of corporation tax on base revenue (all other things being held equal) and 0.33% of the opening base revenue allowance.

¹⁶¹ Changes in tax rates are known as “Type A events”. A full list of Type A and Type B events is included in the Tax liability allowances - financial adjustment methodologies chapter of the ED1 Price Control Financial Handbook: <https://www.ofgem.gov.uk/publications-and-updates/latest-price-control-financial-handbooks-riio-network-operator-licensees>

¹⁶² ED2 SSMD Finance Annex, March 2021, See paragraph 6.24, *ibid.*

¹⁶³ ED2 SSMD Finance Annex, March 2021, See paragraph 6.22, *ibid.*

¹⁶⁴ *ibid*

Board assurance statement

7.15 In our SSMD, we decided to introduce a board assurance statement requirement alongside the tax reconciliation. We think this statement will provide specific assurance over the accuracy and reasonableness of the values in the tax reconciliation beyond that of the Data Assurance Guidance requirements and should require very little additional resource from the companies who will already be populating the reconciliation.¹⁶⁵

7.16 We are continuing to engage with companies on the wording of the statement.

Fair Tax Mark

7.17 We decided in our SSMD not to make the Fair Tax Mark a requirement for RIIO-ED2 as we do not think this would provide consumer value nor would it necessarily ensure tax legitimacy.¹⁶⁶

Draft Determinations and rationale

Tax Trigger

7.18 As noted in paragraphs 7.7–7.9 above, we decided to retain the Tax Trigger mechanism for RIIO-ED2 and to change the way that it is implemented for Type A events.

7.19 For Type B events, we propose to make no changes to the existing materiality thresholds, or the existing notification and determination process.¹⁶⁷ This is in line with our RIIO-GD&T2 Final Determinations.¹⁶⁸

7.20 As noted in our SSMC¹⁶⁹ and decided in our SSMD, we think it is appropriate to align the ED tax trigger policy with that of other sectors because the approach set out in our RIIO-GD&T2 Draft Determinations and decided on in our RIIO-GD&T2

¹⁶⁵ RIIO-ED2 SSMD Finance Annex, Paragraphs 6.25,
<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

¹⁶⁶ RIIO-ED2 SSMD Finance Annex, Paragraphs 6.26, *ibid*.

¹⁶⁷ RIIO-ED1 Price Control Financial Handbook, Chapter 4, section 2.

¹⁶⁸ RIIO-2 Final Determinations, Finance Annex, Paragraph 7.55,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

¹⁶⁹ RIIO-ED2 SSMC Finance Annex, July 2020, paragraph 6.6,
https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf

Final Determinations also holds true for RIIO-ED2 and there are no distinct features of the ED sector that warrant a different approach to the tax trigger.

Tax Clawback

7.21 In our RIIO-GD&T2 Final Determinations, we decided to allow networks a level of headroom in the tax clawback calculation.¹⁷⁰ This was on the basis that reducing the notional gearing level would put more networks at risk of triggering the clawback and that it would be reasonable to allow some time for companies to transition to lower levels of gearing.

7.22 We propose to adopt a similar approach for RIIO-ED2, ie a gradual decrease in the notional level gearing used for tax clawback purposes, for the same reasons as for RIIO-GD&T2. We think it appropriate to align the RIIO-ED2 tax clawback policy with that of GD&T companies for the reasons set out in paragraph 7.20 above.

7.23 The proposed rates are shown in the following table:

RIIO-ED1 notional gearing	RIIO-ED2 notional gearing	Notional gearing to be used for Tax clawback 'gearing level test' ¹⁷¹				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
65%	60%	65.00%	63.75%	62.50%	61.25%	60.00%

7.24 We note that the tax clawback policy was set in 2009 and has not been reviewed in detail since its inception.¹⁷² We intend to undertake a review of the policy on a cross-sectoral basis to ensure that it remains fit for purpose and that it continues to achieve the intended policy goal and, in particular, that any changes to accounting standards and tax legislation since 2009 that may impact the tax clawback methodology are reflected.

¹⁷⁰ RIIO-2 Final Determinations, Finance Annex, Paragraph 7.50,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

¹⁷¹ The notional gearing level will be 60% for the 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 ED1 to 60% in the last year of the ED2 price control period.

¹⁷² Open letter: Clawback of tax benefit due to excess gearing,
https://www.ofgem.gov.uk/sites/default/files/docs/2009/07/tax_clawback_open_letter-july09.pdf

- 7.25 Our current intention is to undertake this review and consult on any proposed changes to the tax clawback methodology before the publication of our RIIO-ED2 Final Determinations.

Tax Reconciliation

- 7.26 As set out in our SSMD¹⁷³, we decided to introduce a requirement for DNOs to submit an annual tax reconciliation to enable us to monitor differences between the tax allowance and the actual tax paid by DNOs, as shown in their CT600 returns. As part of this, we propose to introduce a requirement for companies to submit their latest CT600 returns to us to review in conjunction with the 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.
- 7.27 We will provide a template for the reconciliation, which will be based on the tax reconciliation sheet of the RFPR template, which we recently consulted and published a decision on for the GD&T sectors.¹⁷⁴
- 7.28 We note that tax is a complex area and so guidance relating to the tax reconciliation, which we will issue as part of the RIIO-ED2 Regulatory Instructions and Guidance (RIGs), will make clear that some differences are expected and will not require detailed commentary. It is residual differences that we want clarity on in RIIO-ED2.

Materiality

- 7.29 In response to our RIIO-GD&T2 Draft Determinations, networks suggested that we set a materiality threshold for the tax reconciliation so that only material unexplained variances would be reviewed; this would avoid a tax review being triggered for immaterial, explainable differences. For GD&T companies, we

¹⁷³ RIIO-ED2 SSMD Finance Annex, Paragraphs 6.22,

<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

¹⁷⁴ The RFPR is a data template that measures network company financial performance under the RIIO framework and is submitted to Ofgem by each licensee on an annual basis. The data template and its associated guidance document fall under our Regulatory Instructions and Guidance licence conditions. The recently published RFPR containing the tax reconciliation sheet for GD&T sectors is here: <https://www.ofgem.gov.uk/publications/decision-modifications-regulatory-financial-performance-reporting-rfpr-template-and-regulatory-instructions-and-guidance-rigs-riio-2>

decided to use the "deadband" level set in RIIO-1, as we considered it would be an appropriate threshold for the reconciliation.¹⁷⁵

7.30 The materiality threshold used for tax in RIIO-1 was set at the greater of 0.33% of opening base revenue allowances and the effect of a 1% change in the rate of corporation tax. We consider this is appropriate for RIIO-ED2 as it reflects the relative size of the network companies and was the rate used for tax allowance adjustments made during RIIO-1.

7.31 We propose to use this deadband level as a materiality threshold below which any differences in the reconciliation would not be reviewed.

Tax Review

7.32 As set out in our SSMD, we decided to introduce a tax review licence condition that will enable us to formally review and, if required, adjust the companies' tax allowances during the course of RIIO-ED2.¹⁷⁶

7.33 This review mechanism will enable us to establish whether the notional tax allowance remains appropriate if any information comes to light during RIIO-2 which could indicate otherwise. The specifics of the tax review process were set out in our RIIO-GD&T2 Draft Determinations and in Chapter 6 of the RIIO-GD&T2 Price Control Financial Handbooks.¹⁷⁷

7.34 We propose to use this same process for RIIO-ED2 on the basis that the tax reconciliation and tax allowance policy as a whole for RIIO-ED2 will be aligned with that of RIIO-GD&T2. We note the early feedback received from the ENA, which highlights several concerns with the interaction between the proposed tax licence conditions and the Price Control Financial Handbook drafting in relation to the tax review and tax reconciliation.

¹⁷⁵ RIIO-2 Final Determinations, Finance Annex, Paragraph 7.49,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

¹⁷⁶ RIIO-ED2 SSMD Finance Annex, Paragraphs 6.22,
<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

¹⁷⁷ RIIO-2 Draft Determinations, Paragraphs 7.55 – 7.62,
https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf
See also the [GD2 Price Control Financial Handbook | Ofgem](#), [ET2 Price Control Financial Handbook | Ofgem](#), [GT2 Price Control Financial Handbook | Ofgem](#) and [ESO Price Control Financial Handbook | Ofgem](#)

7.35 We propose to adopt the same process and policy for RIIO-ED2 and will continue to engage with companies on the drafting of the relevant licence condition and the Handbook.

Annual Allowance rates

7.36 For RIIO-ED2, we propose to use four main capital allowance (CA) pools and the applicable annual allowance rates that are set out in the relevant legislation¹⁷⁸, which follows our RIIO-ED1 approach and is the same we took for the RIIO-GD&T2 price controls. Our view is that there is no reason for this approach to change from RIIO-ED1 or for any divergence from the policy we decided for RIIO-GD&T2 as annual allowance rates are based on tax legislation and our price control assumptions, which do not differ between sectors. The rates in the current legislation, which are used in RIIO-ED1, are as follows:

Capital allowance pool	Annual allowance rate	Notional gearing to be used for Tax clawback 'gearing level test'
General Special Rate	18%	Reducing balance
	6%	Reducing balance
Structures and buildings	3%	Straight line
Deferred revenue expenditure	2.22%	Straight line

7.37 The annual allowance for deferred revenue follows the statutory depreciation rates rather than tax legislation. There is also a Revenue pool, which attracts a 100% rate of allowance and feeds straight through to the tax calculation without amortisation.

Allocation rates

7.38 The allocation rates used to allocate totex categories to the relevant pool balances were fixed during RIIO-ED1 to approximate our expectations of how various categories of spend would be attributed across pools.

7.39 For RIIO-ED2, we propose to make these allocation rates variable values within the PCFM, which will enable them to be updated through the AIP. We consider

¹⁷⁸ See applicable rates for the General and Special Rate pools here:

<https://www.gov.uk/work-out-capital-allowances/rates-and-pools>

And see the Structures and Buildings pool here:

<https://www.gov.uk/guidance/claiming-capital-allowances-for-structures-and-buildings>

that this modelling simplification would more closely align the tax allowance with companies' actual tax payments.

Consultation questions on corporation tax

- FQ22. Do you agree with our proposals to make allocation and allowance rates variable values in the RIIO-ED2 PCFM?
- FQ23. Do you agree with the proposed additional protections? In particular:
- FQ24. Do you have any views on a materiality threshold for the tax reconciliation?
- FQ25. 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?
- FQ26. 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?

8. Return Adjustment Mechanisms

Section summary

In this section we set out our position on Return Adjustment Mechanisms (RAMs). We set out the return thresholds on RoRE at which the RAMs will trigger (on both the upside and downside). There are 2 levels of RAMs, each associated with a different adjustment rate.

Return Adjustment Mechanisms	
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	<p>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.</p> <p>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.</p>

Background

- 8.1 In our RIIO-ED2 Framework Decision, we decided to introduce sculpted sharing factor RAMs.¹⁷⁹ 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-ED2.¹⁸⁰ We also decided that we would apply symmetry to the upside and downside application of the RAMs thresholds.¹⁸¹
- 8.2 In our SSMD Finance Annex for RIIO-ED2, we said that we would set out our proposals for the RAMs threshold trigger levels and adjustment rate at Draft

¹⁷⁹ RIIO-2 Framework Decision, Paragraph 2.136

<https://www.ofgem.gov.uk/publications/riio-ed2-framework-decision>

¹⁸⁰ RIIO-2 SSMD Finance Annex, page 83

https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf

¹⁸¹ Ibid, paragraph 10.16.

Determinations, once we had a complete picture of the overall price control package and in light of reviewing the DNOs' Business Plans.¹⁸²

Consultation position

Output parameter	Consultation position
Primary threshold level	3% plus or minus the baseline allowed return on equity
Primary adjustment rate	Adjustment of 50% applied to returns above or below the primary threshold level
Secondary threshold level	4% plus or minus the baseline allowed return on equity
Secondary adjustment rate	Adjustment of 90% applied to returns above or below the secondary threshold level

Rationale for consultation position

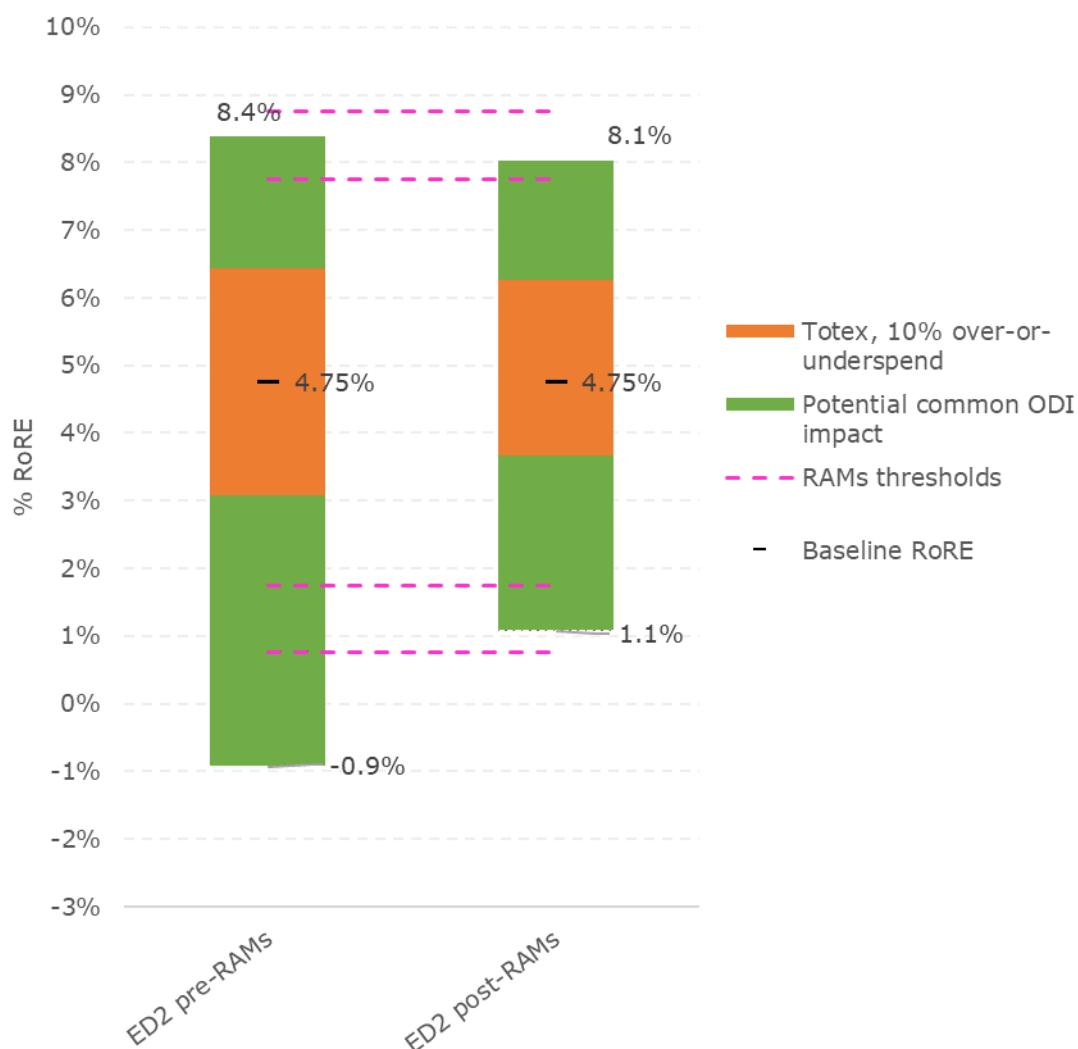
Threshold levels

- 8.3 In our SSMD, we agreed with respondents that noted it was too early in the process of setting the price control to determine the threshold and adjustment levels for the RAMs in RIIO-ED2. Since our SSMD, to inform our RAMs calibration, we have assessed Business Plans and considered the total RIIO-ED2 package in the round, including the calibration of the cost of equity, the size of the ODI package including the baseline target setting, and the calibration of the TIM.
- 8.4 We propose to calibrate two thresholds for the RAMs of 300bps and 400bps either side of our baseline allowed return on equity. In our view, a threshold of 300bps and 400bps either side of allowed return on equity is consistent with our SSMD, where we considered RAMs being a failsafe mechanism to safeguard against significant out / under performance. This was in the context of the proposed calibration of the RIIO-ED2 package and the historical outperformance, and for the reasons set out below.
- 8.5 Our proposal suggests that the primary RAMs threshold will be triggered at 7.75% RoRE (3% above the baseline RoRE of 4.75%) and 1.75% RoRE (3% below baseline RoRE). In extremis, the secondary threshold would come into

¹⁸² RIIO-2 SSMD Finance Annex, Paragraph 10.14, https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf

effect at 8.75% (4% above baseline RoRE) and at 0.75% (4% below baseline RoRE).

Figure 8: Illustrative RoRE ranges, ED2 average¹⁸³



8.6 Figure 9 shows the RoRE impact of various combinations of ODI performance (x axis) and totex performance (y axis), aggregated across all the licensees. For example, a 98% totex performance (ie 2% underspend) and a 0.2% ODI outperformance would give rise to a 52bps increase in RoRE. RoRE outcomes which would trigger the first RAM threshold are in yellow and the second in red.

8.7 Our consultation position suggests that to trigger the RAMs, a notional licensee would need to have a considerable underspend or overspend, either alone or in

¹⁸³ Figure excludes impact of bespoke ODIs as they are not visible on sector average basis, and BPI as the BPI is excluded from the RAMs calculation.

conjunction with a significant out or under performance against ODIs. By way of illustration, Figure 9 demonstrates that the notional licensee would need to achieve full outperformance against ODIs (2%) and 8% underspend on their totex allowances to trigger the primary threshold. This analysis suggests that there is limited probability that either the upside or downside RAMs will be triggered in the price control, but we consider it appropriate to provide this failsafe mechanism for the reasons set in this section.

Figure 9: RAM Matrix showing RoRE impact (basis points of combinations of ODIs and Totex performance)

		ODI performance (in terms of RoRE)										
		-4.0%	-3.4%	-2.8%	-2.2%	-1.6%	-1.0%	-0.4%	0.2%	0.8%	1.4%	2.0%
Totex performance (>100% is overspend)	110%	-567	-507	-447	-387	-327	-267	-207	-148	-88	-28	32
	108%	-534	-474	-414	-354	-294	-235	-175	-115	-55	5	65
	106%	-501	-441	-381	-321	-262	-202	-142	-82	-22	38	98
	104%	-468	-408	-348	-288	-228	-168	-109	-49	11	71	131
	102%	-435	-375	-315	-255	-195	-135	-75	-15	45	105	164
	100%	-401	-342	-282	-222	-162	-102	-42	18	78	138	198
	98%	-368	-308	-248	-188	-128	-68	-8	52	112	172	231
	96%	-334	-274	-214	-154	-94	-34	25	85	145	205	265
	94%	-300	-240	-180	-120	-61	-1	59	119	179	239	299
	92%	-266	-206	-146	-86	-26	33	93	153	213	273	333
	90%	-232	-172	-112	-52	8	68	128	188	247	307	367

8.8 In other aspects of our Draft Determinations we are consulting on proposals that take into account historical outperformance in RIIO-ED1.¹⁸⁴ With regards to our ODI package, we are consulting on what we consider to be challenging but achievable targets. Additionally, through the BPI and our cost assessment processes, we have set allowances that are commensurate with what is required for the DNOs to meet their statutory obligations and deliver against their outputs. On that basis, we consider the example provided in the figure to be remote.

8.9 On the upside, we 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.

¹⁸⁴ 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

- 8.10 The downside RAM threshold is symmetrical to the upside threshold. Historical performance from RIIO-ED1 suggests that there is a limited probability of this RAM threshold being triggered.¹⁸⁵ 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 ~60% 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 scenario for an individual notional licensee might reasonably fall in the range of 100-200bps RoRE, which is above the initial RAMs threshold.¹⁸⁶
- 8.11 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, in our view 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.

Adjustment rate

- 8.12 The adjustment rates are the rates at which company returns are adjusted upwards or downwards in the event that the threshold is breached.
- 8.13 In our RIIO-ED2 SSMC, we set out our view that the nearer the adjustment rate is to 100% the more it resembles a hard cap and floor regime, which we ruled out because we consider this to be distortionary to incentives.¹⁸⁷
- 8.14 As such, we consider it to be appropriate to calibrate the adjustments levels to each threshold as follows:
- 300bps above or below RoRE: adjustment of 50% applied to returns above or below the primary threshold level

¹⁸⁵ 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.

¹⁸⁶ We set out our financeability scenario analysis further in paragraphs 5.52-67.

¹⁸⁷ RIIO-ED2 SSMC Finance Annex, Paragraph 10.16, <https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-consultation>

- 400bps above or below RoRE: adjustment of 90% applied to returns above or below the secondary threshold level.
- 8.15 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.
- 8.16 As set out above, we believe that a DNO's under/outperformance in breach of the RAMs thresholds would suggest a miscalibration of the price control. We consider that the adjustment rates would protect companies as well as consumers while still maintaining a positive marginal incentive.

Consultation question on Return Adjustment Mechanisms

FQ27. Do you agree with our proposals for the RAM thresholds and adjustment rates?

9. Indexation of Regulatory Asset Value

Section summary

In this chapter, we summarise the Business Plan submissions with regards to the use of CPIH when indexing Regulatory Asset Value (RAV) for RIIO-ED2. We summarise the decisions made in our SSMD to implement an immediate switch from RPI to CPIH and set out our Draft Determinations, seeking further stakeholder views on these proposals.

This chapter should be read in conjunction with the comments and questions on inflation and real returns in Chapter 4.

Indexation of Regulatory Asset Value (RAV)

Purpose	RIIO-2 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-2 price control.
Benefits	An appropriate measure of inflation improves legitimacy and accuracy of the price base for both investors and consumers.

Background

- 9.1 RIIO-2 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 SSMD¹⁸⁸, 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
 - provide an updated position at Draft Determinations on RPI debt and basis risk.
- 9.4 The next steps set out in our SSMD were:

¹⁸⁸ RIIO-ED2 SSMD Finance Annex, Paragraphs 7.12 and 7.13,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

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&T. We received a proposal from SPEN suggesting an alternate method of accomplishing the same switch to CPIH.

Draft Determinations

- 9.6 Regarding the technical details of switching to CPIH, we propose to implement the switch to CPIH in the same way as we did for GD&T. This has been implemented in the attached RIIO-ED2 PCFM (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.

Rationale for Draft Determinations

- 9.7 Adopting the same approach as GD&T makes our price controls more consistent and therefore easier to understand for stakeholders using or referring to models from multiple sectors.
- 9.8 We considered the proposal from SPEN, and with some modifications to account for any issues regarding compounding, the approaches ought to generate the same result. We are not aware of any RIIO-ED2 specific reasons to use a different approach, and we believe our approach is sufficiently straightforward to not warrant changing the approach from GD&T.

Consultation question on indexation of the regulatory asset value (RAV)

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

10. Other finance issues

Regulatory depreciation and economic asset lives

Regulatory depreciation	
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.

Background

- 10.1 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.
- 10.2 A return is paid on the RAV 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.
- 10.3 In the RIIO-ED1 Final Determinations¹⁸⁹, 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).

¹⁸⁹ 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

Business Plan submissions

Depreciation Issues Raised	Raised by	Summary
Straight-line vs. accelerated depreciation	ENWL, NPg, SSEN, SPEN	ENWL, SSEN and SPEN all use straight-line depreciation as an assumption. NPg argue that the current policy does not spread charges fairly over time, with future consumers being overcharged compared to current consumers, and does not provide sufficient financial headroom to facilitate funding for investment needed in the late 2020s and 2030s to enable the low carbon transition. To tackle these issues, one of NPg's proposals is accelerated "backlog" depreciation of RIIO-ED1 assets during the RIIO-ED2 period.
Asset life	ENWL, SSEN, WPD, NPg, SPEN, UKPN	All companies other than NPg agree with a 45-year depreciation period. UKPN noted that any move to shorter-life information technology-based assets as part of the net zero transition could require a review of this assumption. NPg argues that the current average level of about 25 years should be used for business-as-usual assets only, while the applied 45-years asset life should only be taken into consideration to fund the longer-term additional investment required to meet the net zero target. NPg also points out that Ofgem should consider whether it is appropriate to apply 45-years asset life for net zero investment, in light of the recent HM Treasury Net Zero Review ¹⁹⁰ , which advises against passing on the costs of net zero transition onto future taxpayers, on the ground of intergenerational fairness.
Use of depreciation as a financeability lever	ENWL, SSEN, WPD, NPg, SPEN, UKPN	Generally, the companies did not agree with using depreciation as a financeability lever on the ground of intergenerational fairness. NPg argues that the current depreciation policy will make the sector less investible as, under 45 years depreciation, revenue and return on book equity would be depressed through the late 2020s and 2030s. This phase would be followed by a

¹⁹⁰ HM Treasury Net Zero Review, Page 8 and 92, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1026725/NZR_-_Final_Report_-_Published_version.pdf

		<p>period of excessive revenue and return on book equity, as RAV grows over time and more recent assets are repaid.</p> <p>NPg argues that their proposed, 25-years depreciation would contain RAV growth, thereby smoothing allowed revenue changes and stabilising financial ratios.</p>
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- 10.4 The majority of the companies are supportive of the current depreciation policy, including the asset life transition. WPD points out that this policy is the outcome of the 2011 Ofgem consultation on longer-term regulatory asset lives¹⁹¹ and was intended as a long-term, sustainable policy decision. WPD argues that re-opening this decision to address financeability issues may undermine the predictability of the regulatory regime, investors' confidence and in turn increase returns in the longer-term.
- 10.5 NPg argues that the “fast” depreciation which has been in place to date has benefitted customers up until now, by maintaining RAV and revenue at relatively low levels.¹⁹² Therefore, future consumers should also benefit from a low asset base, and this can be achieved by reducing asset life to the current average of 25-years.
- 10.6 NPg also argues that the transition to a 45-year asset life is unfair to future generations, because it would pass on to them the costs of the net zero transition. In support of this position, NPg refers to the recent HM Treasury Net Zero Review¹⁹³ and in particular to a section arguing that borrowing to pay for the costs of net zero is unfair to future taxpayers.
- 10.7 Finally, according to NPg the longer asset depreciation period will cause the investability of the sector to decline dramatically over the long term. NPg argues that the 45-years asset life policy would strain financeability through the late 2020s and 2030s, due to declining depreciation revenue as pre RIIO-ED1 assets get fully repaid over time. However, after that, increasing cash flow from a growing RAV and repayment of more recent assets would lead to excessive

¹⁹¹ Open letter consultation on the regulatory asset lives for electricity distribution assets, <https://www.ofgem.gov.uk/sites/default/files/docs/2011/01/ed-asset-lives-consultation-21000114.pdf>

¹⁹² NPg highlight that in the mid-1990s, after privatisation, the RAV was established at a lower value than the full value of the assets, while its repayment period was relatively short, at 20 years. According to NPg, the combination of low starting RAV and 20-years asset life was overall beneficial for consumers, as it maintained RAV and revenue at a lower level than they would have otherwise been, if starting RAV was set at the full asset value and depreciation to 45 years.

¹⁹³ HM Treasury Net Zero Review, Page 8 and 92, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1026725/NZR_-_Final_Report_-_Published_version.pdf

revenue and return on book equity. This could potentially give way to public and political pressure on the price control regime (and in turn raise the cost of equity). NPg concludes that this situation would be unsustainable.

10.8 To prevent these situations from occurring, NPg suggests Ofgem:

- applies the current average 25-year asset life to business-as-usual assets and considers a 45-year policy only for longer-term assets
- as the benefits of lower asset life would take too long to manifest, considers moving to a nominal allowance on the cost of debt or accelerating backlog regulatory depreciation from financial years 2016-23 (RIIO-ED1 period) during financial years 2024-28 (RIIO-ED2 period).

Business Plan assessment

10.9 In our assessment of the Business Plans we have taken into consideration submitted evidence on economic asset life and considered the implications of depreciation policy on revenue and domestic bills affordability, as well as financeability. This assessment is informed by long-term indicative expenditure plans and associated electricity demand forecasts for a range of net zero compliant scenarios, submitted by companies as part of the Business Plan process.

10.10 In their submissions, all companies, except for NPg, have confirmed (or have not presented evidence contradicting) 45-years as representative of the average economic life of the assets. Therefore, we use 45-years straight line depreciation as the starting point of our policy assessment.

10.11 Then we use the submitted long-term expenditure plan and demand forecasts to conduct a long-term assessment of revenue and domestic bills under 45-years straight line depreciation, focussed on a “Base” and “High” net zero compliant scenarios. The former corresponds to the company proposed plan, the latter to a more ambitious decarbonisation scenario, associated with the highest plausible network investment expenditure.

10.12 We note that assessing the likely impact of depreciation policy on allowed revenue and on average annual bills requires us to project expenditure and demand forecasts for several decades in the future. This creates significant uncertainty, but we do note that in some scenarios post RIIO-ED2 and in particular after older pre RIIO-ED1 assets are fully repaid, the RAV growth and

depreciation associated with the net zero investment could put some upward pressure on allowed revenue and average annual domestic bills. The uncertainty surrounding such very long-range forecasting is significant and we do not believe we can reliably provide any meaningful estimate of these impacts.

10.13 However, we observe that potential increases in revenue and bills would be reflective of the increase in domestic demand for electricity expected in the transition towards net zero, as domestic heating and transport in particular are expected to be increasingly provided by electricity-based technologies. In other words, domestic consumers are expected to make a greater use of the electricity distribution network so that, although revenue and bills could increase in the long-term in absolute terms, the average charge for unit of electricity distributed would not increase under the considered “Base” and “High” net zero compliant scenarios. This suggests that RAV, revenue and the ensuing domestic bills are sustainable in the scenarios under consideration.

10.14 We note that NPg has raised concerns that financeability would be strained post RIIO-ED2, into the late 2020s and 2030s, and that this phase would be followed by years of increasing revenue and excessive returns on book equity. However, our financeability assessment (see paragraph 5.70) conducted under 45-years depreciation, concludes that there are no short-term and longer-term financeability concerns in the forecasting period under consideration. Given the considerable uncertainty of very long-range forecasting, we are satisfied with the outcome of the financeability assessment and therefore we consider that 45-years, straight line depreciation policy does not undermine financeability.

Draft Determinations position

Allowance parameter	Draft Determinations position
Regulatory depreciation	We propose to maintain the policy of 45-years, straight line depreciation, in continuity with RIIO-ED1.

Rationale for Draft Determinations

10.15 We have reviewed the Business Plan submissions and conducted additional analysis and, as a result, we propose to apply 45-years, straight line depreciation to all RAV additions in the RIIO-ED2 period. This is a continuation of the current policy of transitioning from 20 to 45-year asset lives by the end of RIIO-ED1, as

set out in the 2011 consultation¹⁹⁴ and confirmed in the RIIO-ED1 Final Determinations.¹⁹⁵

10.16 Our proposal is based on evidence on economic life of the assets and takes into consideration potential longer-term implications on revenue and bills affordability and financeability, as outlined below:

- The Business Plan evidence suggests that the economic life of the assets is broadly matched by a 45-year assumption. As such, the current 45-years, straight-line depreciation policy does achieve intergenerational fairness, by charging current and future consumers in broad proportion to the value of network services they receive. Therefore, we do not agree with NPg that a 45-years asset life would pass on the cost of net zero transition to future generations. On the contrary, it would ensure that future consumers fund a fair share of assets that will be part of the electricity distribution network of the future.
- We have investigated potential affordability risks and found that the average charge per unit of electricity distributed would not increase under the range of plausible scenarios taken into consideration. Therefore, we are satisfied that revenue, domestic bills and the RAV are sustainable in the expected range of net zero pathways under the current 45-years straight-line depreciation policy. We acknowledge that the RAV, revenue and domestic bills may increase over time, but this would be a natural implication of the net zero compliant energy system of the future, in which electricity is expected to play a dominant role over other energy sources.
- We are satisfied that our proposed policy does not undermine financeability, as further explained in paragraph 10.14 above. Furthermore, we do not agree with using depreciation policy as a financeability lever, on the grounds of intergenerational fairness. We note that all companies, except for NPg, do not agree with changing regulatory depreciation to address financeability issues, with some highlighting that this could harm investors' confidence in regulatory certainty and predictability, and ultimately lead to long-term increase in returns.

¹⁹⁴ Open letter consultation on the regulatory asset lives for electricity distribution assets, <https://www.ofgem.gov.uk/sites/default/files/docs/2011/01/ed-asset-lives-consultation-21000114.pdf>

¹⁹⁵ 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

Consultation question on regulatory depreciation and economic asset lives

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?

Capitalisation rates

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.

Background

10.17 Capitalisation rates determine the proportion of costs added to the RAV, with the remainder recovered within the year incurred.

10.18 In our SSMC,¹⁹⁶ 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.

10.19 In our SSMD, we stated 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.¹⁹⁷ In our RIIO-GD&T2 Final Determinations,¹⁹⁸ we set different rates for ex ante allowances (including Price Control Deliverables (PCDs)) and re-openers and volume drivers. The latter generally took the form of sector-specific rather than company-specific rates.

Business Plan submissions

10.20 Submissions generally propose that rates should reflect an accounting distinction between opex and capex, and therefore be 'natural'. ENWL was the exception, suggesting decreasing their regulatory capitalisation rate from their natural

¹⁹⁶ 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

¹⁹⁷ 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

¹⁹⁸ 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

capitalisation rate of 68.0% to 65.0% for financeability reasons discussed in Chapter 5.

- 10.21 In general, networks argued that lower rates of capitalisation would not benefit credit ratings and therefore they do not consider low rates as a viable option in terms of improving financeability. Our analysis did not indicate any need for adjustments to capitalisation rates to address notional financeability issues, and so we propose to apply an estimate of the natural capitalisation rate for all licensees including ENWL.
- 10.22 NPg set its rate on the basis that it reflected a natural long-term rate which it argued avoids compounding intergenerational fairness issues caused by the change to the regulatory depreciation policy in RIIO-ED1. We discussed the regulatory depreciation policy and intergenerational fairness earlier in Chapter 10. We do not believe it is appropriate to adopt NPg's approach to the natural capitalisation rate as we are satisfied that our approach to depreciation policy does not create any intergenerational fairness issues.
- 10.23 WPD calculated the natural rate for their licensees ranged from 77.5% to 81.0% but proposed a regulatory capitalisation rate of 75.0% for all of the DNOs in its group. It proposed this on the basis that a reduction from RIIO-ED1 level brings it closer in line with rest of ED sector, that it would be reflective of greater levels of expenditure of shorter lives assets, and it would be closer to natural rate at end of RIIO-ED1. We continue, however, to take the view that the natural capitalisation rate should reflect RIIO-ED2 capex and opex.

Draft Determinations

- 10.24 In line with our GD&T Final Determinations,¹⁹⁹ we propose to set different ex ante capitalisation rates for ex ante totex allowances (including PCDs) and re-openers and volume drivers.²⁰⁰
- 10.25 We recognise that various accounting approaches and cost categorisation issues may lead to slightly different forecasts across DNOs. In order to address this issue, we propose using Ofgem's estimates of the natural capitalisation rates as the regulatory rate, as shown in Table 21 below. We show rates separately for ex

¹⁹⁹ 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

²⁰⁰ The former category also includes UIOLI allowances. The latter category also includes RPEs and the proposed transmission link to Shetland.

ante allowances (including PCDs) and for re-openers and volume drivers. We have reflected in these rates the DNOs' latest submitted data (which in some cases differs from that used to produce Business Plan submissions).

Table 21: Totex capitalisation rates for RIIO-ED2

Licensee	Ofgem proposed capitalisation rate (ex ante allowances including PCDs)	Ofgem proposed capitalisation rate (re-openers and volume drivers)
ENWL	73%	98%
NPgN	73%	98%
NPgY	75%	98%
WMID	78%	98%
EMID	79%	98%
SWALES	79%	98%
SWEST	80%	98%
LPN	71%	98%
SPN	71%	98%
EPN	72%	98%
SPD	72%	98%
SPMW	71%	98%
SSEH	68%	98%
SSES	68%	98%

Rationale for Draft Determinations position

10.26 We agree with submissions that natural rates of capitalisation are desirable. Regulatory capitalisation rates reflecting the natural rates of capitalisation help ensure, over time, that charges are fair.

10.27 Our approach of setting different rates for ex ante allowances (including PCDs) and re-openers and volume drivers is both simple (it embeds an ex ante view) and effective (the overall rate will be a weighted average/categories). This approach requires only that we forecast the rate of capitalisation rather than the monetary quantum of all re-openers and volume drivers. The overall capitalisation rate will therefore reflect the weighted average of the underlying expenditure categories, with the weight on each category dependent on future decisions for re-openers and volume drivers.

10.28 After considering any further evidence provided, we will make our final decision on capitalisation rates in Final Determinations.

Consultation question on capitalisation rates

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

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

RIIO-ED1 close-out

RIIO-ED1 Close-out	
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 a number 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

10.29 There are a number of 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)²⁰¹ adjustments, each of which may have different treatments. We have already published our close-out methodology for six of the areas of RIIO-ED1²⁰² and will further consult on the detailed implementation of these six areas as well as how to close out the rest of the RIIO-ED1 price control.

²⁰¹ 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 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.

²⁰² Decision on the methodologies for RIIO-ED1 closeout,
<https://www.ofgem.gov.uk/publications/decision-methodologies-riio-ed1-closeout>

10.30 Close out adjustments can be either positive or negative. We propose to make them in one of the following three ways and in line with what we set out in our RIIO-ED1 close-out methodology.

Legacy MOD (LMOD)

10.31 We propose to modify the existing RIIO-ED1 PCFM²⁰³ to calculate a LMOD2023/24 value based on 2021/22 actual expenditure performance as will be reported to Ofgem in July 2022.²⁰⁴

10.32 We also propose to calculate a provisional LMOD2024/25 value using forecast expenditure for 2022/23 as will be reported in the network companies' RFPR in 2022. This provisional LMOD2024/25 will be trued up in the November 2023 AIP following the receipt of actual expenditure in July 2023.

10.33 These "legacy MODt" values will be reflected in the opening revenue allowances for RIIO-2 and, depending on the magnitude, may be phased over a number of Regulatory Years. This will ensure that revenues earned in the RIIO-1 period are correctly reflected in allowances received in the RIIO-2 period.

10.34 Using the existing RIIO-ED1 PCFM to calculate these legacy MODt values would be the most straightforward and transparent way to arrive at a closing position for RIIO-ED1 as it contains all of the fixed and variable values that make up RIIO-ED1 Base Revenues.

Legacy RAV (LRAV)

10.35 As above, we propose to take the closing RAV balance, capital allowance pool balances and regulatory tax loss balance from the RIIO-ED1 PCFM that was used to calculate the provisional LMOD2022/23 value.

10.36 These closing balances will reflect actual data for 2021/22 and forecast data for 2022/23 and will be used as the opening balances for RIIO-ED2. As we will not have actual data for 2022/23, these balances represent our best estimate of opening RAV for RIIO-ED2, and we propose to keep them under review until we can close out the RIIO-ED1 price control.

²⁰³ RIIO-ED1 Price Control Financial Model for the Annual Iteration Process, <https://www.ofgem.gov.uk/publications/riio-ed1-price-control-financial-model-annual-iteration-process-november-2020>

²⁰⁴ DNOs are required to submit their reporting packs to Ofgem under standard condition 46 (RIGs).

Legacy Adjustments to Revenue (LAR)

- 10.37 We propose to use a modified RIIO-ED1 Revenue Regulatory Reporting Pack (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. These are revenues and costs such as pass-through items, the revenue correction factor and non-totex incentives and will be calculated for the 2023/24 regulatory year, for which we will have actual data.
- 10.38 The revenue adjustments for the 2024/25 year will contain forecast data and we propose to keep them under review until we can close out the RIIO-ED1 price control.
- 10.39 The values within the RIIO-1 Revenue RRP are subject to a number of true-up calculations that do not take place within the PCFM, which adds a certain level of complexity to the process of updating them.
- 10.40 For inflation and time value of money true-ups that will take effect in RIIO-ED2, we propose to implement the calculation of these within the RIIO-ED2 PCFM rather than the legacy RIIO-ED1 Revenue RRP. This will simplify the process of updating and running the close-out models.

Draft Determinations position

- 10.41 We propose 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 that is known to us at the time, until we are able to formally close out the RIIO-ED1 price control.
- 10.42 Where we have used estimates due to an absence of outturn data, these will be trued up at a subsequent AIP once that outturn information becomes available.

RAV opening balances

RAV opening balances	
Purpose	To ensure the accuracy of opening balances at the start of RIIO-ED2.
Benefits	The opening RAV balance drives a number 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

- 10.43 Companies submitted estimated values through the Business Plan financial model for their opening RIIO-ED2 RAV balances which included actual and forecast information to bridge the reporting lag²⁰⁵ between finalising RIIO-ED1 and the beginning of RIIO-ED2.
- 10.44 We have reviewed the reasonableness of the submitted opening RAV balances for the RIIO-ED2 PCFM, by comparing them against the closing RAV balances in the RIIO-ED1 PCFM.²⁰⁶
- 10.45 Once we have received the outturn data for the final two years of RIIO-ED1, we will settle the final values for these close-out items and, similarly, we will settle the final RAV impacts. For now, companies have used estimates to calculate a RAV impact, and this has been factored into the opening RAV balance that they have submitted.
- 10.46 In RIIO-ED1, opening RAV would have been a fixed value adjusted by legacy RAV variable value term as set out in the Price Control Financial Handbook, but we have proposed a different process of inputting legacy RAV additions for RIIO-ED2.²⁰⁷

Draft Determinations position

- 10.47 We propose opening RAV balances to be determined by the closeout/legacy process described above, by taking the RIIO-ED1 RAV additions as inputs to the

²⁰⁵ The final closing balances will not be determined until the closeout of the ED1 price control, which is not possible to commence until regulatory reporting is received in the summer of 2023.

²⁰⁶ RIIO-ED1 Price Control Financial Model for the AIP, <https://www.ofgem.gov.uk/publications/riio-ed1-price-control-financial-model-annual-iteration-process-november-2021>

²⁰⁷ Latest price control financial handbooks for RIIO Network Operator licensees, <https://www.ofgem.gov.uk/publications/latest-price-control-financial-handbooks-riio-network-operator-licensees>

RIIO-ED2 model. Until the closeout of RIIO-ED1, a forecast of the opening RAV balance will be used.

- 10.48 In RIIO-ED2, we propose to make all historical net RAV additions a variable value, and so the value opening RAV will not be finalised until after the closeout of RIIO-ED1.

Rationale for Draft Determinations

- 10.49 We propose to forecast the closing RIIO-ED1 RAV balances as opening RAV balances for RIIO-ED2 because final closing balances for RIIO-ED1 will not be known until we have completed the close-out of the RIIO-ED1 price controls, which we expect will take place by November 2024.
- 10.50 In the meantime, we have reflected forecast expenditure data in the RIIO-ED1 PCFM to be able to calculate a provisional closing balance in the absence of actual outturn data.
- 10.51 These closing balances represent our best estimate of opening RAV for RIIO-ED2 and remain under review until we can close out the RIIO-ED1 price controls.
- 10.52 This proposal is made for consistency with the approach to close-out described in the previous section.

Consultation question on RAV opening balances

FQ32. Do you have any views on the use of forecast RAV opening balances for the start of RIIO-ED2, which will be trued-up following RIIO-ED1 closeout?

Directly Remunerated Services

Directly Remunerated Services (DRS)	
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

- 10.53 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.²⁰⁸

- 10.54 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.
- 10.55 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.
- 10.56 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 ED 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.
- 10.57 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.

Update

- 10.58 Company submissions provided very limited detail of any strategy for approach to DRS during RIIO-ED2.
- 10.59 As we set out in our SSMD, we aim to ensure consistency in the numbering of the DRS categories across all sectors, and hence we intend to renumber the DRS categories in the ED 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 BPDT guidance issued as part of our SSMD.

²⁰⁸ 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

10.60 We note stakeholder feedback on the CLASS consultation²⁰⁹, and we plan to publish our decision on this policy area later this year. Any CLASS policy decision will consider the financial impact on networks in RIIO-ED2, and there will be a further related licence consultation, if required.

Amounts recovered from the disposal of assets

Amounts 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

10.61 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 TIM.²¹⁰ 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.²¹¹

10.62 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
- cash proceeds of sale of assets as scrap

²⁰⁹ Regulatory treatment of CLASS as a balancing service in RIIO-ED2 network price control, <https://www.ofgem.gov.uk/publications/regulatory-treatment-class-balancing-service-riio-ed2-network-price-control-2022-consultation>

²¹⁰ RIIO-ED2 SSMD Finance Annex, Paragraphs 8.73-8.77, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

²¹¹ 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

- amounts recovered from third parties, including insurance companies, in respect of damage to the disposed assets.²¹²

10.63 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 sales of assets to a company within the licensee group. It 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, 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 amounts of the proceeds from a third party
- the factors which they consider account for any difference between the transferred amount 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.

10.64 In our SSMD, we asked companies to propose as part of their Business Plans their strategy on the disposal of assets. Further, any proposed change from the RIIO-ED1 approach 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.

Update

10.65 Company submissions provided very limited detail of any strategy for disposal of assets during RIIO-ED2.

10.66 As set out in our SSMD, we consider that the deduction of net proceeds from totex provides an appropriate level of incentivisation for the network to achieve the best sale price and allows consumers to benefit from the sale of assets no longer required. For RIIO-ED2, the totex adjustment will continue to be capitalised in the normal way, with a proportion flowing through as (negative) fast money, and the rest being deducted from RAV. However, we consider there might be a case to treat all of the incentivised net proceeds as fast money,

²¹² 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.

especially for those assets already fully depreciated. Treating the net proceeds as fast money would better allow those consumers who have already paid for the assets, rather than future consumers, to gain from the sale proceeds. We will consider this further during RIIO-ED2 and consult on it, as appropriate.

- 10.67 The RIGs will provide guidance on how companies should report on disposals of assets, and how the amounts recovered from third parties for network damage are reported within totex.

Equity-related notional company assumptions

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 wish to reflect in our assessment of allowed revenues and financeability.
Benefits	Fair assumptions will allow us to appropriately model, and, given our view on issuance costs, fairly remunerate the notional company.

Background

- 10.68 We decided in our SSMD that licensees will be required to report annually and explain their approaches to dividends over the RIIO-ED2 price control period along with any factors that will influence their dividend policies.²¹³ As these are natural monopolies and regulated companies, we considered it appropriate for licensees to explain their approaches over the RIIO-ED2 price control period along with any factors that influence these policies. In our view, this will provide evidence that their approaches to dividends are in consumers’ interests and will help to support the legitimacy of the licensee’s regulatory performance and efficiency over the price control period.²¹⁴

²¹³ RIIO-ED2 SSMD Finance Annex, Page 66,
<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

²¹⁴ ED2 SSMD Finance Annex, Page 80,
<https://www.ofgem.gov.uk/publications/riio-ed2-sector-specific-methodology-decision>

- 10.69 We provided a working assumption for notional company dividends of 3% of equity RAV.²¹⁵ This was the same level as set in the RIIO-GD&T2 Final Determinations.²¹⁶
- 10.70 For equity issuance, we provided a working assumption of 5% of equity value raised.²¹⁷ This was the same level as set in the RIIO-GD&T2 Final Determinations.
- 10.71 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.²¹⁸

Business Plan submissions

- 10.72 SSEN stated that under Ofgem's assumptions, to maintain a dividend yield of 3% of RAV, the network would need to raise substantial further equity from investors thus giving a negative cash dividend yield over the price control.
- 10.73 ENWL said "pension funds have traditionally been providers of long-term patient capital into the infrastructure sector, but they require predictable and attractive dividend yields to fund payments to pensioners".
- 10.74 WPD stated "we note that Ofgem has set a working assumption of a 3% dividend yield, which differs from the RIIO-ED1 assumption of a 5% dividend yield, and does not align with investor expectations of stable dividend growth".
- 10.75 WPD noted that the utilities sub-index of the FTSE All-Share averaged a 5.3% yield between January 2009 and January 2019 vs an All-Share average dividend yield of 4%. They said that because of the switch from indexation of RAV and returns from an RPI basis to a CPIH basis, investors will require a higher current yield to compensate for the lower RAV growth. They noted that the energy networks may experience a reduction in interest from investors and that this was the case for the water sector post the publication of the PR19 determinations. They also suggested that there was an outflow from investors of around 10% at the time of the Brexit vote and that the share prices of the leading energy utility

²¹⁵ ED2 SSMD Finance Annex, Page 69, *ibid*.

²¹⁶ RIIO-2 Final Determinations Finance Annex, Page 138, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

²¹⁷ RIIO-ED2 SSMD Finance Annex, Paragraph 8.48, *ibid*.

²¹⁸ RIIO-ED2 Business Plan Guidance, Page 64, <https://www.ofgem.gov.uk/publications/riio-ed2-business-plan-guidance>

companies also fell over the same period: National Grid (by 9%), Centrica (by 66%) and SSE (by 17%).

- 10.76 NPg said that: “our dividend policy is only to pay dividends after having due regard to available distributable reserves, available liquid funds and the financial resources and facilities needed to enable us to carry on our business for at least the next year”.
- 10.77 SPEN stated that they viewed a dividend yield of 4% on the equity proportion of the RAV as more appropriate. They noted that this was lower than the assumption of 5% used in DPCR5 and RIIO-ED1. They stated that the average yield of UK listed network utilities (including water) was 4.4%, ranging from 3.6% for Seven Trent to 5.1% for National Grid. On this basis they argued the Business Plan working assumption of 3.0% was materially below investor expectations.
- 10.78 Very few companies made any specific mention of the allowance for new equity issuance. ENWL said they had no plan for equity issuance during RIIO-ED2. SSE proposed no alternative values but said that they would “continue to review market evidence”. SPEN referred us to an annex, but we found no further mention of the issue there.

Draft Determinations position

- 10.79 We propose a dividend yield assumption of 3.0% of equity RAV and an assumption on the cost of raising new equity of 5.0%.

Rationale for Draft Determinations

- 10.80 We do not agree with the argument by the DNOs that investors have a required level of dividend yield to which Ofgem as regulator must pay heed to ensure their financeability. If there was to be an outflow of investor money from the sector due to low dividends, as suggested by WPD, we would expect to observe network companies’ values at substantial discounts to their RAVs and what we observe both for quoted companies and in private transactions is the contrary. For example, after the CMA had issued its provisional determination in RIIO-2 GD&T appeals, which had found Ofgem was not wrong to set its cost of equity at 4.55%, which we note was lower than RIIO-ED1, and to set a dividend yield of

3.0% of equity RAV, SSE sold its 33.3% shareholding in SGN for a price which approximated to an Enterprise Value to RAV multiple of 1.3x to 1.35x.²¹⁹

- 10.81 We noted that NPg and ENWL in particular signalled that the actual dividend policy of the companies would be set by what was financially prudent for the company at that time. We agree that this is the case and that companies can choose a level of dividends which is appropriate for their investor base, subject to being financially prudent.
- 10.82 One of the key tenets of finance theory is the dividend irrelevance argument made by Modigliani and Miller, who demonstrated that investors should be indifferent between return from dividends and returns from capital appreciation.²²⁰ Thus, we believe the value of network companies to investors is in the total returns they generate not in the dividend yield that they pay. Although companies argued for higher dividend yields, they did not all include levels of dividend cover (EPS/ DPS) or payout ratio (1/ dividend cover) in their analysis. If companies pay a lower dividend yield, but reinvest those earnings in the business, then that should lead to higher returns for investors in the future.
- 10.83 We note that the question of what the appropriate dividend yield should be was considered by the CMA in its Final Determinations in the GD&T2 appeals regarding alleged errors in GEMA's financeability assessment and the adjustments to the notional company. The CMA stated that:

"The change to dividend yield assumption appeared to be broadly appropriate given that allowed return on equity had fallen from 6.7% (RPI-real) in RIIO-1 to 4.3% (CPIH-real) in RIIO-2, and we agreed with GEMA that, in principle, the dividend should reflect the growth and returns expected in the price control, not the other way around. In addition, we were not aware of any evidence that the absolute level of notional dividends had been guaranteed in the past, but in any event, we did not consider such changes 'out of bounds' for the regulator".²²¹

²¹⁹ SSE agrees sale of stake in SGN for £1.225bn,

<https://www.sse.com/news-and-views/2021/08/sse-agrees-sale-of-stake-in-sgn-for-1-225bn/>

²²⁰ Brearley, R. Meyers, S.C. Principles of Corporate Finance. International 7th Edition. 2003. P441-444.

²²¹ CMA Final determination Volume 2A: Joined Grounds: Cost of Equity, Paragraph 5.995, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf

- 10.84 We believe that our view aligns with the CMA's conclusions in the GD&T2 appeals. We do not believe there are significant differences between the ED sector and the GD&T sectors which would justify pursuing a different assumption on dividend yield for the ED sector.
- 10.85 We said in the RIIO-2 GD&T Final Determinations that 5% was likely to be a high estimate of the cost of raising new equity. We considered evidence (presented by SGN) of costs for a public equity fundraising of 4.6% plus other (unquantified) costs. On the other hand, we noted that public fundraisings typically have underwriting costs of c. 3.5% and that for network companies which are privately owned, these costs would not apply.²²²
- 10.86 We continue to believe that our working assumption of 5% is a reasonable (even generous) estimation of the costs of raising new equity for a DNO. In the absence of new evidence or any other compelling reason to deviate from our working assumption, we propose to set the level at 5%.

Pension scheme established deficit funding

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

- 10.87 We update the networks' pension allowances through a triennial review, the policy and process for which we updated in April 2017.²²³ We completed the last review in November 2020.²²⁴ The next triennial review will take place in November 2023 and we intend to set the established deficit pension allowance

²²² RIIO-2 Final Determinations Finance Annex, Page 138, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

²²³ 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>

²²⁴ 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>

from 1 April 2024. This review will sit outside the RIIO-ED2 price controls for all sectors.

Ofgem decisions to date

10.88 In line with our SSMD 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.²²⁵

10.89 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.

²²⁵ RIIO-ED2 SSMD Finance Annex, Paragraph 8.53,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

Transparency through RIIO-ED2 reporting

Executive director remuneration and dividends	
Purpose	Annual reporting to provide an understanding of 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	Help build customers' and other stakeholders' trust and confidence that the regulatory regime is protecting consumers' interests. Transparency leads to accountability, healthy cultures and good outcomes for consumers.
Corporate ownership and governance framework	
Purpose	Non-financial reporting of corporate ownership structures, regulated company governance, and decision-making processes, 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 consumers' interest.

Background to executive director remuneration and dividend policies disclosures

10.90 When developing the RFPR²²⁶, we discussed our proposal to require disclosure of executive director remuneration with network companies. We also proposed that we would require details of their dividend forecasts as part of the licensees' annual RFPR.

10.91 In our RIIO-ED2 SSMC²²⁷, we said that in our view there is a need for licensees to report their executive director remuneration and dividend policies on an annual basis for the same reasons as set out in the RIIO-GD&T2 Draft Determinations.²²⁸ We therefore proposed in our SSMC that we would require licensees to report annually on executive director roles in relation to the regulated business, and how executive director remuneration reflects the company performance and adds

²²⁶ Direction to introduce Regulatory Financial Performance Reporting (RFPR), <https://www.ofgem.gov.uk/publications/direction-introduce-regulatory-financial-performance-reporting-rfpr>

²²⁷ RIIO-ED2 SSMC Finance Annex, Paragraphs 9.6 and 9.9, https://www.ofgem.gov.uk/system/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf#page=31

²²⁸ RIIO-2 Draft Determinations Finance Annex, Paragraphs 11.77-11.80 and 11.84-11.87, https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_finance.pdf#page=167
Also see our RIIO-2 Final Determinations Core Document, https://www.ofgem.gov.uk/system/files/docs/2020/12/final_determinations_-_core_document.pdf

value for consumers. We said that this reporting should provide the same level of disclosure for each executive director, as found in the statutory accounts for listed companies, with regard to fixed and variable pay, and additional governance (eg share ownership). We also said that this should include a narrative explaining the allocation of executive director remuneration to the regulated business and how the variable pay relates to performance outcomes and benefits consumers.

- 10.92 As regards dividends, we said that as natural monopolies and regulated companies, we also consider it appropriate for licensees to explain their approaches to dividends over the RIIO-2 price control period along with any factors that will influence these policies and we proposed to require licensees to report on these. In our view, this will provide evidence that their approaches to dividends are in consumers' interests and will help to support the legitimacy of the licensee's regulatory performance and efficiency over the price control period.
- 10.93 As such, we said in our RIIO-ED2 SSMD that DNOs will be required to report annually on executive director remuneration and executive director roles in relation to the regulated business, and how executive director pay reflects the company's performance and adds value for consumers. Companies will also be required to report annually on their approaches to dividends.

Stakeholder responses

- 10.94 We have engaged at length with stakeholders in relation to these corporate governance issues.
- 10.95 In response to the consultation on the introduction of the RFPR into the RIGs for RIIO-ED1 and RIIO-ET1 in April 2019²²⁹, some ED stakeholders expressed concerns over the proposals for executive director remuneration disclosure and details on dividends forecasts.
- 10.96 Some stakeholders did not support including more detail around executive director remuneration on the basis that this information is provided in the Statutory Financial Statements for UK-listed public limited companies, where it is subject to external audit. Further, they did not feel that the RFPR information

²²⁹ Direction to introduce Regulatory Financial Performance Reporting (RFPR), <https://www.ofgem.gov.uk/publications/direction-introduce-regulatory-financial-performance-reporting-rfpr>

should be subject to the same reporting standards for non-UK listed public limited companies.

10.97 In response to our RIIO-ED2 SSMC of July 2020²³⁰, most DNOs expressed concerns and disagreed with additional reporting requirements. However, Citizens Advice supported Ofgem’s initiative for this additional reporting. Responses to this consultation are summarised below:

- ENWL stated that current reporting requirements are sufficient and executive pay disclosures can create a barrier to promotion and recruitment/retention of talent in the industry. Also, it disagrees with a requirement to disclose dividend policies and does not see the purpose of doing so when there is already an incentive/penalty regime and gearing limitation in place that affects the expected rate of return and dividends.
- SSEPD, NPg, WPD and SPEN also disagreed with additional reporting requirements for executive remuneration. In their view, this information is already included in their statutory financial statements prepared under the statutory accounting framework subject to an external audit. They also disagreed with additional reporting requirements on their dividend policies.
- SSEPD, NPg and WPD stated that Parliament, the Financial Conduct Authority and relevant exchange (where their securities are listed) are the appropriate authorities to set rules for good corporate governance and disclosures of directors’ remuneration.
- NPg also stated that if Ofgem wants to pursue this further, it could consider gathering information at an aggregate level with a high-level explanation involving cross-referencing to the company’s accounts.
- In SPEN’s view, different formats and unaudited additional information may lead to confusion and misinterpretation.
- Citizens Advice welcomed greater openness and accountability to Ofgem from licensees, linking these annual disclosures to the performance of the regulated businesses. They stated that it is important that companies incentivise their staff’s performance appropriately.

²³⁰ RIIO-ED2 SSMC Finance Annex, Page 31,
https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf

10.98 In July 2021 we also set out our intent to engage with licensee company chairs and sufficiently independent non-executive directors (SIDs) on these matters.²³¹

10.99 Issues were raised in response to the RIIO-2 RFPR consultation in April 2022, which dealt with transparency requirements for GD&T companies for 2022.²³² As well as echoing the concerns above, some respondents to the consultation were not supportive of the proposed reporting on executive director remuneration and requested that individual executive director pay figures be redacted from publication on the grounds of commercial sensitivity or data protection, though limited specific rationale was provided to explain and substantiate these concerns.

Ofgem view

Summary

10.100 We have considered stakeholders' concerns (provided in other scenarios as described above) regarding these additional reporting requirements. However, we remain of the view that this reporting is necessary because we believe that this will protect the interests of consumers in line with GEMA's principal objective, and as further explained in our RIIO-ED2 SSMC²³³ and the decision in relation to GD&T companies.²³⁴ On that basis, we are now proposing further transparency reporting requirements for RIIO-ED2.

10.101 As part of dealing with the concept of legitimacy of the price control, we consider that disclosure of corporate governance information within regulatory reporting, including executive remuneration and dividend payments and policies, provides beneficial transparency to consumers and other stakeholders. This transparency

²³¹ Invitation to provide input in relation to effective board leadership, governance and transparency in the energy sector,

https://www.ofgem.gov.uk/sites/default/files/2021-07/20210709%20Board%20leadership%20letter_Martin%20Cave.pdf

²³² Notice of proposed modifications to the Regulatory Financial Performance Reporting (RFPR) template and guidance for RIIO-2,

<https://www.ofgem.gov.uk/publications/notice-proposed-modifications-regulatory-financial-performance-reporting-rfpr-template-and-guidance-riio-2>

²³³ RIIO-ED2 SSMC Finance Annex, Paragraphs 9.7 and 9.10,

https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf

²³⁴ Decision on modifications to the Regulatory Financial Performance Reporting (RFPR) template and Regulatory Instructions and Guidance (RIGs) for RIIO-2,

<https://www.ofgem.gov.uk/publications/decision-modifications-regulatory-financial-performance-reporting-rfpr-template-and-regulatory-instructions-and-guidance-rigs-riio-2>

builds customers' and other stakeholders' trust and confidence that the regulatory regime is protecting consumers' interests.

Executive Director Remuneration

10.102 There has been increased scrutiny of executive director pay in regulated sectors and how this impacts consumer interests over recent years, and similar approaches have been adopted in other sectors.²³⁵ Disclosure of individual executive remuneration figures is required in the statutory accounts for listed companies, and has been adopted sector-wide among regulated water companies, and so this information is already available in comparable settings. Our view is that the reporting and publication of this information will promote the interests of consumers, and we have considered this against any arguments provided to-date around commercial sensitivity. As monopoly providers of an essential service, it is important that licensees' dividend and remuneration policies are transparent to promote accountability towards consumers, and to clarify the links of these policies to the performance and consumer obligations of the regulated business. Transparency can also promote good outcomes for consumers by engaging reputational incentives and influencing positive policies and behaviours. This is particularly important considering monopoly companies' dominant positions.

10.103 While it is not our intention to design or put restrictions on licensees' remuneration policies, we do expect these policies to be transparent and in the best interests of consumers and stakeholders in supporting the licensees' regulated businesses.

Dividend policy

10.104 As with our view on executive director remuneration, we consider that transparency around a licensee's dividend policy is equally important for building consumers' and other stakeholders' trust; however it is also not Ofgem's intention that a company's dividend policy should be prescriptive over the price control period so we will not require licensees to provide a dividend forecast but

²³⁵ For example, see Ofwat PR19: Putting the sector back in balance, <https://www.ofwat.gov.uk/publication/putting-sector-back-balance-summary-ofwats-decision-issues-pr19-business-plans/>

rather that they provide transparency of how their approach to dividends relates to the overall performance of their regulated businesses.

10.105 We also consider that companies disclosing their approaches to dividends would provide transparency that any dividends paid are reflective of the company's performance, including in relation to meeting consumer needs, over a price control and would provide Ofgem, consumers and stakeholders with a more complete understanding of this.

Corporate Ownership and Governance Frameworks

10.106 We have recently set out new requirements for licensees to report on their ownership, board governance and decision-making, as part of the RIIO-2 RFPR decision published on 1 June 2022, see paragraph 10.100 for GD&T companies for 2022. We now propose to introduce the same governance disclosure requirements into RIIO-ED2 RIGs, covering corporate ownership, transparency on matters reserved to a parent company, board composition, and regulated company committee structures.

10.107 In our view, this reporting – to be structured collectively as a 'corporate governance statement' – will also help build customers' and other stakeholders' trust and confidence that the regulatory regime is protecting consumers' interests.

10.108 We recognise that network companies already provide corporate governance disclosures in their statutory accounts, and that listed network companies disclose executive remuneration. While we understand that there is a degree of cross-over, the proposed requirements are focussed on the regulated business (for example, disclosure of sufficiently independent directors, detail on matters reserved to parent company, and a focus on how remuneration/dividend policies align with delivery for customers), improving transparency in how network companies operate and how decisions are made. This can lead to greater accountability by enabling consumers and other stakeholders to better engage and scrutinise licensees' actions and regulatory performance. Furthermore, statutory requirements on licensees differ depending on their corporate and legal structures. The proposed transparency reporting requirements seek to ensure that this information is provided consistently across regulated companies.

Draft Determinations position

10.109 As natural monopolies and regulated companies, and based on the reasons set out above, we propose that licensees report annually on executive roles in relation to the regulated business, and how executive pay reflects the company performance and adds value for consumers.

10.110 We also propose to require licensees to report annually on their approaches to dividends and any factors that will influence their dividend policies. We propose to require companies to link their dividend policies to customer and stakeholder obligations.

10.111 Further, we propose to require narrative disclosures related to the regulated company's governance and decision-making frameworks.

10.112 Subject to the outcome of this consultation, guidance on these additional reporting requirements will be set out as part of a RIGs and RFPR consultation in due course.

Consultation question on transparency through RIIO-ED2 reporting

FQ33. Do you agree that additional corporate governance reporting described (including on executive director remuneration and dividend policies), will help to improve the legitimacy and transparency of a company's performance under the price control? If not, please outline your views in relation to the rationale provided for these additional requirements, including consumer protection.

Annual Iteration Process

Continuous forecasting of variable values	
Purpose	Provide a process of continuously updating allowed revenue and reporting of regulatory data
Benefits	Increasing transparency and reducing overall regulatory burden

Background

10.113 The AIP for the PCFM allows us to recalculate 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.

10.114 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.

Draft Determinations position

Consolidated reporting and calculation of allowed revenue

10.115 We propose to design the RIIO-ED2 PCFM such that the total allowed revenue (instead of Base Revenue) is calculated therein. This means including output incentive adjustments, outturn pass-through values, and any other variables previously not part of Base Revenue in the RIIO-ED2 PCFM.

10.116 Consolidating all revenue into the PCFM will remove duplicative inflation and time value of money adjustments, and mean that post-tax incentives will have a tax allowance provided by the PCFM, rather than adjusting the incentive rate as was done in RIIO-ED1.

10.117 Under our licence drafting proposals, opening revenue allowances will no longer need to be set out in the licence. Instead, the values would be "whatever they are" according to the calculations in the PCFM with the most up-to-date data inputs. Therefore no MOD term will be directed like in RIIO-ED1. The revenue calculation is continually and dynamically calculated (or recalculated). Any updates to data for historical years will be trued up using a correction mechanism.

Licensee self-publication of allowed revenue

10.118 We propose to require licensees to update and publish the PCFM themselves in RIIO-ED2, in accordance with the licence, PCFM handbook, and related guidance. With a self-publication requirement, licensees would be responsible for calculating their own Allowed Revenue values and publishing the PCFM on their websites with charging statements.

10.119 Ofgem would continue to publish a consolidated version for the sector annually and incorporate any modifications to the PCFM and all updates to variable values.

Best vs reasonable endeavours in charge setting

10.120 The RIIO-ED1 licence requires DNOs to use reasonable endeavours in setting their charges to ensure Regulated Distribution Network Revenue does not exceed its Allowed Distribution Network Revenue.

10.121 We propose to require licensees use best endeavours rather than reasonable endeavours in setting network charges to ensure that recovered revenue equals allowed revenue.

Rationale for Draft Determinations

Consolidated reporting and calculation of allowed revenue

10.122 The proposed consolidated reporting and approach to calculating allowed revenue increases transparency by ensuring all data is made public within one model. We believe this will simplify licence drafting and make the licence easier to read and use while providing consistency with the other regulated sectors.

Licensee self-publication of allowed revenue

10.123 In feedback from a working group, the concept of self-publication has received general support. There have been qualifications around there being sufficient guidance, and Ofgem will endeavour to provide this guidance.

10.124 We believe this proposal to be a continuation of the decisions we made in the RIIO-GD&T2 price controls, that is, to move away from a directed AIP in recognition that the licence itself determines how much revenue licensees can collect. Moving towards a process that can run with less intervention from the regulator would also enable licensees to more easily reflect changes to their variable values where those are subject to volatile fluctuations and would make the price control more cost-reflective. This proposal has received broad support from licensees in our discussions to date.

10.125 We do not consider it necessary to direct variable values as part of the Annual Iteration Process, as we will still be responsible for the ultimate calculation of allowed revenue and the methodologies for deriving the PCFM Variable Values that go into that calculation by creating the licence algebra, setting values within that algebra such as unit costs and directing changes to values under various mechanisms in the licence such as re-openers.

10.126 The PCFM Variable Values and the methodologies under which they can be revised for each AIP will be specified in the special conditions of the licence, the RIGs, and the Price Control Financial Handbook ('the handbook'), which the Authority will create and amend.

Best vs reasonable endeavours in charge setting

10.127 The impact of the best endeavours change is to require the DNOs to do their best. This is more stringent than making a reasonable effort, but does not require DNOs to achieve the requirement at any cost nor, as has been suggested by some DNOs, does it require DNOs to make attempts to lobby Ofgem to alter the regulatory framework.

10.128 The obligation to constrain network charges to collect the allowed amount of revenue is arguably the most fundamental obligation in the price control. It is the obligation that gives effect to the name "price control". We believe it is right to expect more than reasonable endeavours to comply with such a fundamental obligation. Additionally, as set out above we have proposed to allow licensees to self-publish the value of allowed revenue they determine with the PCFM. As licensees are being given more control in the process of setting Allowed Revenue, we consider the greater degree of responsibility in charge-setting is also appropriate.

10.129 We would also note that the gas distribution and transmission sectors have a best endeavours obligation. While consistency is not a reason for best endeavours in and of itself, there should be a reason for inconsistency between sectors. We do not believe there is any good reason for maintaining 'reasonable endeavours' only in the ED sector.

10.130 It may not be possible precisely to define the limits of what best or reasonable endeavours requires in all cases in advance. In a joint letter DNOs submitted some concerns to Ofgem regarding the implications of a best endeavours obligation. The concerns fell broadly into two categories:

- That a best endeavours obligation may conflict with guidance in the Price Control Financial Handbook or charge-setting framework that constrains a licensee from using a value it may consider is more accurate.
- That the considerable uncertainty in some variable values, when charges are set in the ED sector more than 15 months ahead of the regulatory year, would

mean a best endeavours obligation could be costly to provide high-quality forecasts and with little benefit to energy consumers.

10.131 On the first point, the RIIO-ED2 licence drafting proposed to date would require the licensee to use a model and handbook provided by Ofgem, where the handbook will give specific guidance on how to forecast some variables. This licence obligation has equal status to the charge-setting obligation, and we would consider the best-endeavours requirement to work within, not around, and be informed by the existing price control framework including the handbook and charge-setting timelines. Where the handbook sets out a particular inflation forecast methodology, we would require the licensee to do its best in accurately applying and inputting the results of the stated methodology as opposed to making any attempt to contradict it. If a licensee has a view that a prescribed methodology could be efficiently and unambiguously improved, this can be raised via the Price Control Financial Model Working Group, but any change would have to be implemented by the Authority and not via the DNO's obligations in charge setting.

10.132 Secondly, we recognize that some variables are inherently difficult to forecast more than 15 months in advance. Our view is that 'doing one's best' is not inconsistent with acknowledging practical difficulties and limits to the charge-setting task. We consider that a DNO would do its best if it were to act as a prudent, determined and reasonable DNO acting properly in its own interests and anxious to achieve the result set out in the obligation. We disagree that a best endeavours obligation implies a level of effort would have to be expended that is harmful to customers. 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.

Questions on consolidated reporting and calculation of allowed revenue

FQ34. What are your views on the proposed consolidation of the revenue RRP and PCFM, or applying a fully dynamic concept of allowed revenue?

Questions on licensee self-publication of allowed revenue

FQ35. What are your views on allowing licensees to self-publish the PCFM with their charging statements, rather than relying on an Ofgem publication or direction to determine allowed revenue?

Questions on best vs reasonable endeavours in charge setting

FQ36. What are your views on having a best endeavours obligation for charge setting: "The licensee must, when setting Network Charges, use its best endeavours to ensure that Recovered Revenue equals Allowed Revenue"?

Interest on prior year adjustments (time value of money)

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

Treatment in RIIO-1

10.133 Ofgem makes three kinds of revenue true-ups relating to prior years, to which it applies a rate of interest:

- Historical revisions to PCFM inputs (eg 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).

10.134 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.

10.135 We refer to these rates of interest as the Time Value of Money (TVOM) associated with that true-up.

RIIO-GD&T2

10.136 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.²³⁶

10.137 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.

10.138 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.

10.139 In our Final Determinations²³⁷ we decided to retain two separate rates 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 will consult on any proposed changes to our TVOM approaches.

RIIO-ED2 SSMD

10.140 In our SSMD, we said:

We will continue to review the case for the application of one TVOM applicable to all revisions and corrections and will engage further with other GB regulators and with industry on this issue, drawing upon the experience of the new RIIO-2 AIP arrangements. Where appropriate,

²³⁶ 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

²³⁷ 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

we will consult on any proposed changes to our current TVOM approaches.²³⁸

10.141 Since our SSMD, we have sought and received feedback from DNOs and other stakeholders regarding the application of a single TVOM. Networks that responded to the working group questions all opposed using a short-term debt rate, and generally preferred the status quo or a WACC-only rate, were there to be only one.

Draft Determinations position

10.142 We propose 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.

Rationale for Draft Determinations

10.143 As stated in RIIO-GD&T2 Draft Determinations²³⁹, we continue to believe that there are good arguments in support of a short-term cost of debt interest rate for true ups that are separable and low risk (constituting only cash flow timing risk). We also acknowledge arguments favouring nominal WACC, and that it may be more appropriate when true-ups are large (such as delayed and uncertain investment funding). We also understand that in practice, actual companies may bundle capital, suggesting the opportunity cost is WACC.

10.144 Bundling all forms of prior-year adjustments into one pot suggests that WACC may be the more appropriate rate, as WACC would better compensate for delays in funding projects through re-openers, earned incentives, and other values that are uncertain.

10.145 This bundling, along with DNO representations, and the view of the CEPA report commissioned by Ofgem²⁴⁰ that nominal WACC can serve as a valid "anchor point" as both return and the time value of money, has satisfied us that WACC is an appropriate rate to use.

²³⁸ RIIO-ED2 SSMD Finance Annex, Paragraph 11.53,
https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

²³⁹ RIIO-2 Draft Determinations Finance Annex, Paragraph 11.59,
https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=163

²⁴⁰ See 'Prior Year Adjustment Uplifts Annex', part of the zip package 'Technical Annexes 2',
https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_technical_annexes_part_two_2.zip

10.146 We consider that this is preferable to retaining the status quo because in RIIO-ED2 (as opposed to RIIO-GD&T2) we are also proposing to require companies to self-publish their allowed revenue (see Annual Iteration Process section). Unlike RIIO-ED2, in RIIO-GD&T2 companies are required to make use of revenue calculations that Ofgem publishes. In these cases, Ofgem is more directly involved in the process than is proposed for RIIO-ED2. In our proposals, DNOs would hold responsibility for both self-publishing their allowed revenue and setting network charges. If two different interest rates are applied to different forecast errors (both controllable by the licensee), it is potentially gameable through offsetting forecast errors. Therefore, we believe it is in consumers' interests to standardise the time value of money together with our AIP proposals.

Consultation questions on the appropriate time value of money

FQ37. What are your views on applying a single time value of money to all prior year adjustments, based on nominal WACC?

Forecasting during RIIO-2

Revenue 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

10.147 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.

10.148 To reflect updates more quickly, reduce the magnitude of true-ups, and streamline reporting, our proposal is that RIIO-ED2 will incorporate forecasts in a similar manner to RIIO-GD&T2 Final Determinations. PCFM variable value guidance for GD&T is under development; for common variables, we expect the guidance will be similar for RIIO-ED2.

10.149 We have been engaging 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.

10.150 We have 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%.

10.151 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 forward-looking basis. 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.

Draft Determinations position

Use of forward-looking forecasts within RIIO-ED2

10.152 We propose that whenever a DNO uses the PCFM to determine allowed revenue, the most up-to-date view of all variable values is used. This includes updating historical outturn data and revising forecasts where necessary. In practice, the Price Control Financial Handbook 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:

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.

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.
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Forecasting penalty mechanism

10.153 We propose that the existing forecasting penalty mechanism is split in two parts:

- A penalty based on charging error: that is 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 Ofgem may waive some or all the penalty by direction, if the error is caused by factors outside the reasonable control of the licensee.
- A penalty based on base revenue²⁴¹ forecasting error: that is 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 Ofgem may waive some or all the penalty by direction, if the error was caused by factors outside the reasonable control of the licensee.

Rationale for Draft Determinations

Use of forward-looking forecasts

10.154 As licensees would be able to use the best view of variable values throughout the price control (rather than fixing forecasts five years in advance), it is our view that reflecting forecasts within the PCFM is more likely to reduce the magnitude of revenue true-ups and better match revenue to expenditure, enabling networks to better manage their cash flows and reducing revenue volatility for network operators and their customers.

²⁴¹ Our proposed definition for base revenue in ED2 includes fast pot expenditure, non-controllable opex, RAV depreciation, and return.

10.155 We note that forecasting re-opener allowances will allow revenues to be more closely linked to output delivery, will further aid cost-reflectivity of allowances, and will enable us to adapt allowances to any changes in network companies' circumstances with less delay.

10.156 We recognise that adjusting revenue on a forward-looking basis (as opposed to a historical true-up only basis) makes charges less predictable, however, we consider the existing 15-month notice period in the electricity distribution sector materially mitigates this concern as it provides certainty over prices to suppliers.

Forecasting penalty mechanism

Charging error

10.157 This proposed mechanism remains effectively the same as the RIIO-ED1 mechanism, (as in RIIO-ED1 the value of allowed revenue would not change retroactively). The 6% threshold would maintain the RIIO-ED1 value. The proposed 1.15% penalty rate is consistent with GD&T, which is beneficial to simplicity as the same penalty margin will be applied across all sectors in the next few years. The original penalty rate was based on the short-term cost of debt margin on which the RIIO-ED1 penalty was based.

Revenue forecasting error

10.158 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.

10.159 During engagement prior to Draft Determinations, all DNOs raised concerns about an allowed revenue forecasting penalty. DNOs proposed broadly that:

- a monitoring-only regime was sufficient;
- the potential uncertainty in forecasting allowed revenue was significant, and merited either a high penalty threshold, or narrowing the scope of the mechanism.

10.160 We agree that some components of allowed revenue, such as inflation or incentive performance, may prove difficult to forecast. While one could argue that the option to waive penalty interest is sufficient for these cases, we do not wish these waivers to be routine. Therefore, we have narrowed the scope of the penalty mechanism so that it is based on a subset of revenue and does not

include inflation forecasting. We believe this strikes the right balance between penalising poor forecasts but focusing the mechanism to more controllable components of revenue.

10.161 We propose the penalty rate mirrors the charging forecast error penalty rate (1.15%), as we see no reason to distinguish one source of error from another.

10.162 We are proposing a penalty threshold of 6% after examining the information in Table 22 below. The table shows the largest changes in recalculated base revenue in the RIIO-ED1 period. Intuitively, the deviations are larger in later years, as there are forecasts from earlier in time. However, base revenue in RIIO-ED1 does not restate non-controllable opex, so the values are understating the full range of base revenue. With variable value forecasting, licensees would not need to forecast a full five years ahead. Given that the average change even in year five is only 3.17%, a 6% threshold ought to be more than sufficient to cover routine forecast error. We also re-iterate that for exceptional events, we have proposed a waiver mechanism.

Table 22: Change in Recalculated Base Revenue (largest recalculated value divided by smallest recalculated value, in 12/13 prices)

Network	2015/16	2016/17	2017/18	2018/19	2019/20
EMID	1.05%	1.21%	0.75%	2.14%	2.83%
ENWL	0.43%	1.18%	1.15%	2.88%	3.33%
EPN	2.77%	2.85%	2.37%	2.70%	2.31%
LPN	3.62%	3.02%	2.48%	3.75%	2.52%
NPgN	0.38%	0.47%	1.18%	2.90%	3.22%
NPgY	0.40%	1.06%	1.65%	2.04%	2.18%
SPD	0.54%	0.72%	1.17%	1.03%	1.36%
SPMW	1.75%	2.85%	2.41%	2.86%	3.48%
SPN	3.99%	4.57%	4.22%	5.44%	4.55%
SSEH	1.12%	0.62%	0.93%	1.52%	6.61%
SSES	2.09%	2.28%	1.45%	3.63%	3.64%
SWALES	0.60%	1.23%	0.80%	1.89%	2.81%
SWEST	0.67%	1.26%	1.20%	2.04%	3.06%
WMID	0.39%	1.04%	0.56%	2.17%	2.48%
Average	1.41%	1.74%	1.59%	2.64%	3.17%

Question on forecasting

FQ38. What are your views on our proposed approach to using forecasts within RIIO-ED2?

Questions on forecasting penalty mechanism

FQ39. What are your views on the proposed charging penalty mechanism?

FQ40. What are your views on the proposed revenue forecasting penalty mechanism?

Lags on incentives

Lags on incentive performance	
Purpose	Removing lags on incentive performance
Benefits	Ensuring consistency and simplicity of revenue calculation

Background

10.163 In 2012, Ofgem decided to introduce lags to incentive performance.²⁴² 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.

10.164 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.

10.165 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.

10.166 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 position

10.167 We propose to remove lags on incentives, so that performance and revenue are aligned to the same year.

²⁴² 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

Rationale for Draft Determinations

10.168 We believe the benefits in simplifying the licence algebra and making the entire revenue calculation consistent within the PCFM is to make the calculation of revenue more transparent and understandable to stakeholders.

10.169 We recognise that removing lags, like using forecasts, reduces the potential predictability of allowed revenue; however, provided Ofgem makes a considered, deliberate choice about the appropriate notice period for charging, we consider there is no need to introduce multiple layers of predictability-related policies.

Consultation question on incentive lags

FQ41. What are your views on removing lags from incentives?

Creating consistency in baselines for ODI incentive rates, caps, or collars

Baselines for determination of 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

10.170 Ofgem sets 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.

10.171 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.

10.172 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.

10.173 In our SSMD, we typically expressed potential incentive values in the same way as RIIO-E1 (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 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"²⁴³ (as now included all revenue); it excluded second order effects such as the tax allowance.

10.174 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.

Draft Determinations position

10.175 We propose 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 conversion would be done to respect the overall intended incentive strength, by back-solving to the same £m of the incentive on a sector average basis.

10.176 In this conversion, we propose to use the RIIO GD&T2 definition of base revenue²⁴⁴, 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

10.177 We propose to fix a set of RAV values in our Final Determinations, defining a licence term Ex ante Regulatory Equity (EARE), which would be set in the licence as fixed values. Any relevant incentives, caps, or collars 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 notional gearing.

²⁴³ RIIO-2 Draft Determinations Finance Annex, Paragraph 11.99, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf

²⁴⁴ Ibid.

Rationale for Draft Determinations

Use of Return on Regulatory Equity

10.178 We propose that basing incentives on RoRE is preferable to base revenue.

Although both measures scale to network size or activity, RoRE has the following advantages:

- RoRE is a measure that is more directly relevant to investors. Returns to investors ultimately provide motivation for strong delivery on incentives.
- RAV will generally be more stable than revenue, which can be influenced by large pass-through costs due to unusual circumstances (eg large Supplier of Last Resort (SoLR) costs).
- On a go-forward basis beyond RIIO-ED2, a convention of using regulatory equity sizes potential rewards or penalties based on the notional gearing of the company. We view this as reasonable, because all else equal a £1m reward is a less significant return to a company with lower notional gearing.

10.179 The impact of this change across RIIO-ED2 is mostly presentational, as we propose to calibrate the RoRE values based on £m from the original base revenue proposals. However, the impact on a network-by-network basis is set out below.

Fixing values at Final Determinations

10.180 In proposing a fixed set of values, we provide clarity about the value of incentives in cash terms, and therefore a more stable basis on which to make investment decisions.

10.181 This proposal follows the RIIO-ED1 approach, which uses a licence value which does not change by year.

Translating base revenue incentives to RoRE

10.182 The calibration of incentive rates, caps and collars in £m terms involves regulatory judgement, with the objective to reasonably scale incentives across the different networks in the sector.

10.183 We proposed to exclude equity issuance because it is a second order calculation, and we observed it could create a circularity if the live definition of base revenue was ever used in another calculation. The impact of the change in definition from

the Business Plan financial models has limited financial impact, summarized in the table below.

Table 23: Comparing definitions of base revenue, annual average £m 20/21 prices

Network	BPFM Definition	Excluding equity issuance	Change %
EMID	350.0	349.0	-0.30%
ENWL	265.2	264.5	-0.30%
EPN	328.7	327.7	-0.30%
LPN	387.4	386.1	-0.30%
NPgN	389.3	388.0	-0.30%
NPgY	194.8	194.1	-0.30%
SPD	279.4	278.5	-0.30%
SPMW	331.3	330.4	-0.30%
SPN	325.6	324.7	-0.30%
SSEH	498.5	497.1	-0.30%
SSSES	354.9	353.9	-0.30%
SWALES	356.5	355.5	-0.30%
SWEST	253.1	251.3	-0.70%
WMID	478.3	477.1	-0.30%

10.184 We proposed to use the sector average to avoid the complexity of all networks having a different incentive strength in RoRE terms when the values involve an element of discretion in the first place. The impact of using a sector average to convert a % of base revenue into % RoRE is set out in the table below.

Table 24: Effect of using sector average RoRE on a 1% base revenue incentive by network, £m 20/21 prices, annual averages over RIIO-ED2.

Network	ED2 Base Revenue	Value of 1% base revenue	Avg Regulatory Equity	RoRE Impact of 1% base revenue	£m using sector average 0.39%	Impact of using sector average on 1% base revenue
	[A]	[B]=[A]*1%	[C]	[D] = [B]/[C]	[E] = Avg[D]*[C]	[E] - [B]
ENWL	349	3.5	878.3	0.40%	3.4	-0.07
NPgN	264	2.6	631.0	0.42%	2.5	-0.19
NPgY	328	3.3	870.3	0.38%	3.4	0.11
WMID	386	3.9	1114.7	0.35%	4.3	0.48
EMID	388	3.9	1135.0	0.34%	4.4	0.54
SWALES	194	1.9	566.1	0.34%	2.2	0.26

SWEST	278	2.8	857.6	0.32%	3.3	0.56
LPN	330	3.3	749.9	0.44%	2.9	-0.38
SPN	325	3.2	784.7	0.41%	3.1	-0.19
EPN	497	5.0	1200.8	0.41%	4.7	-0.29
SPD	354	3.5	830.9	0.43%	3.2	-0.30
SPMW	355	3.6	929.5	0.38%	3.6	0.07
SSEH	251	2.5	603.7	0.42%	2.4	-0.16
SSES	477	4.8	1153.2	0.41%	4.5	-0.28
Average				0.39%		

10.185 The networks that had a lower base revenue to regulatory equity ratio (relative to the sector average) has a higher incentive value in £m under the RAV approach. For the reasons set out already, we believe there are good reasons to scale an incentive to the amount of regulatory equity, and therefore these adjustments are proportionate, and the overall impact small compared to revenue.

Table 25: Relative levels of regulatory equity and base revenue between networks (average of RIIO-ED2, 20/21 prices)

	Ratio of Base Revenue divided by regulatory equity [A]	Network ratio compared to sector average [A] / Avg[A]
ENWL	0.40	2%
NPgN	0.42	8%
NPgY	0.38	-3%
WMID	0.35	-11%
EMID	0.34	-12%
SWALES	0.34	-12%
SWEST	0.32	-17%
LPN	0.44	13%
SPN	0.41	6%
EPN	0.41	6%
SPD	0.43	9%
SPMW	0.38	-2%
SSEH	0.42	7%
SSES	0.41	6%

10.186 In Table 26, we have rounded the RoRE values by incentive to the nearest 0.05% for ease of presentation. The financial ODI (ODI-F) values in the original proposed incentive strength and RoRE equivalent are presented in the table below.

Table 26: Proposed RoRE equivalent of ODI-Fs scaled on base revenue

Incentives based on BR	Base Revenue		RoRE	
	Upside	Downside	Upside	Downside
Customer Satisfaction Survey	1.0%	-1.0%	0.40%	-0.40%
Complaints	0.0%	-0.5%	0.00%	-0.20%
Time to Connect	0.4%	-0.4%	0.15%	-0.15%
Major Connections	0.0%	-0.9%	0.00%	-0.35%
Vulnerability Incentive	0.5%	-0.5%	0.20%	-0.20%
Collaborative Streetworks (LPN bespoke)	0.5%	0.0%	0.20%	0.00%

Values for ODI caps and collars in the round

10.187 If measured in constant prices, the RIIO-ED2 proposals result in lower caps for output incentive rewards and penalties than RIIO-ED1 (in most cases); this is because:

- revenue is forecast to be lower in RIIO-ED2 than RIIO-ED1;
- the definition of base revenue used in the Business Plans excludes some revenue that would have been included in RIIO-ED1.

10.188 The impact on individual networks may vary, depending on their overall revenue compared to regulatory equity in both RIIO-ED1 and RIIO-ED2.

10.189 We have set out a table in Appendix 10 that shows what the effective caps would be by incentive, by network, and compared them to RIIO-ED1 where a comparable value was available.

10.190 Overall, we believe the level of the caps strike an appropriate balance in protecting DNOs and customers.

Consultation question on baselines for ODI incentive rates, caps, and collars

FQ42. What is your view on using RoRE as a general baseline for describing ODI caps, rather than base revenue?

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)?

FQ44. What is your view on the method of calibrating incentive caps in RoRE terms, or the overall proposed incentive caps?

Bad debts

Removal of bad debt terms from Pass Through licence condition	
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

10.191 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.

Treatment in RIIO-1 ED, GD, ET and GT

10.192 There was no formal mechanism in any of the Transmission special licence conditions to allow for the recovery of bad debts as these costs represented a very low cash flow risk for the Transmission Operators.

10.193 The RIIO-ED1 Gas Distribution Special Licence Condition 1C contained a Miscellaneous pass-through term, which was included within the pass-through principal formula. This was not a specific term for bad debt, but a more generic term, which required a direction by the Authority.

10.194 The RIIO-ED1 licence contained CRC 2B Part I (Calculation of the Eligible Bad Debt adjustment (EBDt)) a specific pass-through term designed to recover amounts associated with any Eligible Bad Debts.

10.195 The RIIO-ED1 licence also contained CRC 2B Part J (Calculation of the COVID-19 Bad Debt term (CBDt)) a specific pass-through term designed to recover amounts associated with any bad debts resultant from the COVID-19 Scheme.²⁴⁵

²⁴⁵ The COVID-19 Scheme means the DNOs COVID-19 Optional Use of System Charges Extended Payment Terms Scheme (the "Scheme") that was in operation from 9 June 2020, and a document of that name is published on the Energy Networks Association's website.

Consultation Position

10.196 We are proposing not to include the EBDt and CBDt in the RIIO-ED2 pass-through licence condition, and adjust the Recovered Revenue²⁴⁶ term 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&T2.²⁴⁷ Bad debt will need to still be reported through the RIGs for reporting purposes. Where the Recovered Revenue term is adjusted for unrecovered bad debt, this should be noted in the AIP commentary. DNOs will still be able to recover bad debt through the K correction factor by reporting recovered revenue on a cash basis, so that the bad debt incurred is recorded as an under-recovery.

Rationale for consultation position

10.197 The reason for these changes is to ensure that we record Recovered Revenue on a cash basis. If we kept the EBD and CBD terms, this would result in needing to record the licensee's Recovered Revenue as billed. Recovered revenue as billed means that 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.

10.198 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.

10.199 Therefore, the effect of removing the EBDt and CBDt term from the pass-through condition will require licensees 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 propose to also 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.

²⁴⁶ 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.

²⁴⁷ Statutory Consultation to modify the Price Control Financial Instruments and Licence conditions for Gas Transmission and Gas Distribution, <https://www.ofgem.gov.uk/publications/statutory-consultation-modify-price-control-financial-instruments-and-licence-conditions-gas-transmission-and-gas-distribution>

10.200 Where potential bad debts relating to the RIIO-ED1 period crystallise during the RIIO-ED2 price control, we propose to reflect an estimate of these amounts in our Final Determinations for the ED companies with the intent to true-up these estimates once the actual amounts are known.

Consultation question on bad debts

FQ45. What are your views on our proposal to remove the Bad Debt terms from the pass-through licence condition?

Supplier of Last Resort recovery

SoLR Recovery	
Purpose	Align payments to SoLRs with changes to Allowed Revenue
Benefits	Consistency with the gas sector. Reduced complexity.

10.201 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 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.

10.202 Our proposal is 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.

10.203 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.

10.204 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.

Revenue profiling over RIIO-ED2

Revenue profiling	
Purpose	To re-allocate revenue between years in an NPV-neutral fashion
Benefits	The potential benefits are open to consultation

Background

10.205 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.

10.206 For RIIO-ED2, one DNO put forward a Business Plan financial model that proposed an alternate revenue profile, delaying revenue towards the end of the price control.

Draft determination position

10.207 We have not included any profiling adjustments in the PCFM published with Draft Determinations. However, we would welcome stakeholder feedback about whether and if so, to what extent Ofgem should allow revenue profiling in RIIO-ED2.

Rationale for Draft Determinations

10.208 For the assessment of the Business Plans we have started from the assumption that no revenue profiling is necessary. The revenue is based solely on culmination of price control policies and expenditure in each year.

10.209 However, we would welcome feedback from stakeholders on the extent to which Ofgem should allow revenue profiling.

Next steps

10.210 Following the receipt of stakeholder feedback, Ofgem will engage with stakeholders on any potential re-profiling, and incorporate any decision into the models published at Final Determinations.

Consultation question on revenue profiling

FQ46. Should Ofgem re-allocate or re-profile revenue throughout the RIIO-ED2 price control period and if so, what profiles would be in consumers' interests?

Appendices

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Appendix 1 - Draft Determinations on the allowed return on capital

Table 27: Frequent debt issuers (EMID, ENWL, EPN, NPgY, SPD, SPMW, SPN, SSEH, SSES, SWEST and WMID), financial years ending March 31

Component	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Equity						
Annual cost of equity	4.69%	4.73%	4.77%	4.78%	4.79%	4.75%
Allowed return on equity	4.69%	4.73%	4.77%	4.78%	4.79%	4.75%
Debt						
Cost of debt allowance (17-year trailing average)	2.47%	2.39%	2.28%	2.15%	2.01%	2.26%
Notional gearing	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
Allowed return on capital	3.36%	3.32%	3.28%	3.20%	3.12%	3.26%
WACC	3.36%	3.32%	3.28%	3.20%	3.12%	3.26%

Table 28: Infrequent debt issuers (LPN, NPgN and SWALES), financial years ending March 31

Component	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Equity						
Annual cost of equity	4.69%	4.73%	4.77%	4.78%	4.79%	4.75%
Allowed return on equity	4.69%	4.73%	4.77%	4.78%	4.79%	4.75%
Debt						
Cost of debt allowance (17-year trailing average)	2.53%	2.45%	2.34%	2.21%	2.07%	2.32%
Notional gearing	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
Allowed return on capital	3.39%	3.36%	3.31%	3.24%	3.16%	3.29%
WACC	3.39%	3.36%	3.31%	3.24%	3.16%	3.29%

Appendix 2 - Debt and financeability: consultants' reports and our comments

Consultancy report D1:

Author	Prepared for	Report
KPMG	ENWL	Critical review and comparison of analysis by Frontier Economics, SGN and NGN of the infrequent issuer premium December 2021

Point raised	Ofgem consideration and response
KPMG critique a report from Frontier Economics in September 2020 'Transaction cost premium for infrequent debt issuers' and Ofgem's previous position around an infrequent issuer premium.	We welcome the additional commentary provided in relation to the Frontier report and address the points raised below.
There are different reasons why a premium could be applied for a smaller issuer. This includes illiquidity costs on bonds, higher issuance costs (with fixed costs spread over a smaller amount), costs relating to pre-funding and higher costs due to more limited ability to match the cost of debt index.	<p>We agree with KPMG that smaller issuers have choices around how to manage their debt issuance when faced by this potential challenge. They can choose to issue smaller sized debt more frequently or increase the size of issuance by issuing less frequently.</p> <p>We do not agree with KPMG that the more limited ability to match the cost of debt index is necessarily a direct cost. The cost of debt index is made up of a trailing average of daily debt costs. This is intended to capture a suitable estimate of debt costs at the industry level. There is not an expectation that every network will perfectly match a cost of debt index, based on daily yields.</p> <p>Each network will have different levels of RAV growth to fund a profile of maturing debt and a mix of debt sources. We consider that risk against the allowance should be borne by equity holders, rather than consumers.</p> <p>A network may choose to hedge risk relating to the cost of debt, whether they</p>

	<p>are a small or large issuer. This represents a management choice, based on the relevant benefits and costs from doing so. It is unclear that the costs of hedging differ materially for a network issuing benchmark-sized debt, for example, every 13 months compared to a network issuing benchmark-sized debt every 12 months.</p>
<p>The arguments proposed by SGN and NGN at RIIO-GD/T2 sought a premium on new debt for different reasons. The SGN approach focused on the use of CMSs to manage the risk of mismatch. The NGN approach focused on illiquidity costs of debt.</p> <p>A 6bps adjustment on the overall cost of debt for SGN and NGN reflects different assumptions in relation to the proportion of new debt – SGN’s proposal included a 26bps increase on the new debt, while NGN’s included only a 15bps.</p>	<p>We agree that the logic for a premium differed in the approaches proposed by SGN and NGN, ie one reflected costs facing a small infrequent issuer and the other reflected costs of a small frequent issuer.</p> <p>For RIIO-GD&T2, the two approaches proposed by SGN and NGN gave equivalent additional costs/ premium at the overall cost of debt level.</p>
<p>Use of CMS does not remove credit risk, so represents an imperfect hedge against the additional risk posed.</p>	<p>We agree that a CMS does not remove credit risk, but does mitigate a degree of risk. As noted above, this is a company choice on managing risk associated with debt.</p> <p>We consider that it is an appropriate basis for making an allowance for an infrequent issuer, as accepted at the GD&T2 Final Determinations for the SGN approach.</p>
<p>Pricing of a CMS is impacted by the size of the company, with ENWL being three times smaller than the combined SGN group.</p>	<p>We welcome further evidence on the cost of CMS for companies in ED2 from relationship banks to help inform our final position.</p> <p>The infrequent issuer premium of 6bps for ED2 implies a larger uplift on new debt than was the case in GD&T2.</p>
<p>The Frontier report (being critiqued by KPMG) implies a premium should apply to embedded debt, as well as new debt.</p> <p>SGN noted features that mitigated against risks in the past eg monoline wraps, EIB loans and issuance in US private placements. This is less relevant for ENWL.</p>	<p>We have not found systematic or consistent underperformance of smaller networks’ issuance or smaller networks consistently underperforming larger networks in terms of their overall cost of debt to justify a premium being applied on embedded debt.</p>

	<p>We note that the cost of debt allowance is calibrated based on industry debt costs. In RIIO-ED2, the network RAV sizes are typically more homogenous than across RIIO-GD&T2 networks.</p>
<p>CMA precedent supports the application of a premium on both embedded and new debt in this context.</p>	<p>We consider that our approach is consistent with precedent. The Bristol Water example referenced is a materially smaller network in terms of the asset base, with a move away from more significant premiums in more recent determinations.</p>
<p>Frontier's estimate of illiquidity costs is 9bps, based on the difference in bid-ask spreads across two samples, spread over the life of respective bonds (assumed to be 10 years).</p>	<p>Illiquidity costs are relevant for where sub-benchmark sized debt is issued.</p> <p>We note that this estimate is lower than assumed by NGN in RIIO-GD&T2, but still has scope to be overestimated due to use of smaller assumed debt sizes and spreading costs over 10 years, rather than the longer debt assumed as part of our cost of debt allowance.</p>
<p>Frontier's estimate of issuance costs is 9-11bps for the small frequent issuer (with average issuance size of £108m), or 1bp for the small infrequent issuer. This is based upon an estimate of fixed costs converted to an annualised cost estimate, spread over the life of bonds (assumed to be 10 years).</p>	<p>As above, the additional costs relating to issuance is most prominent with the issuance of sub-benchmark sized debt.</p> <p>Similarly, we have concerns that this estimate may be overestimated due to the smaller assumed debt sizes and spreading costs over 10 years, rather than a tenor more consistent with the debt index tenor.</p>
<p>The cost of carry is estimated to be 20-22bps for the small infrequent issuer, based upon the difference between the interest cost paid and the interest rate earned on the cash balance in short-term cash deposits. The infrequent issuer is assumed to issue debt every three years, with pre-funding of at least one year.</p>	<p>KPMG's approach sets out the cost of carry for a small infrequent issuer in this case. However, it is based on the assumption that debt is issued every three years – this is significantly less frequent than would be necessary to achieve benchmark sized debt and therefore creates a much higher cost of carry than would be the case under our preferred assumptions.</p>

	An allowance is provided under transaction costs for the cost of carry for the notional entity.
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Consultancy report D2:

Author	Prepared for	Report
NERA	ENA	ED2 Additional costs of borrowing, June 2021

Point raised	Ofgem consideration and response
NERA retains an estimate of transaction costs of 7bps, with no exclusions made by NERA.	Our data set matches that used by NERA, with one exception – namely a 2009 ENWL bond that differs significantly to other data points.
NERA proposes a cost of carry estimate of 9-19bps, rejecting Ofgem's use of RFPR and Group cash holdings, with two prominent issues – namely Treasury functions being undertaken differently (Group vs OpCo) and end-year snapshots managing down cash positions. NERA suggests that the cash requirement is increasing to at least 5% of RAV in RIIO-2, versus 2.5% in RIIO-1 – UMs are one driver over the need for operational cash. Net carry cost estimated using the Utilities index and overnight LIBOR.	Our estimate of the cost of carry (10bps) is aligned with the range produced by NERA. In arriving at this position, we have looked at both the Group and OpCo holdings. This figure sits at the top end of what we consider to be plausible. We consider that this accounts for the possibility of a slighter greater need for cash in RIIO-2. We note that we use a 3-month deposit rate rather than overnight rate in our calculations.
NERA includes 9bps for the liquidity / RCF cost, drawing upon an assumption that the RCF is half-drawn and with assumptions on the interest on the liquidity facility (LIBOR + 35bps) and utilisation fee (20bps of drawn amount). NERA considers that the RCF is used to meet pre-financing needs and utilisation fees and interest costs are additional to the cost of debt allowance.	We do not consider that we need to include an additional allowance above the cost of debt and transaction costs to account for drawing down on the RCF, as costs associated with debt should be compensated as part of the core allowance on debt (ie before the application of additional costs of borrowing).
NERA includes estimates of 7bps for a New Issue Premiums, with no halo effect applied. The analysis excludes callable bonds and has other technical differences	Our updated analysis finds greater evidence of a positive halo effect, ie outperformance of the notional index on an 'on the day' basis.

<p>to the previous analysis conducted by Ofgem.</p>	<p>NERA’s own analysis finds outperformance in recent years of the utility index with the pandemic. We do not consider that there is a strong enough justification to include a halo effect. The reasons for this include a small sample size, a small, calculated impact, and interactions with our proposed calibration approach.</p> <p>As discussed in the RIIO-GD&T2 Final Determinations, we still consider it appropriate to use the pricing date, exclude SSE and include broader bond sample on callable bonds. Limited new evidence has been presented that would justify changing this position.²⁴⁸</p> <p>We note that NERA now does include tap issuance in its sample, which is consistent with our proposed methodology.</p>
<p>NERA proposes costs associated with inflation-linked issuance of 6bps, based on a 35% average proportion of new debt, 25% ILD, 50bps new CPI/CPIH debt allowance costs and 12.5bps for managing basis risk on embedded debt.</p>	<p>We welcome NERA’s change on managing basis risk allowance to 12.5bps from 50bps, as per our assumptions.</p> <p>The 30bps we are proposing to address basis mitigation risk on new debt utilises the lower part of NERA’s range, relying primarily on spreads at issue rather than secondary yields.</p>
<p>NERA considers that all networks should receive an infrequent issuer premium. £150m as a threshold is considered low, but NERA considers both maturing debt (1 / 17th of debt RAV) and 60% of RAV growth, based on 5% annual growth.</p> <p>NERA estimates a premium of 9-17.5bps. The lower bound is based on a CMS-implied premium of 26bps and 35% new debt weight. The upper bound is based upon a 50bps liquidity premiums, based on bid-ask spread differentials on sub-benchmark sized debt, with a 35% new debt weight assumption.</p>	<p>We have set out in Chapter 2 our proposed approach to calculating an infrequent issuer premium. This is based on a £150m annual issuance threshold.</p>

²⁴⁸ RIIO-2 Final Determinations Finance Annex, Appendix 3, Response to Consultancy Report 18, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

Consultancy report D3:

Author	Prepared for	Report
NERA	SPEN	Cost of Capital for SPEN at RIIO-ED2, June 2021

Point raised	Ofgem consideration and response
Ofgem's assessment of the additional borrowing costs and the infrequent issuer premium is insufficient to cover efficient costs.	We have discussed transaction costs in detail within this Appendix in discussing the first two consultancy reports, and in Chapter 2 (paragraphs 2.22 to 2.40).

Consultancy report D4:

Author	Prepared for	Report
Oxera	SSEN	ED2 Cost of Debt and Financeability, November 2021

Point raised	Ofgem consideration and response
<p>Both the notional and actual cost of debt analyses suggest that Ofgem's allowed cost of debt broadly provides sufficient funding for RIIO-ED2.</p> <p>However, it is possible that SHEPD and SEPD are underfunded when interest rates rise and/or transactions costs exceed Ofgem's proposed allowance. Transaction costs are underfunded by up to 20bps. A small company issuer premium of 6bps should be allowed.</p>	We have discussed transaction costs in detail within this Appendix in discussing the first two consultancy reports, and in Chapter 2 (paragraphs 2.22 to 2.40).

Appendix 3 - Equity: A summary of consultants' reports and our comments

Consultancy report E1:

Author	Prepared for	Report	Length	Date
Frontier Economics	WPD	COST OF EQUITY ASSESSMENT FOR RIIO ED2 An updated report prepared for WPD ²⁴⁹	~26 pages	16 Nov 2021

Point raised	Ofgem consideration and response
<p>For the Risk-free Rate (RFR), Frontier consider both ILGs and corporate bonds (iBoxx AAA) support a range of -1.61% to -0.65% (CPIH real).</p> <p>Frontier note the CMA's finding in the GD&T appeals that Ofgem's use of ILGs was not wrong.</p>	<p>Frontier's suggestion is in line with the working assumption of -1.16% presented in Ofgem's March 2021 SSMD.</p> <p>We remain of the view that ILGs provide a good benchmark for the RFR (see paragraph 3.12 for further information).</p> <p>We agree with Frontier that the CMA did not find the use of ILGs for the RIIO-GD&T2 price controls was wrong and we agree that this is a relevant consideration for RIIO-ED2.</p>
<p>For the Total Market Return (TMR), Frontier use the Dimson Marsh Staunton (DMS) dataset to identify a range of 6.0% to 7.7% (CPIH real). However, Frontier refer to CMA's recent work (PR19 and RIIO-2 appeals) and exclude:</p> <ul style="list-style-type: none"> • some averaging methods (Cooper and DMS) • the CED/RPI series • an outlier from the lower end which supports 6%. <p>Frontier then suggest an attenuated range of 6.3% to 6.9% (CPIH real). Frontier say:</p>	<p>We welcome Frontier's submission that the TMR is lower than the CMA's PR19 at the upper end and mid-point. We agree with Frontier that it may be reasonable to exclude some estimation approaches in order to focus on a preferred approach. In particular, we agree that it could be reasonable to exclude the CED/RPI series.</p> <p>We agree with Frontier that the CMA did not find Ofgem's TMR assumption for the RIIO-GD&T2 price controls was wrong and we agree that this is a relevant consideration for RIIO-ED2.</p>

²⁴⁹ COST OF EQUITY ASSESSMENT FOR RIIO ED2 An updated report prepared for WPD, <https://yourpowerfuture.westernpower.co.uk/downloads-view/41760>

<p>"... [O]ur range is also lower than that of CMA's PR19 both on the upper end and the midpoint, due in part to our exclusion of CED/RPI data points and in part to the updated DMS 2021 data that includes the 2020 equity returns."</p> <p>Frontier note the CMA's finding in the GD&T appeals that Ofgem's TMR estimate (6.5%) was not wrong.</p>																												
<p>For the notional equity beta Frontier suggest a range of 0.76 to 0.82, based on:</p> <ul style="list-style-type: none">• 60% notional gearing• a debt beta of 0.075• an unlevered beta low end of 0.30 based on water networks• an unlevered beta high end of 0.36 based on NG and other European comparators and an attenuated unlevered beta range of 0.31 to 0.34. <p>Frontier's paper refers to NG as a 'pure play energy network' and to the following European utilities:</p> <table><tr><th>Comparator</th><th>Network Type</th><th>Country</th></tr><tr><td>Elia Elia</td><td>ET</td><td>Germany</td></tr><tr><td>Red Electrica</td><td>ET</td><td>Spain</td></tr><tr><td>Enagas</td><td>GT</td><td>Spain</td></tr><tr><td>Endesa</td><td>ED</td><td>Spain</td></tr><tr><td>REN</td><td>ET</td><td>Portugal</td></tr><tr><td>REN Terna Rete Terna Rete</td><td>ET</td><td>Italy</td></tr><tr><td>Snam</td><td>GT</td><td>Italy</td></tr><tr><td>Enel</td><td>ED</td><td>Italy</td></tr></table> <p>Frontier note the CMA's finding in the GD&T appeals that Ofgem's beta estimate (0.31) was not wrong.</p>	Comparator	Network Type	Country	Elia Elia	ET	Germany	Red Electrica	ET	Spain	Enagas	GT	Spain	Endesa	ED	Spain	REN	ET	Portugal	REN Terna Rete Terna Rete	ET	Italy	Snam	GT	Italy	Enel	ED	Italy	<p>We agree with Frontier that some weight should be placed on water data. Frontier's Table 3 shows that most unlevered water betas are below 0.3 (two examples of 0.27 are shown).</p> <p>NG is not a pure play UK electricity distribution network, given its operations in the US and its unregulated business.</p> <p>Frontier's European comparators will introduce country-specific issues that may not be relevant for a pure play UK energy network.</p> <p>We agree with Frontier that transmission networks are a relevant comparison for electricity distribution networks.</p> <p>We agree with Frontier that National Grid plc is a relevant comparator for GB electricity distribution networks.</p> <p>We agree with Frontier that the CMA did not find Ofgem's beta assumption for the GD&T2 price controls was wrong and we agree that this is a relevant consideration for ED2.</p>
Comparator	Network Type	Country																										
Elia Elia	ET	Germany																										
Red Electrica	ET	Spain																										
Enagas	GT	Spain																										
Endesa	ED	Spain																										
REN	ET	Portugal																										
REN Terna Rete Terna Rete	ET	Italy																										
Snam	GT	Italy																										
Enel	ED	Italy																										
<p>For aiming up, Frontier suggest 40bps could be considered appropriate for RIIO-ED2, given the CMA precedent of 25bps in the water re-determinations (PR19) and that the harm from failure to invest are likely to be</p>	<p>Frontier do not:</p> <ul style="list-style-type: none">• provide sufficient detail on the merits or principles for aiming up																											

<p>greater for electricity distribution networks than in water.</p>	<ul style="list-style-type: none"> • provide robust evidence to support aiming up by 40bps for RIIO-ED2 • provide objective evidence for a material amount of aiming up for RIIO-ED2. <p>We note that in the GD&T2 price control appeals, the CMA concluded that GEMA's decision not to aim up was not wrong.</p>
<p>Frontier suggest an overall cost of equity of 4.37% to 5.54% (CPIH real).</p> <p>Frontier note the CMA's finding in the GD&T appeals that Ofgem's cost of equity estimate was not wrong.</p>	<p>We welcome Frontier's low-end cost of equity of 4.37%, which is closer to 4% than 5%.</p> <p>We agree with Frontier that the CMA did not find Ofgem's cost of equity assumption for the RIIO-GD&T2 price controls was wrong and we agree that this is a relevant consideration for RIIO-ED2.</p>

Consultancy report E2:

Author	Prepared for	Report	Length	Date
Oxera	Energy Networks Association (ENA)	The Cost of Equity for RIIO-ED2 ²⁵⁰	~88 pages	4 Jun 2021

Point raised	Ofgem consideration and response
<p>For the Risk-free Rate (RFR), Oxera suggest a value of -0.93%.²⁵¹</p> <p>Oxera's value reflects two estimation methods which differ from Ofgem's approach. First, to add a convenience premium to government bond yields. Second to adjust corporate debt for default risk and liquidity.</p> <p>Oxera argue that SONIA swap rates are an inappropriate proxy for the RFR.</p>	<p>Oxera's suggestion is similar to the working assumption of -1.16% presented in Ofgem's March 2021 SSMD.²⁵²</p> <p>Oxera's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect the CMA's view that Ofgem's approach to rely on Index Linked Gilts (ILGs) was not wrong.²⁵³</p> <p>The CMA, when reaching its October 2021 Final Determinations, explicitly considered the issues raised by Oxera, on: the convenience premium (page 28); the use of corporate debt (page 44); and the use of SONIA as a cross-check (page 63).</p> <p>Ofgem continues to believe that ILGs provide a suitable proxy for the RFR (see paragraph 3.12 for further information).</p>
<p>For the Total Market Return (TMR), Oxera suggest a range of 7.0% to 7.5% (CPIH real).</p> <p>Oxera's range reflects its view on: the best inflation adjustments (RPI, CPI, CPIH and CED); and the use of an annual arithmetic average based on annual returns.</p>	<p>Oxera's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect CMA's view that Ofgem's point estimate (6.5%) and range (6.25% to 6.75%) were not wrong.²⁵⁴</p> <p>The CMA, when reaching its October 2021 Final Determinations, explicitly considered the issues raised by Oxera: on inflation adjustments (page 86); and on averaging returns (page 97).</p>

²⁵⁰ The Cost of Equity for RIIO-ED2, https://ed2plan.northernpowergrid.com/sites/default/files/document-library/Oxera_study_The_cost_of_equity_for_RIIOED2.pdf

²⁵¹ The Cost of Equity for RIIO-ED2, Page 9, *ibid*.

²⁵² RIIO-ED2 SSMD, Page 34, https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance.pdf#page=34

²⁵³ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 68, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=68

²⁵⁴ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 103, *ibid*.

	<p>Ofgem continues to believe that a TMR point estimate of 6.5% is suitable for RIIO-ED2 (see paragraphs 3.23 to 3.29 for further information).</p>															
<p>For the notional equity beta, Oxera suggest a range of 0.85 to 0.93,²⁵⁵ based on:</p> <ul style="list-style-type: none">60% notional gearinga debt beta of 0.05an asset beta range of 0.37 to 0.40²⁵⁶, where: 0.37 is based on National Grid's five-year asset beta, and 0.40 is based on EU energy networks average five-year asset beta. <p>Oxera's range reflects its view that: water companies are inappropriate comparators and should therefore be excluded; and that data after 31 December 2019 should be excluded because of the impact of COVID-19.</p> <p>Oxera refer to the following four EU energy network comparators²⁵⁷:</p> <table><tr><th>Comparator</th><th>Network Type</th><th>Country</th></tr><tr><td>Enagas</td><td>GT</td><td>Spain</td></tr><tr><td>Red Electrica</td><td>ET</td><td>Spain</td></tr><tr><td>Snam</td><td>GT</td><td>Italy</td></tr><tr><td>Terna</td><td>ET</td><td>Italy</td></tr></table>	Comparator	Network Type	Country	Enagas	GT	Spain	Red Electrica	ET	Spain	Snam	GT	Italy	Terna	ET	Italy	<p>Oxera's work pre-dates the CMA's October 2021 Final Determinations in the GD&T2 appeals and therefore does not reflect CMA's view that Ofgem's beta estimate for GD&T2 was not wrong.²⁵⁸</p> <p>The CMA, when reaching its October 2021 Final Determinations, explicitly considered the issues raised by Oxera: the use of water company comparators (page 186); the use of data which includes the COVID-19 period (page 187); and the use of EU Energy network comparators (page 186).</p> <p>On the use of European comparators, the CMA concluded that²⁵⁹:</p> <p>"...[I]t is not clear that reliance on European comparators would result in a higher beta, as there is evidence to suggest that European energy network comparator data could point to a beta either above or below GEMA's estimate..."</p> <p>We agree with Oxera that transmission networks are a relevant comparison for electricity distribution networks.</p> <p>We agree with Oxera that National Grid plc is a relevant comparator for GB electricity distribution networks.</p> <p>Ofgem continues to believe that its focus on GB networks, rather than international networks, is suitable for RIIO-ED2 (see paragraph 3.45).</p>
Comparator	Network Type	Country														
Enagas	GT	Spain														
Red Electrica	ET	Spain														
Snam	GT	Italy														
Terna	ET	Italy														
<p>On cross-checks Oxera state on page 56 that:</p>	<p>Oxera's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2</p>															

²⁵⁵ The Cost of Equity for RIIO-ED2, Page 9,
https://ed2plan.northernpowergrid.com/sites/default/files/document-library/Oxera_study_The_cost_of_equity_for_RIIOED2.pdf

²⁵⁶ The Cost of Equity for RIIO-ED2, Page 46, ibid.

²⁵⁷ The Cost of Equity for RIIO-ED2, Page 46, ibid.

²⁵⁸ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 187,
https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=187

²⁵⁹ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 132,
https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=132

<p>"Detailed analysis of these [GEMA] cross-checks suggests that there are estimation issues and problems with reliability as valid cross-checks on returns for energy networks."</p>	<p>appeals and therefore does not reflect the CMA's view that:</p> <p>"...we agree with GEMA's use of cross-checks and the support they offer to GEMA's CAPM-based cost of equity estimate".²⁶⁰</p> <p>"We agree with GEMA's interpretation of the MARs and Modigliani-Miller cross-checks – both of which suggest that a reasonable cost of equity allowance might sit below GEMA's CAPM-generated estimate."²⁶¹</p> <p>"On balance, we do not consider that the ARP-DRP cross-check is sufficiently strong that it was required to be included in the cross-check exercise, and we are not suitably convinced that its inclusion would have been sufficient to prove that GEMA's 4.55% CAPM-based cost of equity was wrong."²⁶²</p>
<p>Oxera suggest an overall cost of equity range of 5.81% to 6.87% (CPIH real). ²⁶³</p>	<p>Oxera's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect the CMA's view that:</p> <p>"...we are not persuaded that GEMA has erred in its approach to, or estimate of, the cost of equity. As a result, we determine that GEMA's allowed cost of equity of 4.55% was not wrong."²⁶⁴</p>

²⁶⁰ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 244, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=244

²⁶¹ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 243, *ibid.*

²⁶² CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 244, *ibid.*

²⁶³ The Cost of Equity for RIIO-ED2, Page 9, https://ed2plan.northernpowergrid.com/sites/default/files/document-library/Oxera_study_The_cost_of_equity_for_RIIOED2.pdf

²⁶⁴ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 348, *ibid.*

Consultancy report E3:

Author	Prepared for	Report	Length	Date
NERA	SP Energy Networks (SPEN)	Cost of Capital for SPEN at RIIO-ED2 ²⁶⁵	~87 pages	30 Jun 2021

Point raised	Ofgem consideration and response
<p>For the Risk-free Rate (RFR), NERA propose - 0.76%.²⁶⁶</p> <p>NERA's proposal is based on the approach adopted by the CMA in its PR19 Final Determinations, which takes the mid-point of index linked gilts (ILG) and an AAA corporate bond rate, to reflect the "...[U]nique characteristics of sovereign bonds... which give rise to a convenience premium...".²⁶⁷</p> <p>NERA suggest that the use of SONIA swap rates as a cross check does not satisfy the requirements of CAPM RFR.²⁶⁸</p>	<p>NERA's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect the CMA's view that Ofgem's approach to rely on Index Linked Gilts (ILGs) was not wrong.²⁶⁹</p> <p>The CMA, when reaching its October 2021 Final Determinations, explicitly considered the issues raised by NERA, on the convenience premium (page 28); the use of corporate debt (page 44); and the use of SONIA as a cross-check (page 63).</p> <p>Ofgem continues to believe that ILGs provide a suitable proxy for the RFR.</p>
<p>For the Total Market Return (TMR), NERA suggest a range of 6.73% to 7.46% (CPIH real).²⁷⁰</p> <p>NERA's range reflects its view on the best inflation adjustments (RPI, CPI, CPIH and CED); and the use of other estimations of TMR (eg Blume and JKM).</p>	<p>NERA's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect the CMA's view that Ofgem's point estimate (6.5%) and range (6.25% to 6.75%) were not wrong.²⁷¹</p> <p>The CMA, when reaching its October 2021 Final Determinations, explicitly considered the issues raised by NERA, on on inflation adjustments (page 86); and on the use of other estimators of TMR (eg Blume and JKM) (page 91).</p>

²⁶⁵ NERA Cost of Capital for SPEN at RIIO- ED2, <https://www.spenergynetworks.co.uk/userfiles/file/Annex%205D.2%20NERA%20Cost%20of%20Capital%20for%20SPEN%20at%20RIIO-ED2.pdf>

²⁶⁶ NERA Cost of Capital for SPEN at RIIO- ED2, Page 5, <https://www.spenergynetworks.co.uk/userfiles/file/Annex%205D.2%20NERA%20Cost%20of%20Capital%20for%20SPEN%20at%20RIIO-ED2.pdf#page=5>

²⁶⁷ NERA Cost of Capital for SPEN at RIIO- ED2, Page 20, *ibid*.

²⁶⁸ NERA Cost of Capital for SPEN at RIIO- ED2, Page 24, *ibid*.

²⁶⁹ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 68, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=68

²⁷⁰ NERA Cost of Capital for SPEN at RIIO-ED2, Page 12, *ibid*.

²⁷¹ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 103, *ibid*.

	Ofgem continues to believe that a TMR point estimate of 6.5% is suitable for RIIO-ED2.															
<p>For the notional equity beta, NERA suggest a range of 0.806 to 0.881, based on:</p> <ul style="list-style-type: none">• 60% notional gearing• a debt beta of 0.075• an unlevered beta range of 0.33 to 0.36,²⁷² based on an information date of 4th Jan 2021, where: 0.33 is based on National Grid's two-year daily beta over the last year, and 0.36 is based on National Grid's five-year daily beta over the last 2 years. <p>NERA's range reflects its view that: water companies are lower risk than electricity distribution networks and should therefore be excluded; and that relevant European comparators suggest a range of 0.38 to 0.40.</p> <p>NERA refer to the following four EU energy network comparators as the most relevant²⁷³:</p> <table><tr><th>Comparator</th><th>Network Type</th><th>Country</th></tr><tr><td>Enagas</td><td>GT</td><td>Spain</td></tr><tr><td>Red Electrica</td><td>ET</td><td>Spain</td></tr><tr><td>Snam</td><td>GT</td><td>Italy</td></tr><tr><td>Terna</td><td>ET</td><td>Italy</td></tr></table>	Comparator	Network Type	Country	Enagas	GT	Spain	Red Electrica	ET	Spain	Snam	GT	Italy	Terna	ET	Italy	<p>NERA's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect the CMA's view that Ofgem's beta estimate for GD&T2 was not wrong. ²⁷⁴</p> <p>The CMA, when reaching its October 2021 Final Determinations, explicitly considered the issues raised by NERA: the use of water company comparators (page 186); and the use of EU Energy network comparators (page 186).</p> <p>On the use of European comparators, the CMA concluded that "GEMA was not wrong in its decision not to utilise European comparator data in determining its proxy for UK energy network betas."²⁷⁵</p> <p>We agree with NERA that transmission networks are a relevant comparison for electricity distribution networks.</p> <p>We agree with NERA that National Grid plc is a relevant comparator for GB electricity distribution networks.</p> <p>Ofgem continues to believe that its focus on GB energy networks is suitable for RIIO-ED2.</p>
Comparator	Network Type	Country														
Enagas	GT	Spain														
Red Electrica	ET	Spain														
Snam	GT	Italy														
Terna	ET	Italy														
<p>For aiming up, NERA suggest a socially optimal point towards the top-end of any reasonable cost of equity range (eg around the 90th percentile) which NERA calculate as</p>	<p>NERA's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2</p>															

²⁷² NERA Cost of Capital for SPEN at RIIO- ED2, Page 38, ibid.

²⁷³ NERA Cost of Capital for SPEN at RIIO- ED2, Page 37, <https://www.spenergynetworks.co.uk/userfiles/file/Annex%205D.2%20NERA%20Cost%20of%20Capital%20for%20SPEN%20at%20RIIO-ED2.pdf#page=37>

²⁷⁴ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 187, ibid.

²⁷⁵ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 132, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=132

<p>6.21%, 32bps above the midpoint of its 5.28% to 6.49% range.²⁷⁶</p>	<p>appeals and therefore does not reflect the CMA's conclusion²⁷⁷ that:</p> <p>"...the decision whether to aim up (or not), was an exercise of regulatory judgement that fell with GEMA's margin of appreciation."</p> <p>"...we are not persuaded that GEMA has erred in its approach to, or estimate of, the cost of equity. As a result, we determine that GEMA's allowed cost of equity of 4.55% was not wrong."</p>
<p>On the MAR cross-check NERA conclude that MAR evidence is not a reliable method for deriving or cross-checking the cost of equity given the magnitude and uncertainty of the required adjustments.</p>	<p>NERA's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect the CMA's conclusion that:</p> <p>"...none of the complicating factors put forward by the appellants conflicts with the CMA's provisional determination assessment 'that the MAR evidence available suggests that GEMA's allowed return on equity is not too low'."²⁷⁸</p> <p>"We agree with GEMA's interpretation of the MARs and Modigliani-Miller cross-checks – both of which suggest that a reasonable cost of equity allowance might sit below GEMA's CAPM-generated estimate."²⁷⁹</p>
<p>On the infrastructure fund cross-check NERA suggest that the funds are invested in a diversified set of activities and geographies mostly unrelated to GB energy networks, such as transport, health, public private partnerships and accommodation in North America. NERA conclude that "the funds' IRRs do not provide reliable evidence to assist in determining the cost of equity of DNOs."²⁸⁰</p>	<p>NERA's work pre-dates the CMA's October 2021 Final Determinations in the RIIO-GD&T2 appeals and therefore does not reflect the CMA's conclusion, as set out below.</p> <p>"In relation to the infrastructure fund discount rates check, GEMA's decision to include the discount rate on funds that also invest in solar and wind farm projects does not appear to be in and of itself an error. If anything, we would expect such projects to have related but higher net risk than those at the energy networks – leading to higher implied costs of equity."²⁸¹</p>

²⁷⁶ NERA Cost of Capital for SPEN at RIIO- ED2, Page 66, *ibid*.

²⁷⁷ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 348, *ibid*.

²⁷⁸ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 240, https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2_A_publication.pdf#page=240

²⁷⁹ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 243, *ibid*.

²⁸⁰ NERA Cost of Capital for SPEN at RIIO- ED2, Page 77, <https://www.spenergynetworks.co.uk/userfiles/file/Annex%20D.2%20NERA%20Cost%20of%20Capital%20for%20SPEN%20at%20RIIO-ED2.pdf#page=77>

²⁸¹ CMA Final Determinations Volume 2A: Joined Grounds: Cost of equity, Page 240, *ibid*.

Consultancy report E4:

Author	Prepared for	Report	Length	Date
WPD and Investors	WPD	RIIO-ED2 Investor Questionnaire Responses ²⁸²	12 pages	[Not dated]

Point raised	Ofgem consideration and response
WPD provide responses, from bank and bond investors, to 13 questions which are relevant to the electricity distribution sector.	We welcome WPD's survey of investor sentiments.
Question 3 sought views on the risk difference between UK electricity distribution against those in other countries (US, Australia, Northern Europe and Southern Europe).	We note that most bank investors suggest the UK is lower risk than the other regions. Also, we note that half of the bond investors suggest the UK is lower while the other half suggest the UK is similar risk to the other regions.
Question 4 sought views on the risk difference between UK electricity distribution (ED) against other regulated sectors. (Electricity Transmission, Gas Transmission, Gas Distribution, Water, Airports, Communication networks)	We note that most bank investors suggest ED is of similar risk to the other sectors. Most bond investors suggest ED is lower risk than the other sectors.
Question 6 asks investors to rank risk factors for the UK Electricity Distribution sector.	We note that bank investors ranked weather towards the low end of the risk spectrum while ranking 'Ofgem regulation' towards the high end of the risk spectrum. However, it was not clear to us why 'Ofgem regulation' would be a high-risk factor given Ofgem is a highly rated regulator for predictability and consistency.
Question 11 asks for views on whether significant change is anticipated in the supply and demand of utility bonds.	We note that bank and bond investors did not anticipate significant changes.

²⁸² RIIO-ED2 Investor Questionnaire Responses,
<https://yourpowerfuture.westernpower.co.uk/downloads-view/41766>

Consultancy report E5:

Author	Prepared for	Report	Length	Date
KPMG	ENWL	Assessment of ENWL risk exposure at ED2	37 pages	1st Dec 2021

Point raised	Ofgem consideration and response
<p>KPMG's report provides a view on the risk exposure, to provide evidence on financeability and financial resilience.</p> <p>KPMG refer to the following risk factors:</p> <ol style="list-style-type: none"> 1. Interest rates 2. Inflation 3. Totex 4. Incentives 5. Cost of Debt 	<p>We welcome KPMG's submission and agree that these are relevant risk factors to consider for RIIO-ED2.</p> <p>We agree that these risk factors provide useful evidence on financeability and financial resilience.</p> <p>We agree with KPMG's focus on the notional company when assessing these risk factors.</p> <p>KPMG's approach to use P10 scenarios combined with low probability macroeconomic outcomes may be unduly severe. Further, unduly extreme scenarios would not necessarily lead to any change in our view on equity returns or financeability.</p>
<p>For interest rate risk, KPMG note that variations in interest rates will lead to variations in: (1) ENWL's returns, (2) potential cash flow shortfalls given Cost of Equity and Cost of Debt apply true-up for outturn with a lag, (3) ENWL's financing costs.</p>	<p>We agree that interest rate variation will lead to variations in these aspects of ENWL's price control.</p>
<p>For inflation (CPIH) risk, KPMG note that volatility in CPIH will impact on ENWL's: (1) Outturn RAV, (2) returns, and (3) cost allowances.</p> <p>KPMG also refer to the RPI-CPIH wedge, which will impact on ENWL's inflation hedging and RPI-linked debt diverging from CPIH-linked RAV.</p>	<p>We agree that inflation changes will lead to variations in these aspects of ENWL's price control.</p> <p>In particular, higher outturn CPIH will lead to higher outturn RAV, which is not necessarily a disadvantage to ENWL's shareholders.</p>
<p>For totex risk, KPMG note that totex is a key driver of performance for DNOs. KPMG suggest a totex risk range of -7.36% to +7.36%, based on P10 and P90 estimates, based on RIIO-ED1 sector performance.</p>	<p>We agree that totex is a key driver of risk and performance and KPMG's range appears reasonable for testing risk.</p>

For incentive risk, KPMG note that output incentives represent a significant driver of operational performance. KPMG suggest a RoRE risk range of -1.07% to +1.07%, based on P10 and P90 estimates, subject to RIIO-ED2 incentives being confirmed.	We agree that incentives are a key driver of risk and performance and that the appropriate range will depend on RIIO-ED2 calibrations.
<p>For cost of debt risk, KPMG note there is: (1) embedded debt risk, and (2) company-specific financing risk.</p> <p>KPMG suggest that Ofgem's policy of calibrating the CoD index to the outlook of the sector's debt costs is relatively new and contrasts significantly with its stated position for DPCR4 (paragraph 7.39 and 7.40 of December 2003 second consultation).²⁸³</p>	<p>We agree that these are relevant risks to consider.</p> <p>We agree with KPMG that setting allowances to equal sector average costs is not necessarily the same as setting allowances to match efficient costs. For example, it is possible that sector average costs are not necessarily efficient. Our focus on sector average costs for RIIO-ED2 does not mean that we would remunerate any inefficiencies in these actual costs.</p>
KPMG also present combination scenarios and overall risks for RIIO-ED2.	We welcome KPMG's combination and assessment of risk for RIIO-ED2.

²⁸³ Electricity distribution price control review, Second consultation, Page 114, https://www.ofgem.gov.uk/sites/default/files/docs/2003/12/5496-elec_dpcr_second_consult_maindoc_18dec03.pdf#page=114

Consultancy report E6:

Author	Prepared for	Report	Length	Date
KPMG	UKPN	Relative risk analysis and beta estimation for ED2	77 pages	Dec 2021

Point raised	Ofgem consideration and response
<p>KPMG provide qualitative analysis that DNOs face greater systematic risk exposure relative to water, for the following reasons:</p> <ul style="list-style-type: none"> • Net Zero Uncertainty • Strategic investment (asset stranding) risk • Regulatory risk (higher discretion in energy than water) • Real options. 	<p>The beta assumption we propose for RIIO-ED2 is in fact higher than observed betas for water companies.</p> <p>KPMG's arguments do not, in our view, provide a clear difference between energy and water, because there is a lack of comprehensive relative risk ranking. With regards to regulatory risk, the CMA's role in water price control re-determinations is much broader compared to energy licence modification appeals, which can increase the uncertainty for the outcome of water sector price controls.</p>
<p>KPMG provide quantitative analysis that DNOs face greater systematic risk exposure relative to water, based on:</p> <p>Beta estimates from observed data, where the systematic risk of electricity is proxied using NG and SSE and that water is proxied by SVT, UU and PNN.</p> <p>'Long-short portfolio analysis' where a "portfolio that is long NG and short SVT and UU finds that the portfolio asset beta is at least 0.06 across all estimation windows..."</p> <p>Structural breaks in the relative risk relationship between an 'electricity portfolio' and water companies, including in response to COVID-19.</p> <p>Multifactor models, as an alternative test of systematic risk exposure, using the Fama French 5 Factor model (FF5F), where the</p>	<p>KPMG's work is interesting, but doesn't have a major impact on our view, because:</p> <p>NG and SSE are not pure-play DNOs. SSE is generally not considered a good benchmark for a pure-play energy network.</p> <p>NG tends to have a higher beta than UU, which is reflected in our analysis and consistent with KPMG's analysis.</p> <p>An electricity portfolio which includes SSE could understandably display a different reaction to COVID-19 than water companies.</p> <p>The FF5F²⁸⁴ is a relatively recent addition to the literature (~2015) and we note that multi-factor models were explicitly considered²⁸⁵ in the UKRN 2018 report,</p>

²⁸⁴ Fama, E., and K. French. 'A Five-Factor Asset Pricing Model.' [Journal of Financial Economics, 116 \(2015\), pp. 1-22](#). Working Paper (September 2014) available at SSRN ([free download](#))

²⁸⁵ Estimating the cost of capital for implementation of price controls by UK Regulators, Page 25, <https://www.ukrn.org.uk/wp-content/uploads/2018/06/2018-CoE-Study.pdf#page=25>

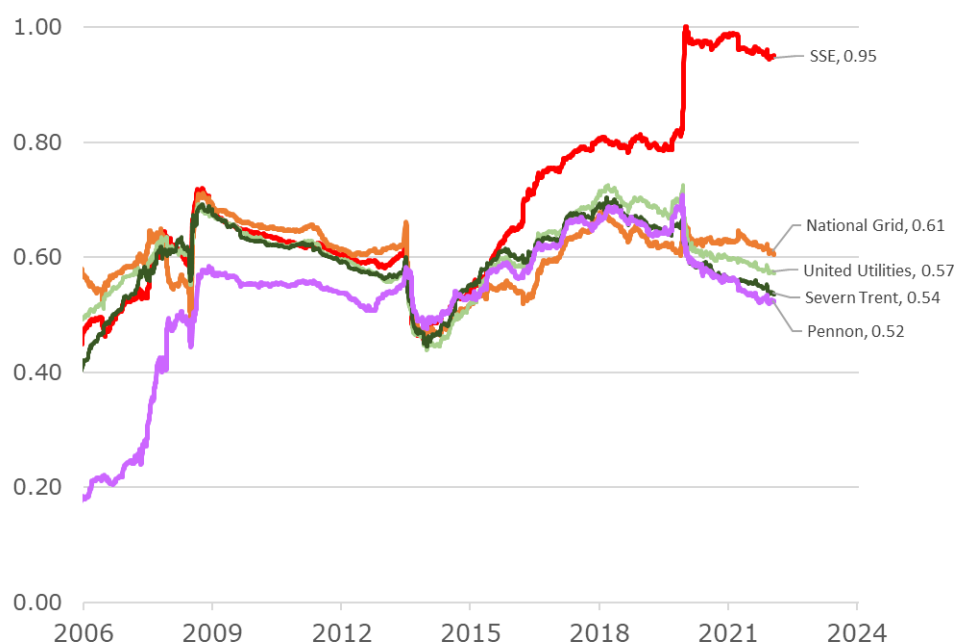
<p>"asset beta for NG is at least 2bps higher when measured in FF5F terms than in CAPM terms... which translates into c. 40bps on... the Cost of Equity.</p>	<p>before concluding²⁸⁶ that CAPM is the best available model, despite numerous caveats.</p>
<p>KPMG generally use a debt beta assumption of 0.075 before concluding with "an overall asset beta range of 0.38 - 0.41 for ED2".</p>	<p>We agree with KPMG that a debt beta of 0.075 may be reasonable. However, our analysis suggests a reasonable asset beta range is lower (eg 0.323 to 0.373). KPMG's range may be influenced upwards by the inclusion of SSE and the larger weight given to recent beta estimates (see Table 11, Table 12 and paragraph 7.2.7, where KPMG say "the use of all estimation windows and averaging approaches").</p>

²⁸⁶ Estimating the cost of capital for implementation of price controls by UK Regulators, Page 7, <https://www.ukrn.org.uk/wp-content/uploads/2018/06/2018-CoE-Study.pdf#page=7>

Appendix 4 - Beta analysis

- A4.1 This appendix provides additional beta analysis, to supplement Chapter 3 (allowed return on equity).
- A4.2 For background, we refer readers to our May 2019 SSMD²⁸⁷, July 2020 Draft Determinations for RIIO-GD&T2²⁸⁸ and December 2020 Final Determinations for RIIO-GD&T2.²⁸⁹
- A4.3 Figure 10 below provides an update of Figure 7 shown in the July 2020 RIIO-GD&T2 Draft Determinations.²⁹⁰ Figure 10 shows that SSE has remained much higher than National Grid plc (NG), United Utilities (UU), Severn Trent (SVT) and Pennon (PNN). Figure 10 also shows that NG, UU, SVT and PNN have either fallen or remained broadly level since 2020.

Figure 10: Raw equity betas to 30 September 2021, 5-year estimation windows



Source: Ofgem analysis of Bloomberg share price movements

²⁸⁷ RIIO-2 SSMD Finance Annex, Page 152, https://www.ofgem.gov.uk/sites/default/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf#page=152

²⁸⁸ RIIO-2 Draft Determinations Finance Annex, Page 39, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=39

²⁸⁹ RIIO-2 Final Determinations Finance Annex, Page 31, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf#page=31

²⁹⁰ RIIO-2 Draft Determinations Finance Annex, Page 39, *ibid.*

A4.4 Table 29 below provides an update of Table 11 shown in the July 2020 RIIO-GD&T2 Draft Determinations.²⁹¹ It confirms that the raw equity betas have remained at broadly similar levels.

Table 29: Raw equity betas to 30 September 2021 using OLS estimation

Estimation window	Averaging period	SSE	NG	PNN	SVT	UU	Average	Average (exc SSE)	Average of PNN, SVT & UU
2 Year	Spot	1.09	0.65	0.53	0.56	0.60	0.69	0.59	0.57
2 Year	2-year	0.97	0.63	0.55	0.57	0.61	0.67	0.59	0.58
2 Year	5-year	0.85	0.62	0.61	0.60	0.63	0.66	0.61	0.61
2 Year	10-year	0.73	0.59	0.59	0.60	0.60	0.62	0.60	0.60
5 Year	Spot	0.96	0.63	0.54	0.56	0.59	0.65	0.58	0.56
5 Year	2-year	0.94	0.63	0.59	0.59	0.63	0.67	0.61	0.60
5 Year	5-year	0.84	0.63	0.63	0.64	0.66	0.68	0.64	0.64
5 Year	10-year	0.71	0.59	0.58	0.60	0.60	0.62	0.59	0.59
10 Year	Spot	0.85	0.59	0.57	0.58	0.60	0.64	0.58	0.58
10 Year	2-year	0.77	0.58	0.57	0.58	0.59	0.62	0.58	0.58
10 Year	5-year	0.69	0.59	0.57	0.58	0.59	0.60	0.58	0.58
10 Year	10-year	0.65	0.60	0.54	0.59	0.59	0.59	0.58	0.57

Source: Ofgem analysis of Bloomberg share price movements

A4.5 Table 30 below provides an update of Table 12 shown in the July 2020 RIIO-GD&T2 Draft Determinations.²⁹² It suggests that the cost of equity may have increased for some companies since the July 2020 RIIO-GD&T2 Draft Determinations.

Table 30: Cost of equity using observed raw equity betas at observed gearing levels

Estimation window	Averaging period	SSE	NG	PNN	SVT	UU
5-year	Spot	6.2%	3.8%	3.1%	3.3%	3.5%
10-year	Spot	5.4%	3.5%	3.4%	3.5%	3.6%

Source: Ofgem analysis using CAPM, for example SSE's 6.2% = -0.74% + 0.96*(6.5%-0.74%), where 0.96 sourced from Table 29

²⁹¹ RIIO-2 Draft Determinations Finance Annex, Page 40, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=40

²⁹² RIIO-2 Draft Determinations Finance Annex, Page 41, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=41

A4.6 Table 31 below provides an update of Table 13 shown in the July 2020 RIIO-GD&T2 Draft Determinations.²⁹³ It suggests that gearing levels remain similar to those shown in the July 2020 RIIO-GD&T2 Draft Determinations.

Table 31: Actual gearing estimates to 30 September 2021

Estimation window	Gearing definition	Market (fair) value or book value of debt	SSE	NG	PNN	SVT	UU
2-year	Net debt / (Net debt + Market Capitalisation)	Book value	37%	50%	23%	52%	55%
2-year		Market value	38%	53%	26%	57%	58%
5-year		Book value	36%	46%	36%	53%	56%
5-year		Market value	38%	50%	38%	58%	60%
10-year		Book value	31%	45%	40%	52%	55%
10-year		Market value	34%	48%	39%	56%	57%

Source: Ofgem analysis of Bloomberg share price movements and companies' financial accounts

A4.7 Table 32 below provides an update of Table 10 shown in the December 2020 RIIO-GD&T2 Final Determinations.²⁹⁴ It suggests that unlevered betas remain similar to those shown in the December 2020 RIIO-GD&T2 Final Determinations.

²⁹³ RIIO-2 Draft Determinations Finance Annex, Page 42, https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf#page=42

²⁹⁴ RIIO-2 Final Determinations Finance Annex, Page 42, https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf#page=42

Table 32: Unlevered betas to 30 September 2021 using OLS estimation, (debt beta of zero)

Estimation window	Averaging period	Market Value of Debt	SSE	NG	PNN	SVT	UU	Average	Average (exc SSE)	Average of PNN, SVT & UU
2 Year	Spot	No	0.69	0.32	0.41	0.27	0.27	0.39	0.32	0.32
2 Year	2-year	No	0.58	0.32	0.35	0.26	0.26	0.35	0.30	0.29
2 Year	5-year	No	0.56	0.35	0.36	0.29	0.28	0.37	0.32	0.31
2 Year	10-year	No	0.51	0.33	0.34	0.29	0.27	0.35	0.31	0.30
2 Year	Spot	Yes	0.68	0.31	0.40	0.25	0.25	0.38	0.30	0.30
2 Year	2-year	Yes	0.56	0.31	0.34	0.24	0.24	0.34	0.28	0.27
2 Year	5-year	Yes	0.54	0.33	0.36	0.26	0.26	0.35	0.30	0.29
2 Year	10-year	Yes	0.49	0.31	0.35	0.27	0.26	0.33	0.30	0.29
5 Year	Spot	No	0.61	0.34	0.34	0.26	0.26	0.36	0.30	0.29
5 Year	2-year	No	0.61	0.35	0.35	0.28	0.28	0.38	0.32	0.30
5 Year	5-year	No	0.59	0.36	0.37	0.31	0.30	0.39	0.33	0.33
5 Year	10-year	No	0.50	0.32	0.33	0.29	0.27	0.34	0.30	0.30
5 Year	Spot	Yes	0.59	0.32	0.33	0.24	0.24	0.34	0.28	0.27
5 Year	2-year	Yes	0.59	0.33	0.35	0.26	0.26	0.36	0.30	0.29
5 Year	5-year	Yes	0.57	0.34	0.37	0.28	0.28	0.37	0.32	0.31
5 Year	10-year	Yes	0.49	0.31	0.34	0.27	0.27	0.33	0.29	0.29
10 Year	Spot	No	0.59	0.33	0.34	0.28	0.27	0.36	0.30	0.30
10 Year	2-year	No	0.54	0.32	0.33	0.28	0.26	0.35	0.30	0.29
10 Year	5-year	No	0.49	0.32	0.32	0.28	0.27	0.33	0.30	0.29
10 Year	Spot	Yes	0.57	0.31	0.34	0.26	0.26	0.35	0.29	0.29
10 Year	2-year	Yes	0.52	0.30	0.34	0.26	0.25	0.33	0.29	0.28
10 Year	5-year	Yes	0.47	0.30	0.33	0.26	0.26	0.32	0.29	0.28

Source: Ofgem analysis of Bloomberg share price movements and companies' financial accounts

Appendix 5 - OFTO analysis

A5.1 This appendix uses hypothetical OFTO bids at 80% to 90% gearing to derive an OFTO cost of equity (COE) at 60% gearing. We assume the equity Internal Rate of Return (IRR) is a good proxy for the COE, such that:

$$IRR_r = RFR_r + \beta_{eOFTO} * (TMR_r - RFR_r)$$

where, IRR_r = Equity IRR (real, post tax), RFR_r = Risk-Free-Rate (real), β_{eOFTO} = equity beta for OFTO, and TMR_r = Total Market Returns (real).

A5.2 After making assumptions for RFR_r and TMR_r to derive β_{eOFTO} we then derive an OFTO asset beta as follows:

$$\beta_{aOFTO} = g_{OFTO} \times \beta_{dOFTO} + (1 - g_{OFTO}) \times \beta_{eOFTO}$$

where, β_{aOFTO} = asset beta for OFTO, g_{OFTO} = gearing for OFTO, β_{dOFTO} = debt beta for OFTO

A5.3 After making assumptions for g_{OFTO} and β_{dOFTO} to derive β_{aOFTO} we then derive a hypothetical equity beta at 60% gearing, as follows:

$$\beta_{eH} = \frac{\beta_{aOFTO} - (g_H \times \beta_{dH})}{(1 - g_H)}$$

where, β_{eH} = equity beta for hypothetical entity, g_H = gearing for hypothetical entity, β_{dH} = debt beta for hypothetical entity

A5.4 After making assumptions for g_H and β_{dH} to derive β_{eH} we then derive a COE as follows:

$$COE_{rH} = RFR_r + \beta_{eH} * (TMR_r - RFR_r)$$

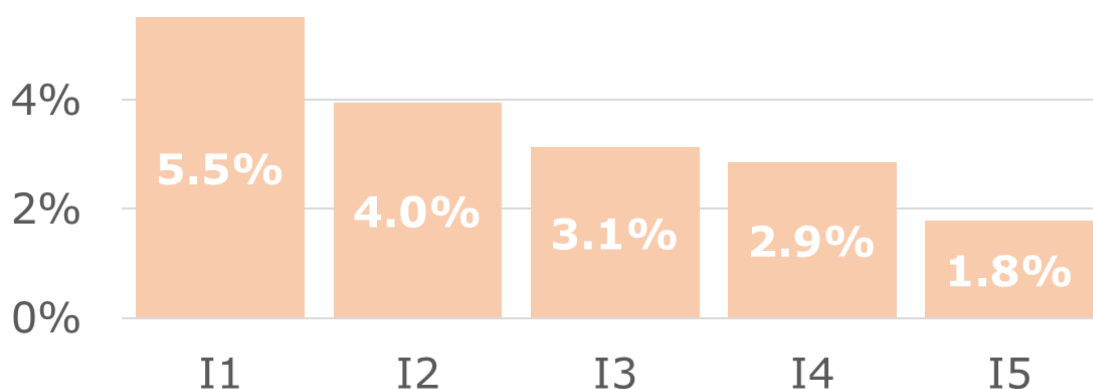
where, COE_{rH} = Cost of equity for hypothetical entity (real, post tax)

A5.5 Using this analytical model we can now make five inferences (I1, I2 etc) for the OFTO-implied COE as shown in Table 33 and Figure 11 below.

Table 33: OFTO-implied cost of equity at 60% gearing

	I1	I2	I3	I4	I5	Ref
IRR_F	6.0%	5.0%	5.0%	5.0%	5.0%	A = assumption and Figure 3
RFR_F	-0.74%	-0.74%	-0.74%	-0.74%	-0.74%	B = assumption and Table 9
TMR_F	6.5%	6.5%	6.5%	6.5%	6.5%	C = assumption and para 3.29
β_{eOFTO}	0.93	0.79	0.79	0.79	0.79	D = (A-B) / (C-B)
β_{dOFTO}	0.20	0.20	0.20	0.20	0.20	E = assumption
g_{OFTO}	80%	90%	90%	90%	90%	F = assumption
β_{aOFTO}	0.35	0.26	0.26	0.26	0.26	G = E*F + D * (1-F)
g_H	60%	60%	60%	60%	60%	H = assumption
β_{dH}	0	0	0.075	0.100	0.200	I = assumption
β_{eH}	0.87	0.65	0.54	0.50	0.35	J = (G - (H * I)) / (1-H)
COE_{rH}	5.5%	4.0%	3.1%	2.9%	1.8%	K = B + J * (C-B)

Source: Ofgem analysis

Figure 11: OFTO-implied cost of equity at 60% gearing (real, post tax)


Source: Ofgem analysis

A5.6 We invite stakeholder views (see paragraph 3.92 above) on the inferencing approach and associated assumptions listed above. For now, we believe Inference 3 (I3) is well supported by market benchmarks and theory: we therefore select 3.1% as the 'gearing adjusted to 60%' OFTO-implied COE.

Appendix 6 - MAR inference model

A6.1 This appendix provides an analytical model to support Market to Asset Ratio (MARs) inferencing. It documents the assumptions and derivations needed to infer a cost of equity given assumptions for: MAR; expected performance; dividends; and growth.

A6.2 We use a perpetuity dividend growth model²⁹⁵, such that:

$$P = \frac{D_1}{COE - G}$$

$$COE = \frac{D_1}{P} + G$$

where, P = Price paid, D_1 = Dividend in year 1, COE = Cost of Equity and G = Dividend growth

A6.3 This is a present value model, where the price paid (P) reflects: the expected dividends to be received (D_1); the cost of equity (COE); and future dividend growth (G).

A6.4 For RIIO-ED2 purposes, this can be utilised so that D_1 equals the expected Return on Equity (ROE), and where ROE equals the expected Baseline Allowed Return on equity ('BAR') and Expected Performance ('EP', where a positive EP means expected outperformance) or incentive income as follows:

$$D_1 = ROE = BAR + EP$$

where: ROE = Return on Equity expected, BAR = Baseline Allowed Return on equity, EP = Expected Performance where sources of performance (positive or negative) can come from ODI (Outcome Delivery Incentive), Totex, financing or debt performance.

A6.5 In addition, we can include the following sustainable growth rate ('SGR'²⁹⁶) logic, as follows:

²⁹⁵ A perpetuity model will, in this context, provide a very cautious interpretation for a regulator to act upon, because it assumes that MAR premiums reflect perpetual differences between revenues and costs. However, dividend growth models have general limitations, such as: it may be unrealistic/subjective to assume constant values for growth or dividends; COE must be larger than G for P to be positive; P is very sensitive when the denominator (COE minus G) is a small value.

²⁹⁶ Sustainable growth rate definition,

<https://www.accountingtools.com/articles/2018/1/27/sustainable-growth-rate>

$$SGR = ROE * (1 - DPR)$$

where: $DPR = \text{Dividend Pay-out Ratio}$, which reflects the dividends paid as a proportion of earnings

A6.6 Applying the SGR to RAV growth (G_{RAV}) and replacing earnings with ROE, we can now re-present as follows:

$$G_{RAV} = ROE * (1 - DPR)$$

$$G_{RAV} = ROE - ROE \left(\frac{D_1}{\text{Earnings}} \right)$$

$$G_{RAV} = ROE - D_1$$

where: G_{RAV} is the sustainable growth in RAV

A6.7 We can now integrate $COE = \frac{D_1}{P} + G$ with $G_{RAV} = ROE - D_1$, by assuming dividend growth (G) aligns with RAV growth (G_{RAV}), such that:

$$COE = \frac{D_1}{P} + ROE - D_1$$

A6.8 Given our interest in RAV and in the equity proportion, we incorporate the relationship between equity and RAV using notional gearing and present the equity price paid (or equity multiple) as follows:

$$Equity_p = (MAR_p - N_{gearing}) / (1 - N_{gearing})$$

where: $Equity_p = \text{Price paid to obtain equity ownership}$, $MAR_p = \text{Price paid to obtain RAV ownership (ratio of enterprise value to RAV)}$ and $N_{gearing} = \text{Notional gearing}$

A6.9 We can now replace P with $Equity_p$, as follows:

$$COE = \frac{D_1}{Equity_p} + ROE - D_1$$

A6.10 This can also be shown as:

$$COE = \frac{D_1}{Equity_p} + G_{RAV}$$

Appendix 7 - Inflation expectations

A7.1 We present below the latest available information from the Office for Budget Responsibility (OBR). Inflation forecasts are an important part of our working assumptions for RIIO-ED2.

Table 34: Inflation expectations, OBR's March 2022 forecast²⁹⁷

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%

A7.2 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%²⁹⁸ based on the OBR forecasts for the year 2026.

A7.3 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%.

A7.4 In Chapter 4 we also set out some comments and questions on our approach to inflation expectations, outturn inflation, and the impact on real equity returns.

²⁹⁷ See CPI and RPI worksheets here: <https://obr.uk/download/historical-official-forecasts-database/>

²⁹⁸ 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 8 – 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 (before transfers)	1986.5	2074.2	2173.3	2285.7	2385.4	10905.2	2181.0
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1986.5	2074.2	2173.3	2285.7	2385.4	10905.2	2181.0
Net additions (after disposals)	240.4	248.1	258.2	241.1	247.2	1235.0	247.0
Depreciation	-152.7	-149.0	-145.9	-141.4	-140.4	-729.4	-145.9
Closing RAV	2074.2	2173.3	2285.7	2385.4	2492.2	11410.8	2282.2
Calculated allowances							
Fast pot expenditure	82.9	84.5	85.6	76.5	75.0	404.6	80.9
Pass-through expenditure	55.6	50.4	50.2	49.1	49.1	254.3	50.9
RAV depreciation	152.7	149.0	145.9	141.4	140.4	729.4	145.9
Return	67.0	69.4	71.9	73.5	75.0	356.8	71.4
Equity issuance cost	4.8	-	-	-	-	4.8	1.0
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	8.8	7.9	6.7	4.8	4.8	33.0	6.6
Base revenue DARTs	-	-	-	-	-	-	-
Tax allowance	23.7	20.6	17.6	11.4	8.7	81.9	16.4
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	395.4	381.9	377.9	356.8	353.0	1864.9	373.0

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 (before transfers)	1479.5	1515.6	1563.8	1619.0	1693.5	7871.4	1574.3
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1479.5	1515.6	1563.8	1619.0	1693.5	7871.4	1574.3
Net additions (after disposals)	147.4	157.9	163.8	181.4	182.6	833.0	166.6
Depreciation	-111.3	-109.7	-108.6	-106.9	-105.3	-541.7	-108.3
Closing RAV	1515.6	1563.8	1619.0	1693.5	1770.8	8162.7	1632.5
Calculated allowances							
Fast pot expenditure	53.4	53.9	52.9	53.9	53.0	267.1	53.4
Pass-through expenditure	55.6	50.4	50.2	49.1	49.1	254.3	50.9
RAV depreciation	111.3	109.7	108.6	106.9	105.3	541.7	108.3
Return	50.0	50.9	51.8	52.7	53.9	259.3	51.9
Equity issuance cost	3.6	-	-	-	-	3.6	0.7
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	8.0	7.1	5.9	4.8	4.8	30.6	6.1
Base revenue DARTs	-	-	-	-	-	-	-
Tax allowance	18.8	17.0	14.5	12.2	10.0	72.4	14.5
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	300.6	289.0	284.0	279.5	276.0	1429.0	285.8

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 (before transfers)	2012.3	2075.1	2150.3	2230.2	2356.9	10824.7	2164.9
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	2012.3	2075.1	2150.3	2230.2	2356.9	10824.7	2164.9
Net additions (after disposals)	210.0	220.9	223.1	267.4	260.2	1181.7	236.3
Depreciation	-147.2	-145.7	-143.2	-140.7	-140.5	-717.3	-143.5
Closing RAV	2075.1	2150.3	2230.2	2356.9	2476.6	11289.1	2257.8
Calculated allowances							
Fast pot expenditure	64.9	65.3	63.6	64.8	64.8	323.4	64.7
Pass-through expenditure	47.8	48.1	48.8	49.4	50.0	244.1	48.8
RAV depreciation	147.2	145.7	143.2	140.7	140.5	717.3	143.5
Return	67.5	69.1	70.6	72.2	74.3	353.7	70.7
Equity issuance cost	4.8	-	-	-	-	4.8	1.0
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	3.8	3.7	4.1	2.8	2.8	17.1	3.4
Base revenue DARTs	2.5	-0.0	-0.0	-0.0	-0.0	2.4	0.5
Tax allowance	33.1	30.8	27.3	24.0	21.6	136.8	27.4
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	371.6	362.7	357.5	353.9	354.0	1799.7	359.9

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 (before transfers)	2706.3	2755.7	2807.1	2863.3	2899.4	14031.8	2806.4
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	2706.3	2755.7	2807.1	2863.3	2899.4	14031.8	2806.4
Net additions (after disposals)	245.6	244.9	248.3	223.1	242.5	1204.4	240.9
Depreciation	-196.1	-193.5	-192.1	-187.1	-182.2	-950.9	-190.2
Closing RAV	2755.7	2807.1	2863.3	2899.4	2959.7	14285.3	2857.1
Calculated allowances							
Fast pot expenditure	61.4	61.7	61.3	60.6	60.7	305.6	61.1
Pass-through expenditure	44.0	44.1	44.3	44.1	44.1	220.6	44.1
RAV depreciation	196.1	193.5	192.1	187.1	182.2	950.9	190.2
Return	90.2	90.9	91.4	90.8	90.1	453.4	90.7
Equity issuance cost	6.5	-	-	-	-	6.5	1.3
BPI and IQI Additional income	1.1	-	-	-	-	1.1	0.2
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	1.7	1.9	1.9	0.2	0.2	5.9	1.2
Base revenue DARTs	-	-	-	-	-	-	-
Tax allowance	39.8	36.8	34.6	32.1	29.7	173.1	34.6
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	440.9	428.8	425.6	414.9	406.9	2117.0	423.4

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 (before transfers)	2713.1	2783.8	2848.6	2921.8	2987.4	14254.7	2850.9
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	2713.1	2783.8	2848.6	2921.8	2987.4	14254.7	2850.9
Net additions (after disposals)	263.3	256.4	264.1	254.3	235.2	1273.2	254.6
Depreciation	-192.5	-191.6	-190.9	-188.6	-185.7	-949.4	-189.9
Closing RAV	2783.8	2848.6	2921.8	2987.4	3036.9	14578.6	2915.7
Calculated allowances							
Fast pot expenditure	64.9	63.7	62.6	62.6	61.8	315.7	63.1
Pass-through expenditure	42.6	42.6	42.8	42.6	42.7	213.4	42.7
RAV depreciation	192.5	191.6	190.9	188.6	185.7	949.4	189.9
Return	90.7	92.1	93.0	93.1	92.6	461.5	92.3
Equity issuance cost	6.5	-	-	-	-	6.5	1.3
BPI and IQI Additional income	1.1	-	-	-	-	1.1	0.2
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	1.8	1.9	1.9	0.2	0.2	6.0	1.2
Base revenue DARTs	-	-	-	-	-	-	-
Tax allowance	37.5	34.3	31.6	29.4	27.5	160.3	32.1
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	437.6	426.2	422.9	416.5	410.6	2113.8	422.8

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 (before transfers)	1287.1	1346.7	1401.1	1475.2	1533.1	7043.3	1408.7
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1287.1	1346.7	1401.1	1475.2	1533.1	7043.3	1408.7
Net additions (after disposals)	148.3	142.5	161.8	145.5	140.1	738.2	147.6
Depreciation	-88.7	-88.2	-87.7	-87.6	-86.7	-438.8	-87.8
Closing RAV	1346.7	1401.1	1475.2	1533.1	1586.4	7342.6	1468.5
Calculated allowances							
Fast pot expenditure	37.2	37.2	37.7	36.5	36.1	184.7	36.9
Pass-through expenditure	22.9	22.9	23.0	22.9	22.9	114.6	22.9
RAV depreciation	88.7	88.2	87.7	87.6	86.7	438.8	87.8
Return	43.9	45.4	46.8	47.9	48.5	232.6	46.5
Equity issuance cost	3.1	-	-	-	-	3.1	0.6
BPI and IQI Additional income	0.5	-	-	-	-	0.5	0.1
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	0.9	0.9	0.9	0.1	0.1	3.0	0.6
Base revenue DARTs	-	-	-	-	-	-	-
Tax allowance	16.5	14.6	12.5	11.5	10.5	65.6	13.1
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	213.8	209.2	208.7	206.5	204.8	1043.0	208.6

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 (before transfers)	1976.3	2052.7	2127.8	2227.1	2308.9	10692.8	2138.6
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1976.3	2052.7	2127.8	2227.1	2308.9	10692.8	2138.6
Net additions (after disposals)	207.4	205.6	228.6	210.7	198.6	1050.8	210.2
Depreciation	-131.0	-130.6	-129.3	-128.8	-127.4	-647.0	-129.4
Closing RAV	2052.7	2127.8	2227.1	2308.9	2380.1	11096.6	2219.3
Calculated allowances							
Fast pot expenditure	50.9	50.5	50.3	50.0	48.7	250.4	50.1
Pass-through expenditure	28.8	28.8	29.7	29.6	29.6	146.5	29.3
RAV depreciation	131.0	130.6	129.3	128.8	127.4	647.0	129.4
Return	66.5	68.3	70.2	71.4	72.1	348.5	69.7
Equity issuance cost	4.7	-	-	-	-	4.7	0.9
BPI and IQI Additional income	0.9	-	-	-	-	0.9	0.2
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	1.4	1.4	1.3	0.2	0.2	4.5	0.9
Base revenue DARTs	-	-	-	-	-	-	-
Tax allowance	25.4	23.0	20.1	18.7	17.4	104.5	20.9
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	309.6	302.6	301.0	298.6	295.3	1507.1	301.4

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 (before transfers)	1803.9	1839.0	1879.9	1934.3	1971.1	9428.3	1885.7
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1803.9	1839.0	1879.9	1934.3	1971.1	9428.3	1885.7
Net additions (after disposals)	171.8	175.1	187.2	166.4	155.8	856.3	171.3
Depreciation	-136.7	-134.3	-132.8	-129.6	-125.0	-658.3	-131.7
Closing RAV	1839.0	1879.9	1934.3	1971.1	2001.9	9626.4	1925.3
Calculated allowances							
Fast pot expenditure	69.7	70.2	68.5	65.3	63.1	336.8	67.4
Pass-through expenditure	69.9	71.7	70.3	68.8	68.2	348.8	69.8
RAV depreciation	136.7	134.3	132.8	129.6	125.0	658.3	131.7
Return	60.8	61.4	62.1	62.2	61.8	308.3	61.7
Equity issuance cost	4.3	-	-	-	-	4.3	0.9
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	4.6	4.5	3.6	1.8	1.4	15.9	3.2
Base revenue DARTs	19.7	19.7	2.5	-	-	41.9	8.4
Tax allowance	24.9	23.4	22.0	21.1	19.4	110.9	22.2
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	390.5	385.2	361.9	348.7	338.9	1825.2	365.0

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 (before transfers)	1865.2	1913.3	1971.5	2022.1	2068.9	9841.0	1968.2
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1865.2	1913.3	1971.5	2022.1	2068.9	9841.0	1968.2
Net additions (after disposals)	193.0	201.5	191.9	184.9	186.4	957.7	191.5
Depreciation	-144.9	-143.3	-141.3	-138.0	-136.2	-703.8	-140.8
Closing RAV	1913.3	1971.5	2022.1	2068.9	2119.2	10095.0	2019.0
Calculated allowances							
Fast pot expenditure	75.7	76.4	74.2	74.3	71.6	372.2	74.4
Pass-through expenditure	46.6	46.3	45.8	45.0	44.6	228.5	45.7
RAV depreciation	144.9	143.3	141.3	138.0	136.2	703.8	140.8
Return	62.4	63.5	64.4	64.4	64.4	319.1	63.8
Equity issuance cost	4.5	-	-	-	-	4.5	0.9
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	4.6	4.5	3.6	1.8	1.4	15.9	3.2
Base revenue DARTs	16.3	16.3	2.4	-	-	35.1	7.0
Tax allowance	29.8	28.0	26.6	24.8	23.1	132.2	26.4
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	384.9	378.4	358.2	348.3	341.4	1811.2	362.2

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 (before transfers)	2875.4	2944.8	3025.2	3089.4	3148.6	15083.4	3016.7
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	2875.4	2944.8	3025.2	3089.4	3148.6	15083.4	3016.7
Net additions (after disposals)	290.4	298.2	280.5	273.1	276.5	1418.7	283.7
Depreciation	-221.0	-217.9	-216.4	-213.8	-209.3	-1078.4	-215.7
Closing RAV	2944.8	3025.2	3089.4	3148.6	3215.8	15423.7	3084.7
Calculated allowances							
Fast pot expenditure	106.8	109.5	108.5	108.4	108.9	542.1	108.4
Pass-through expenditure	75.3	75.4	77.4	74.5	74.0	376.7	75.3
RAV depreciation	221.0	217.9	216.4	213.8	209.3	1078.4	215.7
Return	96.1	97.6	98.5	98.2	97.9	488.3	97.7
Equity issuance cost	6.9	-	-	-	-	6.9	1.4
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	6.6	6.5	5.0	2.8	2.3	23.1	4.6
Base revenue DARTs	7.1	7.1	2.5	-	-	16.7	3.3
Tax allowance	41.2	38.5	37.4	35.7	33.2	185.9	37.2
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	560.9	552.5	545.6	533.3	525.6	2717.9	543.6

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 (before transfers)	1971.1	2008.8	2060.9	2136.8	2215.5	10393.1	2078.6
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1971.1	2008.8	2060.9	2136.8	2215.5	10393.1	2078.6
Net additions (after disposals)	206.9	219.2	206.8	208.3	207.9	1049.1	209.8
Depreciation	-169.2	-167.2	-130.9	-129.6	-127.5	-724.4	-144.9
Closing RAV	2008.8	2060.9	2136.8	2215.5	2295.8	10717.8	2143.6
Calculated allowances							
Fast pot expenditure	78.7	76.1	73.9	72.1	69.8	370.7	74.1
Pass-through expenditure	67.0	67.2	66.5	68.1	68.0	336.7	67.3
RAV depreciation	169.2	167.2	130.9	129.6	127.5	724.4	144.9
Return	65.7	66.5	67.6	68.5	69.4	337.8	67.6
Equity issuance cost	4.7	-	-	-	-	4.7	0.9
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	6.5	5.0	5.0	3.2	3.2	23.0	4.6
Base revenue DARTs	30.0	30.3	0.2	-0.0	-0.0	60.4	12.1
Tax allowance	28.6	24.8	10.4	8.0	5.8	77.6	15.5
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	450.5	437.1	354.5	349.6	343.6	1935.3	387.1

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 (before transfers)	2209.6	2261.9	2332.6	2401.9	2454.2	11660.2	2332.0
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	2209.6	2261.9	2332.6	2401.9	2454.2	11660.2	2332.0
Net additions (after disposals)	210.8	227.7	224.1	204.5	195.6	1062.7	212.5
Depreciation	-158.5	-157.0	-154.7	-152.2	-146.3	-768.8	-153.8
Closing RAV	2261.9	2332.6	2401.9	2454.2	2503.5	11954.0	2390.8
Calculated allowances							
Fast pot expenditure	83.3	82.4	81.9	80.9	78.8	407.3	81.5
Pass-through expenditure	44.4	44.3	44.2	45.2	45.1	223.3	44.7
RAV depreciation	158.5	157.0	154.7	152.2	146.3	768.8	153.8
Return	73.8	75.1	76.3	76.5	76.2	377.9	75.6
Equity issuance cost	5.3	-	-	-	-	5.3	1.1
BPI and IQI Additional income	-	-	-	-	-	-	-
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	4.5	4.5	4.5	2.9	2.9	19.3	3.9
Base revenue DARTs	31.3	31.6	31.9	32.3	32.6	159.7	31.9
Tax allowance	20.0	19.4	16.3	14.1	11.0	80.7	16.1
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	421.2	414.3	409.8	404.1	392.9	2042.4	408.5

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 (before transfers)	1299.8	1349.9	1390.0	1671.5	1726.6	7437.8	1487.6
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	1299.8	1349.9	1390.0	1671.5	1726.6	7437.8	1487.6
Net additions (after disposals)	156.0	146.4	364.2	143.1	127.3	937.0	187.4
Depreciation	-105.8	-106.4	-82.7	-88.0	-87.9	-470.8	-94.2
Closing RAV	1349.9	1390.0	1671.5	1726.6	1766.0	7904.0	1580.8
Calculated allowances							
Fast pot expenditure	67.3	67.4	93.6	61.5	60.3	350.1	70.0
Pass-through expenditure	42.3	40.2	35.7	36.4	35.9	190.6	38.1
RAV depreciation	105.8	106.4	82.7	88.0	87.9	470.8	94.2
Return	43.7	44.8	49.3	53.5	53.7	245.0	49.0
Equity issuance cost	3.1	-	-	5.7	-	8.9	1.8
BPI and IQI Additional income	-0.3	-	-	-	-	-0.3	-0.1
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	2.3	2.3	2.2	1.2	1.2	9.2	1.8
Base revenue DARTs	-	-	-	-	-	-	-
Tax allowance	16.3	18.5	8.3	9.0	7.0	59.1	11.8
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	280.6	279.5	271.9	255.3	246.1	1333.4	266.7

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 (before transfers)	2661.4	2748.4	2865.4	2996.9	3108.4	14380.6	2876.1
Transfers	-	-	-	-	-	-	-
Opening RAV (after transfers)	2661.4	2748.4	2865.4	2996.9	3108.4	14380.6	2876.1
Net additions (after disposals)	278.0	306.5	319.7	298.8	277.7	1480.6	296.1
Depreciation	-190.9	-189.6	-188.2	-187.3	-185.5	-941.5	-188.3
Closing RAV	2748.4	2865.4	2996.9	3108.4	3200.6	14919.8	2984.0
Calculated allowances							
Fast pot expenditure	126.8	138.5	145.4	134.3	126.6	671.6	134.3
Pass-through expenditure	59.6	59.4	59.5	65.2	59.8	303.5	60.7
RAV depreciation	190.9	189.6	188.2	187.3	185.5	941.5	188.3
Return	89.3	91.8	94.5	96.1	97.0	468.7	93.7
Equity issuance cost	6.4	-	-	-	-	6.4	1.3
BPI and IQI Additional income	-1.3	-	-	-	-	-1.3	-0.3
Outperformance & ODIs	-	-	-	-	-	-	-
Other revenue allowance	4.4	4.4	4.3	2.5	2.5	18.1	3.6
Base revenue DARTs	22.2	22.2	22.2	17.1	17.1	100.7	20.1
Tax allowance	38.1	37.0	35.4	29.5	25.1	165.0	33.0
Tax allowance adjustment	-	-	-	-	-	-	-
Price Control Revenue							
Calculated revenue	536.4	542.7	549.6	531.9	513.5	2674.1	534.8

Table 35: ED baseline allowed returns, and forecast RoRE upside/downside (Pre-RAMs)

			ENWL	NPgN	NPgY	WMID	EMID	SWALES	SWEST
Baseline	A	Baseline allowed return on equity	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%
	B	Baseline allowed return on debt	2.26%	2.32%	2.26%	2.26%	2.26%	2.32%	2.26%
	C	Notional gearing	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%
	D = C*B + (1-C)*A	Baseline allowed return on capital	3.26%	3.29%	3.26%	3.26%	3.26%	3.29%	3.26%
Upside	E	Proposed BPI values	0.00%	0.00%	0.00%	0.02%	0.02%	0.02%	0.02%
	F	Totex	1.88%	1.74%	1.73%	1.36%	1.40%	1.64%	1.52%
	G	Common ODIs	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%
	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	8.78%	8.44%	8.43%	8.08%	8.13%	8.36%	8.25%
Downside	J	Proposed BPI values	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	K	Totex	1.88%	1.74%	1.73%	1.36%	1.40%	1.64%	1.52%
	L	Common ODIs	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
	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	-1.32%	-0.99%	-0.97%	-0.60%	-0.65%	-0.88%	-0.77%

			LPN	SPN	EPN	SPD	SPMW	SSEH	SSES
Baseline	A	Baseline allowed return on equity	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%
	B	Baseline allowed return on debt	2.32%	2.26%	2.26%	2.26%	2.26%	2.26%	2.26%
	C	Notional gearing	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%
	$D = C*B + (1-C)*A$	Baseline allowed return on capital	3.29%	3.26%	3.26%	3.26%	3.26%	3.26%	3.26%
Upside	E	Proposed BPI values	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	F	Totex	1.59%	1.70%	1.64%	1.71%	1.58%	2.13%	1.84%
	G	Common ODIs	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%	1.95%
	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	8.50%	8.40%	8.34%	8.41%	8.29%	8.83%	8.54%
Downside	J	Proposed BPI values	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.03%
	K	Totex	1.59%	1.70%	1.64%	1.71%	1.58%	2.13%	1.84%
	L	Common ODIs	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
	M	Bespoke ODIs	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	$N = A-J-K-L-M$	RoRE downside	-0.84%	-0.95%	-0.88%	-0.96%	-0.83%	-1.39%	-1.11%

Figure 12: RIIO-ED2 ex ante RoRE ranges (Pre-RAMs)



Appendix 9 – Totex reconciliation

Table 36: Reconciliation between totex as per Core Methodology Document and PCFM Totex, £m 2020/21 prices

DNO Group	DNO	Proposed Totex ²⁹⁹	Post-modelling adjustments ³⁰⁰	RPEs	Adjustment for PCFM Totex ³⁰¹	PCFM Totex ³⁰²	Fast Money	RAV additions
		A	B	C	D	E = A+B+C+D = F+G	F	G
ENWL	ENWL	1,640	2	74	(77)	1,640	405	1,235
NPg	NPgN	1,129	(2)	52	(79)	1,100	267	833
	NPgY	1,521	2	70	(88)	1,505	323	1,182
WPD	WMID	1,588	0	71	(149)	1,510	306	1,204
	EMID	1,697	(2)	76	(182)	1,589	316	1,273
	SWALES	953	(2)	43	(70)	923	185	738
	SWEST	1,343	(0)	60	(102)	1,301	250	1,051
UKPN	LPN	1,323	(3)	59	(185)	1,193	337	856
	SPN	1,394	(9)	62	(118)	1,330	372	958
	EPN	2,137	2	96	(274)	1,961	542	1,419
SPEN	SPD	1,451	(16)	65	(80)	1,420	371	1,049
	SPMW	1,477	1	66	(75)	1,470	407	1,063
SSEN	SSEH	1,087	227	48	(75)	1,287	350	937
	SSES	2,199	1	99	(147)	2,152	672	1,481
Total		20,939	201	941	(1700)	20,381	5,102	15,279

²⁹⁹ Ofgem proposed totex as set out in Table 1 of Chapter 7 of the Core Methodology Document.

³⁰⁰ We add proposed variant totex allowances for Cyber UIOLI and Shetland Link RAV transfer, remove NTCC here (to be added back with other pass-through costs) and remove the ongoing efficiency applied to Worst Served Customers and Visual Amenity.

³⁰¹ Reductions to proposed totex for related party margins, disposals, non-price control allocation costs and other controllable opex. We assume submitted costs for these adjustments.

³⁰² 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.

Table 37: Breakdown of total expenditure allowances (totex and non-totex), £m 2020/21 prices

DNO Group	DNO	PCFM Baseline Totex ³⁰³	Volume drivers	Shetland link RAV transfer	RPEs	UIOLI	PCFM Totex	Pass-through expenditure ³⁰⁴	Other allowances	Total expenditure allowances
		H	I	J	K = C	L	M = E = = H+I+J+K+L	N	O	P = M+N+O
ENWL	ENWL	1,422	119	-	74	24	1,640	254	33	1,927
NPg	NPgN	955	87	-	52	6	1,100	254	31	1,385
	NPgY	1,220	206	-	70	9	1,505	247	17	1,769
WPD	WMID	1,337	96	-	71	5	1,510	221	6	1,736
	EMID	1,428	81	-	76	4	1,589	213	6	1,808
	SWALES	819	57	-	43	4	923	115	3	1,041
	SWEST	1,175	61	-	60	5	1,301	147	5	1,452
UKPN	LPN	1,104	28	-	59	1	1,193	391	16	1,600
	SPN	1,224	25	-	62	19	1,330	264	16	1,609
	EPN	1,798	43	-	96	24	1,961	393	23	2,377
SPEN	SPD	1,234	110	-	65	12	1,420	397	23	1,840
	SPMW	1,316	73	-	66	15	1,470	383	19	1,872
SSEN	SSEH	964	12	241	48	23	1,287	191	9	1,487
	SSES	2,008	35	-	99	10	2,152	404	18	2,575
Total		18,003	1,035	241	941	161	20,381	3,873	225	24,479

³⁰³ Calculated as sum of Non-variant allowances and Price Control Deliverables (PCDs)

³⁰⁴ Calculated as sum of non-controllable opex and pension scheme established deficit funding.

Table 38: Reconciliation between totex as submitted in BPDTs and as PCFM 'submitted' case (£m 2020/21 prices)

DNO	RIIO-ED2 submitted	Reverse out accepted bespoke with costs not in baseline	Reverse out excluded cost activities	Reverse out Normalisations	RIIO-ED2 Net Before Non Price Control Allocation	Non Price Control Allocation costs in BPDTs	Net After Non Price Control Allocation	DNOs' submitted Ongoing Efficiency applied to costs	Other costs deducted from baseline totex for PCFM	BPFM Baseline totex	Adjustments for PCFM modelled BPDT submitted case
ENWL	2,015	(78)	22	(186)	1,772	(72)	1,701	(50)	(5)	1,645	1,848
NPGN	1,392	-	12	(58)	1,346	(59)	1,287	(20)	(20)	1,248	1,453
NPGY	1,837	-	59	(135)	1,761	(78)	1,683	(25)	(10)	1,647	2,077
WMID	1,939	-	14	-	1,953	(134)	1,819	(27)	(15)	1,777	1,864
EMID	2,062	-	17	-	2,080	(159)	1,921	(28)	(23)	1,869	1,962
SWALES	1,144	-	6	-	1,150	(57)	1,093	(16)	(13)	1,064	1,116
SWEST	1,762	-	19	-	1,781	(79)	1,702	(25)	(23)	1,654	1,737
LPN	1,445	-	-	-	1,445	(182)	1,264	(61)	(4)	1,199	1,257
SPN	1,551	(23)	3	-	1,532	(115)	1,418	(69)	(3)	1,346	1,411
EPN	2,466	(52)	6	-	2,419	(267)	2,152	(104)	(7)	2,040	2,141
SPD	1,676	(6)	18	(7)	1,682	(72)	1,609	(24)	(8)	1,578	1,719
SPMW	1,721	(7)	23	(7)	1,730	(69)	1,661	(24)	(6)	1,631	1,774
SSEH	1,406	(11)	33	(11)	1,416	(71)	1,345	(46)	(4)	1,295	2,133
SSES	2,826	(6)	27	(53)	2,794	(137)	2,657	(91)	(10)	2,556	3,258
Total	25,244	(185)	260	(457)	24,862	(1550)	23,312	(612)	(150)	22,550	25,749

DNO	RIIO-ED2 submitted	Reverse out accepted bespoke with costs not in baseline	Reverse out excluded cost activities	Reverse out Normalisations	RIIO-ED2 Net Before Non Price Control Allocation	Non Price Control Allocation costs in BPDTs	Net After Non Price Control Allocation	DNOs' submitted Ongoing Efficiency applied to costs	Other costs deducted from baseline totex for PCFM	BPFM Baseline totex	Adjustments for PCFM modelled BPDT submitted case
Notes	As shown in DDs. This is normalised Net costs before Non Price Control Allocation	If a project accepted as a bespoke did not have costs included in baseline, costs were added ("non-modelled component" of submitted costs)	QoS & NoSR, Rail Diversions and Severe Weather 1 in 20 were excluded as we propose to have nil ex ante funding for these activities	Reallocations from the M13 Uncertainty Mechanisms memo table into baseline	As per BPDTs	As per BPDTs	As per BPDTs	As per BPDTs	As per BPDTs. Includes Related party margins, disposals & other non controllable opex	As per BPDTs	Adjustments include: corrections applied to a number of datasets (eg RPEs included); SCR costs removed; variant activities included

Table 39: Reconciliation between totex as per Core Methodology Document and PCFM Totex for the “high case” scenario, £m 2020/21 prices

DNO	DD proposed totex	Additional Variant totex under High case	High case totex estimate	Post-modelling adjustments	RPEs	Adjustments for PCFM totex	PCFM totex excl pass-throughs & other allowances, rewards & penalties	Fast money	RAV additions
ENWL	1640	90	1730	2	77	-77	1733	409	1324
NPGN	1129	85	1214	-2	55	-79	1189	271	919
NPGY	1521	112	1633	2	75	-88	1622	327	1295
WMID	1588	105	1693	0	75	-149	1619	310	1309
EMID	1697	191	1888	-2	83	-182	1787	320	1467
SWALES	953	66	1019	-2	45	-70	992	189	803
SWEST	1343	108	1452	0	64	-102	1413	254	1159
LPN	1323	68	1391	-3	62	-185	1264	341	923
SPN	1394	58	1452	-9	64	-118	1389	376	1013
EPN	2137	115	2252	2	100	-274	2080	547	1533
SPD	1451	84	1534	-16	68	-80	1507	374	1132
SPMW	1477	69	1546	1	68	-75	1541	411	1130
SSEH	1087	446	1534	227	51	-75	1737	399	1338
SSSES	2199	337	2536	1	108	-147	2497	681	1816
Total	20939	1935	22874	201	994	-1700	22369	5209	17160

Table 40: Breakdown of total expenditure allowances (totex and non-totex), “high case” £m 2020/21 prices

DNO	PCFM Baseline Totex ³⁰⁵	Volume drivers	Shetland link RAV transfer	RPEs	UIOLI	PCFM Totex	Pass- through ³⁰⁶	Other allowances	Total expenditure allowances
	H	I	J	K = C	L	M = E = H+I+J+K+L	N	O	P = M+N+O
ENWL	1422	210	-	77	24	1733	254	33	2020
NPgN	955	173	-	55	6	1189	254	31	1474
NPgY	1220	318	-	75	9	1622	247	17	1886
WMID	1337	202	-	75	5	1619	221	6	1845
EMID	1428	273	-	83	4	1787	213	6	2006
SWALES	819	124	-	45	4	992	115	3	1109
SWEST	1175	169	-	64	5	1413	147	5	1564
LPN	1104	97	-	62	1	1264	391	16	1670
SPN	1224	83	-	64	19	1389	264	16	1669
EPN	1798	158	-	100	24	2080	393	23	2496
SPD	1234	194	-	68	12	1507	397	23	1927
SPMW	1316	142	-	68	15	1541	383	19	1944
SSEH	964	458	241	51	23	1737	191	9	1936
SSES	2008	371	-	108	10	2497	404	18	2920
Total	18003	2970	241	994	161	22369	3873	225	26467

³⁰⁵ Calculated as sum of Non-variant allowances and Price Control Deliverables (PCDs)

³⁰⁶ Calculated as sum of non-controllable opex and pension scheme established deficit funding.

Appendix 10 – Proposed incentive values comparison

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	RIIO-2 Max Reward / Penalty	RIIO-2 value (£m annual, 20/21 prices)
Customer Satisfaction Survey	Interruptions	CSAU/CSAD	ENWL	1.1	0.3 / -0.3 BR	1.1
			NPgN	0.8		0.8
			NPgY	1.1		1.0
			WMID	1.4		1.3
			EMID	1.4		1.4
			SWALES	0.7		0.7
			SWEST	1.0		1.0
			LPN	1.1		0.9
			SPN	1.1		0.9
			EPN	1.7		1.4
			SPD	1.1		1.0
			SPMW	1.2		1.1
			SSEH	0.7		0.7
			SSES	1.6		1.4
	Connections	CSBU/CSBD	ENWL	1.9	0.5 / -0.5 BR	1.8
			NPgN	1.3		1.3
			NPgY	1.9		1.7
			WMID	2.4		2.2
			EMID	2.4		2.3
			SWALES	1.1		1.1
			SWEST	1.7		1.7
			LPN	1.8		1.5
			SPN	1.9		1.6
			EPN	2.8		2.4
			SPD	1.9		1.7
			SPMW	2.0		1.9
			SSEH	1.2		1.2
			SSES	2.5		2.3
	General Enquiries	CSCU/CSCD	ENWL	0.7	0.2 / -0.2 BR	0.7
			NPgN	0.6		0.5
			NPgY	0.7		0.7
			WMID	1.0		0.9
			EMID	1.0		0.9
			SWALES	0.5		0.5
			SWEST	0.7		0.7
			LPN	0.7		0.6
			SPN	0.7		0.6
			EPN	1.1		1.0
			SPD	0.7		0.7
			SPMW	0.8		0.7
			SSEH	0.5		0.5

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	RIIO-2 Max Reward / Penalty	RIIO-2 value (£m annual, 20/21 prices)
			SSES	1.0		0.9
Complaints Metric	Overall cap	ARCM	ENWL	1.9	0 / -0.5 BR	1.8
			NPgN	1.4		1.3
			NPgY	1.9		1.7
			WMID	2.4		2.2
			EMID	2.4		2.3
			SWALES	1.1		1.1
			SWEST	1.7		1.7
			LPN	1.8		1.5
			SPN	1.9		1.6
			EPN	2.8		2.4
			SPD	1.9		1.7
			SPMW	2.0		1.9
			SSEH	1.2		1.2
			SSES	2.5		2.3
Interruptions Incentive Scheme	Upside cap	TRIM	ENWL	16.4	1% RoRE	8.8
			NPgN	12.0		6.3
			NPgY	16.2		8.7
			WMID	21.3		11.1
			EMID	20.6		11.3
			SWALES	9.9		5.7
			SWEST	14.7		8.6
			LPN	15.9		7.5
			SPN	16.4		7.8
			EPN	24.4		12.0
			SPD	16.4		8.3
			SPMW	17.3		9.3
			SSEH	10.2		6.0
			SSES	21.9		11.5
	Downside Cap	TRIM	ENWL	16.4	-2.5% RoRE	22.0
			NPgN	12.0		15.8
			NPgY	16.2		21.8
			WMID	21.3		27.9
			EMID	20.6		28.4
			SWALES	9.9		14.2
			SWEST	14.7		21.4
			LPN	15.9		18.7
			SPN	16.4		19.6
			EPN	24.4		30.0
			SPD	16.4		20.8
			SPMW	17.3		23.2
			SSEH	10.2		15.1
			SSES	21.9		28.8
Time to	Time to quote (LVSSA)	TQARE	ENWL	0.4	0.1% BR	0.3

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	RIIO-2 Max Reward / Penalty	RIIO-2 value (£m annual, 20/21 prices)
			NPgN	0.2		0.2
			NPgY	0.4		0.3
			WMID	0.5		0.4
			EMID	0.5		0.4
			SWALES	0.2		0.2
			SWEST	0.4		0.3
			LPN	0.4		0.3
			SPN	0.4		0.3
			EPN	0.6		0.5
			SPD	0.4		0.3
			SPMW	0.4		0.3
			SSEH	0.2		0.2
			SSES	0.5		0.4
	Time to quote (LVSSB)	TQBRE	ENWL	0.4	0.1% BR	0.3
			NPgN	0.2		0.2
			NPgY	0.4		0.3
			WMID	0.5		0.4
			EMID	0.5		0.4
			SWALES	0.2		0.2
			SWEST	0.4		0.3
			LPN	0.4		0.3
			SPN	0.4		0.3
			EPN	0.6		0.5
			SPD	0.4		0.3
			SPMW	0.4		0.3
			SSEH	0.2		0.2
			SSES	0.5		0.4
	Time to connect (LVSSA)	TCARE	ENWL	0.4	0.1% BR	0.3
			NPgN	0.2		0.2
			NPgY	0.4		0.3
			WMID	0.5		0.4
			EMID	0.5		0.4
			SWALES	0.2		0.2
			SWEST	0.4		0.3
			LPN	0.4		0.3
			SPN	0.4		0.3
			EPN	0.6		0.5
			SPD	0.4		0.3
			SPMW	0.4		0.3
			SSEH	0.2		0.2
			SSES	0.5		0.4

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	RIIO-2 Max Reward / Penalty	RIIO-2 value (£m annual, 20/21 prices)
	Time to connect (LVSSB)	TCBRE	ENWL	0.4	0.1% BR	0.3
			NPgN	0.2		0.2
			NPgY	0.4		0.3
			WMID	0.5		0.4
			EMID	0.5		0.4
			SWALES	0.2		0.2
			SWEST	0.4		0.3
			LPN	0.4		0.3
			SPN	0.4		0.3
			EPN	0.6		0.5
			SPD	0.4		0.3
			SPMW	0.4		0.3
			SSEH	0.2		0.2
			SSES	0.5		0.4
Major Connections	Max exposure	Appendix 1, CRC 2E	ENWL	3.4	0.9% BR	3.1
			NPgN	2.5		2.2
			NPgY	3.4		3.0
			WMID	4.4		3.9
			EMID	4.3		4.0
			SWALES	2.0		2.0
			SWEST	3.0		3.0
			LPN	3.2		2.6
			SPN	3.4		2.7
			EPN	5.0		4.2
			SPD	3.4		2.9
			SPMW	3.6		3.3
			SSEH	2.2		2.1
			SSES	4.6		4.0
Engagement/Vulnerability	Max exposure	SE _t	ENWL	1.9	0.5%/-0.5% BR	1.8
			NPgN	1.3		1.3
			NPgY	1.9		1.7
			WMID	2.4		2.2
			EMID	2.4		2.3
			SWALES	1.1		1.1
			SWEST	1.7		1.7
			LPN	1.8		1.5
			SPN	1.9		1.6
			EPN	2.8		2.4
			SPD	1.9		1.7
			SPMW	2.0		1.9
			SSEH	1.2		1.2
			SSES	2.5		2.3

ODI	Component	RIIO-1 equivalent licence term	Network	RIIO-1 (£m annual, converted to 20/21 prices)	RIIO-2 Max Reward / Penalty +/- 0.2% RoRE	RIIO-2 value (£m annual, 20/21 prices)
DSO Incentive	Max exposure		ENWL			1.8
			NPgN			1.3
			NPgY			1.7
			WMID			2.2
			EMID			2.3
			SWALES			1.1
			SWEST			1.7
			LPN			1.5
			SPN			1.6
			EPN			2.4
			SPD			1.7
			SPMW			1.9
			SSEH			1.2
			SSES			2.3
Collaborative Streetworks (LPN)	Max reward		ENWL		+0.5% BR	n/a
			NPgN			n/a
			NPgY			n/a
			WMID			n/a
			EMID			n/a
			SWALES			n/a
			SWEST			n/a
			LPN			1.5
			SPN			n/a
			EPN			n/a
			SPD			n/a
			SPMW			n/a
			SSEH			n/a
			SSES			n/a
Dig, Fix, Go (ENWL)	Max exposure		ENWL		+/- 0.5% Totex	1.8
			NPgN			n/a
			NPgY			n/a
			WMID			n/a
			EMID			n/a
			SWALES			n/a
			SWEST			n/a
			LPN			n/a
			SPN			n/a
			EPN			n/a
			SPD			n/a
			SPMW			n/a
			SSEH			n/a
			SSES			n/a

Appendix 11 - Consultation questions

Consultation question on allowed return on debt

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

Step 1 - Consultation question on risk-free rate and equity indexation

FQ2. Do you have any views on the model to implement equity indexation that is published alongside this document, (the 'WACC Allowance Model - RIIO-ED2 30th April 2022 update Alternative Wedge')?

FQ3. In light of the upcoming change to the definition of RPI in 2030, should the RPI-CPIH inflation wedge be based on: a) a single year (as shown in the WACC allowance model when: cell D2 is "year 5 forecast" and cell B5 is "01/04/2022"); or b) should it be based on 20 years of inflation forecasts (as shown in the WACC allowance model when: cell D2 is "20 year geometric" and cell B5 is "01/04/2031")?

Step 1 - Consultation questions on TMR

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

FQ5. Can stakeholders confirm their view on the trade-off between: the objectivity of using outturn averages (even though the results may be materially higher or lower in future price controls than current TMR expectations); versus the benefits of putting more weight on current expectations (noting the evidence from cross-checks and the associated risk of subjectivity)?

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?

Step 1 - Consultation questions on beta

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?

FQ8. What are your views on the relative risk comparison shown in Table 10?

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?

Step 2 - implied cost of equity consultation questions

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

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

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

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?

Step 3 - allowed return on equity consultation questions

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

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

Inflation and WACC consultation questions

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?

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

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?

Consultation questions on financeability

FQ19. Do you agree with our approach to assessing financeability?

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

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

Consultation questions on corporation tax

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

FQ23. Do you agree with the proposed additional protections? In particular:

FQ24. Do you have any views on a materiality threshold for the tax reconciliation?

FQ25. 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?

FQ26. 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?

Consultation question on Return Adjustment Mechanisms

FQ27. Do you agree with our proposals for the RAM thresholds and adjustment rates?

Consultation question on indexation of the regulatory asset value (RAV)

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

Consultation question on regulatory depreciation and economic asset lives

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?

Consultation question on capitalisation rates

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

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

Consultation question on RAV opening balances

FQ32. Do you have any views on the use of forecast RAV opening balances for the start of RIIO-ED2, which will be trued-up following RIIO-ED1 closeout?

Consultation question on transparency through RIIO-ED2 reporting

FQ33. Do you agree that additional corporate governance reporting described (including on executive director remuneration and dividend policies), will help to improve the legitimacy and transparency of a company's performance under the

price control? If not, please outline your views in relation to the rationale provided for these additional requirements, including consumer protection.

Questions on consolidated reporting and calculation of allowed revenue

FQ34. What are your views on the proposed consolidation of the revenue RRP and PCFM, or applying a fully dynamic concept of allowed revenue?

Questions on licensee self-publication of allowed revenue

FQ35. What are your views on allowing licensees to self-publish the PCFM with their charging statements, rather than relying on an Ofgem publication or direction to determine allowed revenue?

Questions on best vs reasonable endeavours in charge setting

FQ36. What are your views on having a best endeavours obligation for charge setting: "The licensee must, when setting Network Charges, use its best endeavours to ensure that Recovered Revenue equals Allowed Revenue"?

Consultation questions on the appropriate time value of money

FQ37. What are your views on applying a single time value of money to all prior year adjustments, based on nominal WACC?

Question on forecasting

FQ38. What are your views on our proposed approach to using forecasts within RIIO-ED2?

Questions on forecasting penalty mechanism

FQ39. What are your views on the proposed charging penalty mechanism?

FQ40. What are your views on the proposed revenue forecasting penalty mechanism?

Consultation question on incentive lags

FQ41. What are your views on removing lags from incentives?

Consultation question on baselines for ODI incentive rates, caps, and collars

FQ42. What is your view on using RoRE as a general baseline for describing ODI caps, rather than base revenue?

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)?

FQ44. What is your view on the method of calibrating incentive caps in RoRE terms, or the overall proposed incentive caps?

Consultation question on bad debts

FQ45. What are your views on our proposal to remove the Bad Debt terms from the pass-through licence condition?

Consultation question on revenue profiling

FQ46. Should Ofgem re-allocate or re-profile revenue throughout the RIIO-ED2 price control period and if so, what profiles would be in consumers' interests?

Appendix 12 - Privacy notice on consultations

Personal data

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

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

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

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

2. Why we are collecting your personal data

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

3. Our legal basis for processing your personal data

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

4. With whom we will be sharing your personal data

No personal data will be shared with any organisations outside Ofgem.

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

Your personal data will be held for twelve months after the project is closed.

6. Your rights

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

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

7. Your personal data will not be sent overseas

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

9. Your personal data will be stored in a secure Government IT system.

10. More information

For more information on how Ofgem processes your data, click on the link to our “Ofgem privacy promise”.