Decision

RIIO-3 Sector Specific Methodology Decision – Finance Annex

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This is our decision on the methodologies we will apply for the electricity and gas transmission and gas distribution sectors in the RIIO-3 price control, which will run from 1 April 2026.

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1. Introduction

1.1 The costs of operating and developing the gas distribution (GD), gas transmission (GT) and electricity transmission (ET) networks include the financing costs that the network companies incur. Consumers ultimately pay for these costs through their energy bills. These costs include the returns that we allow for debt and equity capital invested into network companies. We use incentives to encourage network companies to drive down costs and improve service quality. These incentives, as well as the ability for a company to make decisions around its actual capital structure, mean that a company's actual return can be higher or lower than its allowed return.

1.2 We set a financial framework, and associated policies and methodologies, for price controls that are broadly stable and predictable over time. This broad regulatory stability gives investors the confidence to continue to invest in the sector. It also helps us to achieve a low cost of capital without constraining our ability to act in the interests of consumers by adapting to changing circumstances and through adopting best practice.

1.3 In our FSNR Framework Decision, we noted that our approach to setting the allowed return on capital and assessing financeability would be substantially in line with the approach taken in RIIO-2.[1] In the Finance Annex of our Sector Specific Methodology Consultation (SSMC),[2] we described in more detail our proposals for RIIO-3, and sought views from stakeholders on the potential methodologies for setting financial parameters, including:

- allowed return on debt;
- allowed return on equity;
- our approach to financeability;
- our approach to corporation tax;

[1] Decision on frameworks for future systems and network regulation | Ofgem
[2] RIIO-3 Sector Specific Methodology Consultation – Finance Annex (ofgem.gov.uk)

- regulatory depreciation and economic asset lives; and
- a number of other finance issues.

1.4 In this Sector Specific Methodology Decision (SSMD) Finance Annex, we review the responses from stakeholders, present our analysis of the relevant evidence and lay out the methodology decisions we will take at this stage of the price control setting process. In this document we also signal a small number of areas where we will continue to engage with stakeholders on elements that require further analysis or development prior to setting a final methodology. At this stage of the price control setting process we are primarily defining the methodologies we will use to set the financial parameters in RIIO-3. Where relevant and useful to stakeholders, we present an 'early view' of associated outcomes (such as the costs of equity and debt). These figures will change based on updated data and evidence and will be confirmed in our Draft and Final Determinations in 2025.

1.5 In the SSMC, we described two macro developments in ET and the gas sectors that required us to review the way we use our regulatory finance toolkit.

1.6 For ET, there is a step-change in infrastructure investment requirements across GB to build out a zero carbon, more flexible and more secure energy system at pace. This need to diversify risk across the energy system, attract sufficient and low cost investment capital and support climate change goals, is coming at a time when the government's net zero policy is now reflected in a new statutory duty for GEMA.[3] To fulfil that duty, we need to offer consistency, clear signals and direction so as to provide certainty and assurance to investors that projects are viable, investable and deliverable.

1.7 The challenges for the gas sector are different, with demand expected to fall over time as the energy system adapts to support the transition to a carbon-free economy by 2050 to achieve net zero. We now have greater clarity on government net zero policies and potential decarbonisation pathways under the Electricity System Operator's (ESO) Future Energy Scenarios (FES). FES 2023 forecasts a significant reduction in gas volumes in distribution and transmission from the mid-2030s across all three of the net zero compliant scenarios. Against this backdrop, stakeholders have raised concerns about the pace of regulatory depreciation and the potential risk to the recovery of previous investment (asset stranding risk).

[3] See 'Net Zero Duty' in the Overview Document, Chapter 2.

1.8 We consider these macro developments carefully, in combination with the many attractive features of investment in energy networks and reflect these in the decisions described in the following sections. We also update our methodologies to reflect emerging best practice and new evidence.

1.9 In Section 2, we discuss our approach to setting the allowed return on debt. Here, we have taken on board evidence that the debt profile of ET and gas companies may start to diverge over time. In response, we plan to split our assessment of the efficient cost of debt, and the associated allowed return on debt, into an electricity network cost and a gas network cost.

1.10 We have recognised that in a period of rapid investment, as is anticipated for the ET sector in the coming years, it is even more important that our allowed returns are able to adapt to changes in market rates. For this reason, we have decided to weight the indexation of our allowed return on debt for ET companies in line with RAV growth. This will bring the allowances for SPT and NGET into line with the broad approach already in place for SHET. As the gas sectors are not expected to experience the same level of RAV growth in RIIO-3, and are likely to see declining RAV levels in future controls periods, we do not consider RAV weighting to be appropriate when setting allowed returns on debt in the gas sectors.

1.11 We have also progressed our work to address the inflation leverage effect that we first discussed in our Call for Input on Inflation in 2023.[4] Here we agreed to address this issue through the allowed return on debt methodology within the RIIO-3 price controls. Based on stakeholder responses and further analysis, we have decided to take forward inflation 'Option 1' and will pay the fixed rate element of the debt allowance on a nominal basis, with this proportion of the notionally geared RAV no longer being indexed to outturn inflation. This will completely remove the inflation leverage effect and ensure that equity returns at the notional capital structure are no longer impacted by high or low inflation. We will work further with stakeholders on an appropriate implementation for this decision.

1.12 These changes to the calculation of allowed returns on debt should help to ensure that companies are appropriately compensated (at the notional capital structure) for the debt financing costs that they face.

1.13 In Section 3 we lay out the 3-step process we will use when setting allowed returns on equity. Step-1 is our capital asset pricing model (CAPM)-based

[4] Call For Input - Impact of high inflation on the network price control operation | Ofgem

assessment of the market cost of capital (for network companies at the notional capital structure). Our approach here is broadly in line with the approach used in RIIO-2, with some methodological improvements that build on the 2023 UK Regulators Network (UKRN) Guidance recommendations[5] (UKRN Guidance).

1.14 In relation to the calculation of the Total Market Return (TMR), we have incorporated a superior inflation dataset (relative to what was available in RIIO-2) from the Office of National Statistics (ONS). We have also incorporated the ex ante estimation methodology recommended in the UKRN guidance and utilised by the Competition and Markets Authority (CMA) in recent determinations.

1.15 In relation to beta, we have taken on board evidence from stakeholders suggesting that our RIIO-2 beta comparator set can be improved. While we continue to see value in data from National Grid plc and the listed Water companies, we agree with consultation responses suggesting that our estimate may be improved by bringing in data from relevant European utilities. Doing so should give greater access to data that reveals investors' perceptions of the risks in energy networks and should particularly improve our insight into the risks currently associated with gas networks.

1.16 We have also laid out Step-2 of our estimation approach, and we described how we will incorporate 'investability' assessment into this stage of the process. We introduced the concept of 'investability', alongside our existing financeability assessment, to better understand whether the allowed return on equity meets the needs of the energy network sectors. We received substantial evidence on this issue, particularly from the network companies. We remain open to evidence on the best application of investability throughout RIIO-3. We have currently concluded that the primary focus for tackling investability-related issues is to a) ensure that our cost of capital assessment is as accurate as possible, including updating the beta comparator set as discussed at paragraph 1.15; b) cross check this estimate comprehensively to ensure that our estimate is not out of line with broader assessments of investor requirements and c) ensure we accurately capture and compensate efficient additional financing costs (such as equity issuance costs). We also consider that improvements in our assessment of the cost of debt, and updates to our approach to regulatory depreciation in the gas sectors, will support the overall stability of the RIIO-3 price control.

[5] UKRN (2023), UKRN guidance for regulators on the methodology for setting the cost of capital, pages 4 – 5.

1.17 We briefly discuss our anticipated approach to Step-3 of the process, where we retain the ability to adapt the cost of capital if there is sufficient skew in the overall package that the expected returns and cost of capital are no longer aligned. At this point, we do not anticipate reintroducing any adjustment or 'outperformance wedge' to reflect asymmetry of information.

1.18 In Section 4 we discuss our approach to setting the Weighted Average Cost of Capital (WACC) and in Section 5 we discuss our approach to assessing Financeability. Both approaches will be very similar to the respective approaches taken in RIIO-2, although we are exploring incremental improvements to our assessment of financeability.

1.19 As we noted in both our Framework Decision[6] and the SSMC, we considered it appropriate to set the allowed return on capital (WACC) in line with RIIO-2 and/or the UKRN Guidance recommendations unless there are good reasons not to. We have followed this approach when making decisions in sections 2 - 5.

1.20 In addition, where possible, reasonable and without undue impact on accuracy, we have attempted to simplify the methodologies used to calculate the cost of capital in RIIO-3.

1.21 In recent controls we have seen a trend towards regulators and stakeholders using or advocating for increased complexity when estimating the individual metrics used to estimate the cost of capital. We consider that, at times and in certain applications, this trend towards technical complexity may have led to false confidence in estimates without evidence of superior accuracy or benefits for consumers. We consider that, especially in relation to the cost of equity, we are often estimating future costs that are unknowable (certainly to the level of several decimal places), and that there may be overall value to consumers from the regulator and stakeholders focusing on less or simpler (but equally likely to be accurate) methodologies when forming our estimates. We reflect this approach in our decision-making.

1.22 In Section 6 we discuss our approach to Financial Resilience and our decision to further strengthen our financial resilience 'toolkit'. We are taking forward proposals to increase the requirements on network companies in relation to credit ratings and resource availability, and we are introducing a distribution block that will prevent companies from paying money to shareholders if gearing (debt as a percentage of total capital) exceeds 75%. The aggregate financial strength of the

[6] Ofgem (2023), Future Systems and Network Regulation – Core Document, paragraph 6.36

sector is currently strong, but it is vital that we remain vigilant to potential threats. We consider these measures improve our ability protect consumers from harm linked to significant deterioration in resilience whilst imposing no additional costs on companies operating with responsible financing strategies.

1.23 In Section 7 we discuss our approach to corporation tax, where we are taking forward a proposal to improve our definition of gearing within the tax clawback assessment.

1.24 In Section 8 we discuss our approach to Regulatory Depreciation. This is a particularly important regulatory tool in relation to managing the return of invested capital in the gas sectors. Here, we have listened to feedback from stakeholders and have decided to take forward proposals to further accelerate depreciation of past investment and plan for the full value of the RAV to be returned ahead of the government's net zero targets (currently 2050). Exploring further accelerating depreciation involves decisions that impact when costs hit consumer bills. This engages questions around intergenerational fairness - i.e. the balance between the interests of existing and future gas consumers. In Section 8, we lay out a range of options for implementing this change. However, we will continue to consult with stakeholders to ensure that a wide range of views are considered before we make a final decision on this difficult issue. We will also continue to work with the government to ensure that our methodology is aligned to government policy and that our approach to managing the net zero transition is as fair and coordinated as possible.

1.25 In Section 9 we discuss Return Adjustment Mechanisms (RAMs), where we expect our approach to be similar to that used in RIIO-2. We will keep this issue under review, and may make adjustments at Draft Determinations (DDs) to reflect evidence presented in network company business plans. We are particularly keen to ensure that the impact of major projects is effectively captured via our use of RAMs.

1.26 In Section 10 we discuss other financial issues such as capitalisation rate and directly remunerated services. In these areas we expect our approach to be broadly similar to that used in RIIO-2. In Section 10, we also discuss transparency through reporting measures, where we do not propose any changes to existing requirements.

1.27 The methodology decisions in this SSMD document are important, as they provide information and guidance to stakeholders and explain the way in which Ofgem will set the financial elements of the RIIO-3 price control. As noted, there are a

number of areas where the implementation of methodologies requires further engagement and collaboration with stakeholders, and we look forward to working on these issues in the coming months.

2. Allowed return on debt

Introduction

2.1 The allowed return on debt is an estimation of the return debt investors expect from an efficiently run company. The allowance considers debt raised in prior price control periods in addition to new debt to be raised during the current price control period. The allowance is an important feature to enable companies to have sufficient resources to raise and service debt capital to meet investment requirements.

2.2 The allowed return on debt allowance is funded by consumer bills. To further our principal statutory objective which is to protect the interests of existing and future customers,[7] it is vital that the allowance is structured to incentivise efficient financing outcomes and to protect consumers from the risks of financing decisions made by companies.

2.3 In RIIO-2, we achieved this by setting the cost of debt allowance in reference to a network licensee adopting the notional capital structure incurring forecast efficient average sector debt costs. The notional capital structure assumes that companies will raise a combination of fixed rate and index-linked debt (ILD) and adopt a set level of gearing. We will reassess these assumptions as part of the determinations for this price control.

Our approach for RIIO-3

SSMC Summary

2.4 In the SSMC, we signalled that we plan to consider whether there is evidence and justification for updating our approach for calculating the allowed return on debt to optimise it in the context of the increasingly differing and pace of investment at network companies. In addition, we stated we would integrate the findings of the Call for Input[8] on the impact of high inflation on the network price control operation and would incorporate UKRN Guidance when making decisions.

[7] Gas Act 1986 (legislation.gov.uk) - Section 4AA; Electricity Act 1989 (legislation.gov.uk) - Section 3A

[8] Call For Input - Impact of high inflation on the network price control operation | Ofgem

2.5 We asked five consultation questions that related to setting allowed returns on debt in RIIO-3. These were:[9]

- FQ1. Do stakeholders consider there to be good reasons to deviate from the overall approach set out under UKRN Recommendation 8?
- FQ2. Do stakeholders have evidence in support of, or opposition to, one or more of the updated indexation or inflation remuneration methodologies under consideration?
- FQ3. Do stakeholders have views on the potential approaches to implementation of the proposed methodology changes, including assumptions relating to ILD weights?
- FQ4. Do stakeholders wish to propose any other alternatives that have not been proposed?
- FQ5. Do stakeholders have any additional evidence for us to consider in our review of the additional borrowing allowances or infrequent issuer premium?

Summary of consultation responses

2.6 In relation to FQ1 and the proposal to set allowed return on debt in line with the approach set out under UKRN Recommendation 8, most stakeholders were supportive overall but with several caveats as to the application of methodologies.

2.7 Six network companies stated that, in principle, they supported adoption of the UKRN recommendation.

2.8 Centrica stated that recommendation 8 was a reasonable basis highlighting that the indexation of debt costs provides suitable incentives.

2.9 Six network companies challenged the exclusion of derivatives. One GDN requested an explanation of the differing treatment of cross currency swaps.

[9] As many of the answers to these questions can be broken down and applied in detail to specific elements of the allowed return on debt, we will generally consider stakeholder responses by topic rather than by question. In addition, where stakeholders (primarily the network companies) have commissioned expert reports (either directly, as a sub-sector or via the ENA), we will generally reference these directly to aid readability. Individual network companies may have discussed the evidence provided by these reports slightly differently in individual submissions, but the core of the issues raised should be well represented under this approach. Where companies have expressed views that were contrary to those expressed in the reports, we have noted these in addition.

2.10 One DNO suggested that the UKRN Guidance did not provide an appropriate basis to consider the proposed changes to the treatment of inflation in relation to the allowed return on debt.

2.11 One TO stated that due to high anticipated capex over RIIO-3, it disputed that companies have significant control over the timing and type of debt issuance as suggested in the guidance.

2.12 One GDN sought a company specific debt allowance for actual costs incurred.

SSMD decision and rationale

2.13 We have decided to set the allowed return on debt in line with UKRN Guidance, and do not plan to include most derivatives or to set company specific allowances. Our rationale for following this approach is set out below.

2.14 The UKRN guidance is broadly aligned to the RIIO-2 approach and we consider aligning to the guidance is beneficial for both regulatory transparency and predictability and constitutes an approach which is in the consumer interest. We do not regard that the UKRN guidance is deficient if it does not provide specific guidance on all aspects of the RIIO-3 proposals in an exhaustive manner. We do not consider that any of the responses provided compelling evidence to deviate from the UKRN guidance or that suggest our decisions would conflict with the guidance.

2.15 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 for their business and to their overall advantage.

2.16 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 of the decision to use derivatives should be borne by the companies and their investors.

2.17 Assessing derivatives at a single point in time creates complications where derivatives are used to profile cash inflows and outflows. This approach could create an incentive for companies to enter into derivative contracts immediately before the calibration exercise to profile cash flows. This could indicate higher costs in the upcoming price control than might otherwise have been the case, which could then lead to a higher allowance. Future derivative use is also very

difficult to predict. For this reason, a long-term approach to assessing the economic value of the derivatives over their full term would be needed to address the issues with an assessment at a given point in time.

2.18 The exercise to assess the overall value of all derivatives over the full term would also add significant complexity and amplify the time and resource burden of the calibration exercise. Such an assessment would be disproportionate given the potential benefits from doing so, given our view that the debt allowance can reasonably be achieved without derivatives and that any derivatives ought to be fair value.

2.19 We have therefore concluded that we will continue to exclude derivatives for the purpose of calibrating the cost of debt allowance, with one exception. With respect to foreign currency debt issuance, given GB network companies revenues are in GBP, we would consider the use of cross currency swaps to return foreign currency liabilities to GBP liabilities to be necessary, as there are no substitute non-derivative derived alternatives, for a prudent operator. In considering sector debt costs, we therefore consider the post-swap GBP equivalent costs of foreign currency issuance.

2.20 We believe that the allowed return on debt approach we have put forward in the SSMD is sufficient to address challenges from higher anticipated capex. We also do not consider there to be compelling evidence to suggest that companies no longer have significant control over the timing, tenor and type of debt instruments utilised. While higher capex may influence the choices a company concludes are most optimal or economic, we still expect companies would be able to evaluate a broad range of available financing options and evidence has not been provided to suggest that companies are constrained to one or a very limited range of specific instrument types or tenor.

2.21 We consider that a company specific debt allowance is detrimental to consumer interests as such an approach would dilute incentives to manage debt costs efficiently and expose consumers to risks emanating from financing decisions which we consider should be borne by equity holders.

Indexation

SSMC summary

2.22 A key consideration in formulation of the allowance is the management of market uncertainty with respect to future debt costs. Since RIIO-1, we have opted for indexation of the allowance to mitigate this uncertainty. In the SSMC we stated

that we intend to continue this approach. However, we also considered enhancing this mechanism to improve its precision, which is discussed below.

2.23 Since RIIO-1, an unweighted trailing average of the cost of debt index has been adopted[10] for network price controls. We flagged that we would review whether this remains the most appropriate methodology given (i) diverging capital demands between sectors, leading to materially different levels of RAV growth and debt financing needs (ii) relatively high debt requirements for certain sectors relative to previous requirements and (iii) the higher and more volatile interest rate environment. We flagged that we were cognisant that the existing indexation process does not fully align to changes in market rates, with the allowance generally responding slower than the corresponding market rate changes.

2.24 We also considered weighting the debt index by annual RAV additions, with assumptions applied for the refinancing of debt. We noted that this could mitigate near term challenges where the allowed return on debt deviates from our assessment of the cost of debt. This approach also protects consumers by compensating companies for capital raised to invest in infrastructure rather than financial engineering. A weighted allowance could also allow for the methodology to be more consistent between price controls and require lower ongoing regulatory intervention, for example via calibration or trailing average adjustments, presenting greater predictability of the allowance and opportunity for companies to optimise treasury strategy decisions.

2.25 We considered the following approach to weighting:

- Within the trailing average window, each year's spot rate is weighted by the amount of (nominal) RAV additions;
- Refinancing is assumed to occur to RAV additions from before the trailing average window and to the original opening RAV balance at the start of the analytical period; and
- The opening balance RAV is refinanced assuming an even distribution per year. So, if a 14-year average tenor is assumed, then each year 1/14th of the original opening balance RAV is refinanced again. We anticipate this would ordinarily be aligned to the length of the trailing average assumed.

[10] Scottish Hydro Electric Transmission differs to the standard methodology and has a bespoke weighted methodology which is discussed below.

Summary of consultation responses

2.26 All TOs and three DNOs were supportive of the RAV weighting proposals. Three GDNs saw some merit in the proposals, and four network companies requested further detail.

2.27 One GDN recommended differentiating the treatment between embedded and new debt suggesting that new debt will be raised in materially different market conditions. The company cited a confidential KPMG report as evidence.

2.28 One DNO has recommended the introduction of a small notional company concept with distinct indexation weightings applied.

SSMD decision and rationale

2.29 We have decided to introduce RAV-weighted assessment for all ET networks but retain the RIIO-2 unweighted approach for Gas networks. Our rationale for following this approach is set out below.

2.30 We note that there were limited objections to our RAV weighting proposals. In relation to differentiating between embedded and new debt, we consider that the current methodology already distinguishes these debt costs in the calibration exercise and does not require further modification. In paragraph 2.67 we explain how forward rate assumptions are incorporated into the calibration exercise.

2.31 We consider that introducing a RAV-weighting approach for ET would reflect a natural evolution of the current methodology. We also consider that the new approach offers better assurance that consumers will pay a fair price for capital while providing the necessary flexibility to address greater totex variability and rate volatility.

2.32 For Gas, RAV growth is anticipated to be substantially lower than ET. As a result, we do not consider that a weighted approach offers the same advantages. We also believe that in future price control periods the approach may need to be revised particularly as RAV and the total outstanding amount of debt in the sector begins to fall markedly. Given this, we have decided that the current unweighted approach for Gas minimises complexity and results in greater regulatory stability.

2.33 We will finalise the specific approach to weighting within the general calibration exercise conducted at both DDs and FDs. This will include the starting point of the RAV weighting period.

2.34 We consider the issue of a small company notional structure further in relation to the calculation of WACC in Section 4.

Calibration of the allowed return on debt

SSMC summary

2.35 In the SSMC we noted that we intended to continue calibrating the allowance by comparing efficient pooled debt costs of all GD&T networks. We noted that we would also consider evidence on whether calibration should be conducted across a single GD&T cohort or split into distinct sector cohorts in the context of the diverging capital requirements between each sector in RIIO-3.

2.36 We also stated that we were considering excluding the following instruments from the calibration exercise:

- Derivatives;
- Liquidity facilities, revolving credit facilities and overdrafts (as these are considered in the additional costs of borrowing, discussed in paragraph 2.75);
- Intercompany loans (as these do not generally represent commercial terms/pricing available from third parties);
- Subordinated instruments, such as 'Class B' debt; and
- Instruments with insufficient data to model.

Summary of consultation responses

2.37 All four GDNs and National Gas argued that gas companies will bear a higher cost of debt relative to the TOs for new debt, attributing this to sector specific risk. National Gas supported a split cohort on this basis. The companies cited a confidential KPMG report as evidence.

2.38 One GDN did not support splitting the calibration cohort between Gas and Electricity Transmission for embedded debt citing the need for regulatory consistency.

2.39 One TO suggested that the exclusion of inter-company loans should refer to short term trading balances and not long-term debt instruments from group companies. One DNO suggested it may be appropriate to include inter-company loans in the calculation, on a case-by-case basis, for example if a captive finance company loans the proceeds of debt issuance to its parent network company.

2.40 One TO supported a split cohort between Gas and Electricity Transmission but suggested a company specific cross check to ensure the transmission sector is

not unduly influenced by NGET's weighting. One GDN requested an explanation on the exclusion of DNOs from the calibration cohort.

2.41 One GDN requested a definition of efficiency, and how this will be applied in the calibration exercise.

2.42 One DNO disagreed with the calibration approach as they consider it does not adequately account for the timing/frequency of issuances, exposes licensees to financing of strategies they have no control over and does not account for the ratio of new debt and embedded debt. The company suggests that an alternative efficiency test of individual instruments should be adopted instead. One GDN proposed a company specific allowance including derivatives for efficiently incurred debt costs controlled by notional gearing.

2.43 Cadent suggested that adjustments are made to the assumed cost of debt borne by the company for the purposes of the calibration inputs to account for refinancing which was undertook to separate the entity from National Grid. Cadent argues that one-off costs associated with the refinancing should be included in the sector average to reflect the all-in economic costs of Cadent over time. Cadent has estimated that £295m of costs from the refinancing relate to the RIIO-3 period.

2.44 One GDN requested Ofgem reaffirm its definition of prudence provided in paragraph 2.43 of the RIIO-2 Final Determinations Finance Annex.

SSMD decision and rationale

2.45 We have decided to continue to conduct a calibration approach that considers average debt costs. However, we have decided to split the cohorts used in this exercise between Gas and Electricity networks. We continue to disagree with company specific or 'pass-through' allowances which we do not consider to be in the interests of consumers. Our rationale for following this approach is set out below.

2.46 The network companies expressed mixed views about potential changes to the calibration approach (and about the approach itself). Overall, we do not consider any of the submissions to represent compelling evidence to deviate from the overall aims of the calibration approach as adopted in RIIO-2.

2.47 Companies have significant control over the financing choices they make. Given this control, we consider it essential that companies are incentivised to act efficiently and that the risk of financing decisions resides with shareholders not consumers.

2.48 The calibration methodology aligns the allowance broadly to average forecast efficient costs. All companies receive the same allowance on the basis of the notional capital structure, and so individual companies are exposed to any deviations from the allowance. If the company's debt costs are above the allowance, the company will underperform and will have to absorb the additional cost through their wider returns (and vice versa) and so companies are incentivised to manage debt costs as efficiently as possible.

2.49 Under a pass-through approach, the allowance would align to actual company costs incurred. This means companies could not out or underperform the allowance, removing the incentivisation to raise finance as efficiently as possible. We therefore regard a "pass-through" approach to be detrimental to consumer interests. This approach is consistent with our decisions in RIIO-2.[11]

2.50 We also do not consider it appropriate to adopt any of the variations of the pass-through approach proposed by licensees.

2.51 We do not believe an instrument efficiency test would be robust and believe it would require significant resources without obvious benefits for consumers. An efficiency test would need to consider a range of parameters other than pricing to determine efficiency, including assessment of timing of issuance (it could be issued when the market was under stress), currency of issue (the optimal currency would be depend upon foreign market conditions and the swap market), tenor (at a particular time the pricing may be more economic at certain tenors or more consistent with an appropriate treasury strategy), intention of the instrument and supporting terms. When evaluating efficiency, we also believe that licensees would also benefit from informational asymmetry impairing our ability to conduct such an assessment.

2.52 We also consider adjusting for gearing to be insufficient. Companies are able to make financing choices which may not be considered efficient for a range of other factors as discussed above. A pass-through mechanism with a gearing test would not provide incentives to manage these factors appropriately.

2.53 We consider that structural differences may emerge between GDNs/National Gas and TOs due to the transition to net zero. We believe that these structural differences may subsequently impact the drivers of total debt costs between the two groups. For example, the higher expected RAV growth for TOs means debt

[11] RIIO-2 FD Finance Annex Document - Appendix 4
RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)

issuance for this sector is anticipated to be much higher than Gas over RIIO-3 in a relatively higher interest rate environment, increasing the relative total cost of debt for TOs over GDNs/National Gas. We consider that a split cohort would also address GDNs and National Gas submission that debt costs are diverging[12] due to differing risk perception between the sectors. We have therefore concluded that a split cohort between GDNs and TOs would result in greater accuracy and ability to manage the calibration process. On the same basis, given the potential for structural differences between the gas and electricity sectors, we do not consider it appropriate to include the DNO companies within a GDN/National Gas cohort.

2.54 We consider it generally desirable to have larger cohorts to avoid the risk outliers distorting the allowance. We note that an ET only cohort would be small comprising only 3 licensees. To address this, we will seek incorporate ED companies into the calibration exercise either directly or as a cross check. We have concluded that a company specific cross check would risk undermining the incentive and consumer protections from the national approach in line with the rationale to rule out pass-through mechanisms stated in paragraphs 2.49 and 2.50.

2.55 We do not consider there is merit in adopting different calibration cohorts for embedded and new debt. We believe that a split approach would increase complexity while not resulting in a more accurate assessment of the appropriate allowance for the sector. We do not regard the change as detrimental to regulatory stability with the fundamentals of the approach retained.

2.56 We have provided a summary of the proposed calibration approach below. In the summary we have addressed responses raised on excluded instruments and Cadent's proposed adjustments.

2.57 We continue to consider a range of factors when assessing the efficiency of debt. We consider that a binary measure of efficiency focused on the price of particular instruments relative to the market is not robust in this context. Such a narrow view of efficiency would not appropriately reflect other determining factors such as debt type, tenor, currency denomination, timing of issuance and resultant risk exposure. We consider this would weaken incentives to act appropriately and prudently with respect to debt costs.

[12] The supporting KPMG report has been submitted to us on a confidential basis and so we have not provided our opinion on the evidence submitted.

2.58 We do not consider that paragraph 2.43 of the RIIO-2 Final Determination Finance Annex provides a definition of prudence. The paragraph explains the role of the investment grade rating licence requirement to protect consumers from imprudent or risky choices from networks,

Step 1: Calibration Exercise Parameters

2.59 We initially select which companies should form the calibration cohort. The companies within the cohort should have similar structural characteristics which would determine their cost of debt. The assessment is conducted on an aggregated basis and we consider that this enables us to fairly incorporate all available efficient instrument data for a particular cohort. We consider it generally desirable to have larger cohorts and the greatest breadth of instrument data to avoid the risk outliers distorting the allowance.

2.60 We set capital structure assumptions which we describe as the notional capital structure. This includes the level of indebtedness (otherwise termed as gearing). This means the allowance is set on standard assumptions rather than actual company financing strategies. This approach helps us to protect consumers from the consequences of actual capital structure decisions, such as assuming relatively higher levels of debt.

2.61 We also choose to exclude most derivatives from the calibration given:[13]

- We consider that the debt allowance can reasonably be achieved using standard debt instruments.
- Derivative use varies between licensees and is likely to reflect company-specific risk management decisions. We consider that the costs and benefits should be borne by equity investors.
- Assessing derivatives at a single point in time creates complications where derivatives are used to profile cash inflows and outflows. This approach could create an incentive for companies to enter into derivative contracts immediately before the calibration exercise to profile cash flows. This could indicate higher costs in the upcoming price control than might otherwise have been the case, which could then lead to a higher allowance. Future derivative use is also very difficult to predict. For this reason, a long-term approach to assessing the economic value of the derivatives over their full

[13] For non-GBP debt, inputted data reflects the swap rate embedded in the cross-currency swap utilised to convert the proceeds to GBP.

term would be needed to address the issues with an assessment at a given point in time.

- The exercise to assess the overall value/efficiency of derivatives over the full term would add significant complexity and amplify the time and resource burden of the calibration exercise and would not likely achieve a robust result due to informational asymmetry and subjectivity associated with defining efficiency. It would be inappropriate to test efficiency based on the pricing achieved relative to market alone; an efficiency test would also need to consider other features including whether the intent, risk transfer, structure (such as tenor, seniority, instrument type), timing of origination in context of the consumer interest.

2.62 We will also exclude the following instruments from consideration in the calibration exercise:

- Liquidity facilities, revolving credit facilities and overdrafts (as these are considered in the additional costs of borrowing;
- Intercompany loans other than back-to-back arrangements (as these do not generally represent commercial terms/pricing available from third parties);
- Subordinated instruments, such as 'Class B' debt; and
- Instruments with insufficient data to model.

2.63 The selected instruments for exclusion broadly align to the SSMC proposal however we have chosen to generally include intercompany loans where these form back-to-back arrangements with a Finco following a response from a DNO to the SSMC. Under these arrangements, a distinct entity, or Finco, will issue bonds and then lend the proceeds at identical terms to the licensee. We have chosen to accept the inclusion of these instruments because the terms reflect the underlying bonds, and so we would expect these instruments to have terms and conditions available to an efficient operator if borrowing from an external third party. We do not consider that other intercompany loans would necessarily provide the same assurance and therefore intend to exclude these instruments from the exercise.

Step 2: Forecast Efficient Debt Costs

2.64 Within business plan submissions companies submit data on their current outstanding debt instruments. We review this instrument-level data making adjustments/excluding certain instruments where required so that the data reflects our assessment of reasonable and efficient debt costs.

2.65 We plan to adjust the assumed debt costs for the calibration cohort to account for the Cadent refinancing which is consistent with the RIIO-2 determination.[14] We consider that such adjustments are necessary so that the debt cost data reflect those of obtainable by efficient notional operator. Cadent's debt costs, on an unadjusted basis, reflect lower costs than would have ordinarily been achieved had the Cadent not incurred one-off costs to repay existing debt. We do not currently consider there are compelling reasons to deviate from our RIIO-2 methodology to determine these adjustments. Under this methodology, we consider that a total adjustment of £140m[15] would be applicable to RIIO-3.

2.66 We then aggregate the adjusted debt data enabling us to model the embedded (existing) debt contribution to forecast average efficient debt costs.

2.67 In our assessment, we also consider the forecast quantum of new debt be raised during the price control period. The new debt forecast will be composed of:

- Refinancing of maturing instruments – Using the embedded debt data, we forecast the quantum of debt to be refinanced with new debt.
- RAV driven issuance – We will also consider what new debt needs to be issued to maintain the notional gearing assumption in context of forecast changes in RAV for the overall aggregated cohort.

2.68 We then calculate a forward rate at which new debt in each year will be financed at. In RIIO-2 this was derived from the historic average premia of the yield to maturity of the IBOXX 10 year utilities index (an index composed of traded utility bonds) over the gilts which was then added to implied forward rates calculated from gilts. We will review this assumption as part of our draft determination for both Gas and Electricity.

2.69 With the volume of new debt forecast and the forward rate projections calculated, we are then able derive the new debt contribution to forecast efficient debt costs.

2.70 Combining both embedded and new debt forecast costs we can derive the average efficient debt forecasts for the cohort group.

[14] RIIO-2 DD Finance Annex Document paragraphs 2.34-2.38
draft_determinations_-_finance.pdf (ofgem.gov.uk)
[15] Our method results in total interest rate element cost of the NGG and NGET bond repurchases of £845m (the total cost according to tender document pricing was £513m for NGGT bonds and £410m for NGET bonds but this includes credit spread premium paid to bond investors as part of the tender which we consider to be a transaction cost for equity investors, so we strip this out), which when straight line amortised over the period corresponding to the maturity of those repurchased bonds would lead to adjustments over RIIO-3 of £140m

Step 3: Calibrating the allowance

2.71 In paragraphs 2.22-2.34 we stated that we would adopt a full indexation approach. This means the allowance companies receive is set with reference to a trailing average of an index of debt instruments. This means the allowance is able to dynamically adjust to changes in market rates throughout the price control period.

2.72 In order to determine the length of the trailing average and whether a calibration adjustment is required, we derive different index options (with or without an adjustment) that broadly match the forecast efficient average debt we computed for the cohort over the price control period.

2.73 To select our preferred solution, we model sensitivities to consider how well the different index options would adjust to changes to market interest rates. We would generally prefer the allowance to closely track changes to average efficient costs to avoid the risk of under or overcompensation of licensees. We also consider other scenarios such as changes to expected totex and inflation.

2.74 We then make a judgement on our preferred index option at both the draft determination and final determination stages. Examples of these outputs from RIIO-2 and ED2 are listed below:

- GD&T2:
  - Index selected: IBOXX GBP utilities 10 year + index
  - Calibration: 10 to 14 year extending trailing average
- ED2:
  - Index selected: IBOXX GBP utilities 10 year + index
  - Calibration: 17 Year trailing average + 55bps calibration adjustment.

Additional borrowing costs

SSMC summary

2.75 In the SSMC we noted that we expect to continue to provide allowances for efficient additional costs of borrowing. We noted that we would review and, if appropriate, update the size of the allowances as part of our analysis considering new and previously submitted evidence. In particular, we would consider what adjustments are required to the Consumer Prices Index including owner occupiers' housing costs (CPIH) issuance/basis mitigation allowance given the anticipated migration of the Retail Price Index (RPI) inflation measure to the CPIH

methodology from February 2030. We noted that we were not currently considering any new additional allowances. The current allowances consist of transaction costs, liquidity/Revolving Credit Facilities (RCF) costs, cost of carry and the CPIH issuance/basis mitigation allowances.

2.76 We also noted that we intend to continue providing an infrequent issuer premium, previously referred to as a smaller size/less frequent additional allowance in RIIO-2. We stated that we will review the size of the allowance and the issuance threshold at which it is provided.

Summary of consultation responses

2.77 The ENA, on behalf of Network Companies, commissioned a study from NERA on the sizing and scope of the allowances. NERA submitted that:

- The transaction Costs allowance should remain unadjusted at 6bps - NERA states this is derived from company data.
- The liquidity/RCF cost allowances should be increased from 4bps to 13bps - NERA argues this is to account for higher short-term borrowing rates and a 15% RCF drawdown assumption.
- The cost of carry should be adjusted from 10bps to 12bps - NERA states this is derived from updated data utilising an Ofgem based approach
- Increasing the CPIH issuance/basis mitigation allowance from 5bps to a range of 18bps to 23bps - NERA states this is derived from assumed CPI Issuance, RPI/CPI basis risk hedging costs and one standard deviation of historical CPI-CPIH wedge.
- Increasing the Infrequent issuer allowance from 6bps to a range of 10 to 18ps - NERA states this is derived from updated Constant Maturity Swap pricing forming a lower bound and a illiquidity premium estimated from bid-ask spreads differentials between sub-benchmark issues and those over £250m forming an upper bound.

2.78 NERA also submitted that for GDNs:

- Transaction cost allowances should be increased from 6bps to 8.5bps - NERA argues this is due to upfront fees being amortised over a shorter bond life.
- The cost of carry should be increased further from 10bps to 12-27bps - NERA argues this is because pre-financing costs are amortised over a shorter tenor bond.

2.79 NERA has also proposed a 5bps New Issuance Premium based on its analysis of the ability of companies to issue new debt relative to the iBoxx Utilities index.

2.80 One TO proposed a 9bps large issuer premium. The ET company stated that given the quantum of debt that the licensee will have outstanding over RIIO-3 and investor concentration limits for exposure to the licensee, the company would face an additional cost.

2.81 Citizens Advice recommended that we consider whether the Ofwat PR19 allowance was more appropriate. Citizen's advice cited that the Ofgem allowance of 25bps was higher than the 10bps allowance provided by Ofwat.

SSMD decision and rationale

2.82 We will make our decision on the additional borrowing allowances at draft determinations. We will seek additional data to complete our analysis of the allowances given the evidence submitted by licensees via NERA. Additional data will include updated transaction cost data, daily cash balance data and daily RCF drawings. This data will be gathered via business plans submissions and working groups. With respect to the infrequent issuance allowance, we will consider business plan submissions before setting the size and qualifying threshold for the allowance at draft determinations.

2.83 For the CPI/CPIH basis risk allowance, we intend to evaluate whether:

- licensees generally hedge the associated risk in a manner the allowance methodology assumes and,
- if not generally hedged, whether the basis risk constitutes a negative expected return for licensees.

2.84 If we conclude that licensees generally do not hedge the associated risk as assumed and that the expected return from the basis differential is neutral, we intend to remove the allowance.

2.85 IN RIIO-2, we had previously found that NERA's evidence used to underpin the "negative halo" was unreliable.[16] NERA has conducted analysis on a similar methodology to underpin their evidence in support of a New Issuance Premium allowance. We intend to re-conduct analysis of the halo effect on our preferred

[16] RIIO-2 FD Finance Annex Document - Appendix 3 - Consultancy report 18
RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)

methodology at Draft Determinations and consider whether adjustments to the allowance are required on this basis.

2.86 We consider there is insufficient evidence to support the provision of a large issuer allowance. We regard that the analysis provided draws on a too limited data sample (5 issuer pairs), does not establish that the issuance size is the causation of the cited spread differentials and does not account for the benefits of a muti-currency issuance programme (whereby an issuer can select the optimum market depending on prevailing pricing) and can mitigate GBP concentration.

Inflation treatment with respect of setting the allowed return on debt

SSMC summary

2.87 The cost of debt allowance for both RIIO-2 and RIIO-ED2 utilises a trailing average methodology. At each measurement point of the trailing average, this is deflated by a long run assumption of CPIH, being the year five Office for Budget Responsibility (OBR) forecast prevailing at that point. The long run assumption has typically aligned to 2%.

2.88 Use of a long run assumption to deflate the cost of debt allowance means the real allowance does not adjust for short term inflationary spikes or troughs, and only adjusts if there is a structural shift in long run expectations. This means the real cost of debt allowance remains invariant to outturn inflation. However, because the interest on fixed rate debt (ie the nominal cost) does not change with inflation, when outturn inflation rises, the real cost of fixed rate debt falls. The reverse is also true in periods where inflation falls below long run assumptions. This generates a mismatch between the allowed return on debt and the cost of debt incurred where inflation deviates from long run expectations. This mismatch generates out or underperformance potential for equity. We refer to this as "the effect" for simplicity in the text below.

2.89 It should be noted the extent of out or underperformance risk varies significantly by licensee due to differences in the proportion of fixed versus ILD in their respective capital structures. For ILD, the nominal cost is linked with outturn inflation and the real cost is held constant. This means an increased proportion of ILD reduces or removes the potential mismatch risk between the allowance and the real cost of debt incurred.

2.90 In the SSMC, we noted that we are considering changes to the allowed return on debt methodology to:

- Reduce or remove the correlation of shareholder real returns to inflation via the debt mechanism. We did not signal any changes to the principle of general inflation protection for shareholders (ie. allowed returns on equity would continue to be set in real terms); and
- Ensure the approach to compensating for debt costs is fair for consumers and does not result in excessive remuneration for licensees. It is important that the cost of debt methodology does not have an inherently positive expected return over the long run for licensees (and so negative for consumers) by underestimating inflation expectations priced into debt. In addition, variation in returns to equity driven by high or low inflation over the short run, even if balanced over the long run, may undermine the legitimacy of the price control as these do not correspond to consumer outcomes (such as quality of service).

2.91 At the closure of the Inflation Call for Input,[17] we stated that we intended to consult, via the SSMC process, on three possible options for amending the cost of debt allowance mechanism to address the impact of higher inflation. These options are listed below.

Inflation Option 1: Nominal allowance for fixed rate debt

2.92 At present the cost of debt allowance is set and recovered from customers in real terms. The inflationary element of returns is earned indirectly via the effective indexation of the RAV by outturn inflation.

2.93 Under Option 1, the cost of debt allowance for fixed rate debt would be provided on a nominal rather than real basis. To effect this change, a portion of RAV, aligned to the notional fixed rate debt assumption, would be delinked from outturn inflation to avoid compensating investors twice. The indexation of the RAV for ILD and equity would be unaffected.

2.94 In mathematical form, the proposal for RAV indexation and the cost of debt allowance under this option were:

$$Proposed\ RAV\ Indexation = \ Opening\ RAV * \big(CPIH * (1 - FRD\ NA)\big)$$

$$Proposed\ CoD\ Allowance = (Nominal\ FRD\ allowance * FRD\ NA) + (Real\ ILD\ allowance * ILD\ NA)$$

[17] [17] Call For Input - Impact of high inflation on the network price control operation – Conclusion and Next Steps document paragraph 3.1
Call For Input - Impact of high inflation on the network price control operation | Ofgem

Where:

RAV	means Opening Regulatory Asset Value (Reg Year T)
CPIH	means average of the CPIH Monthly Price Index readings (Reg Year T) /Average of the CPIH Monthly Price Index readings (Reg Year T-1)
FRD	means Fixed Rated Debt
ILD	means Index Linked Debt
NA	means Notional Assumption, the quantum of debt assumed to be financed by the referenced instrument
Real	means deflated by Long Run Inflation Assumption (prevailing 5th year CPIH OBR forecast at each index reading) approximately 2%

Inflation Option 2: Match indexation of the RAV to the long run assumption in proportion to the fixed rate debt notional capital structure proportion

2.95 This alternative proposal was derived from a solution set out by National Grid within its Call for Input response.[18] In this approach, the base remuneration mechanism for the cost of debt allowance would be unchanged with a real terms cost of debt allowance and compensation provided for inflation via RAV indexation. RAV, aligned to the notional fixed rate debt assumption, would be indexed by the long run assumption used to deflate the cost of debt allowance instead of outturn inflation. The indexation for the assumed ILD and equity portions would remain unchanged and indexed to outturn inflation.

2.96 In mathematical form, the proposal for RAV indexation and the cost of debt allowance under this option were:

$$Proposed\ RAV\ Indexation = \ RAV * \Big(\big(CPIH * (1 - FRD\ NA)\big) + ((LRA) * (FRD\ NA))\Big)$$

$$Proposed\ CoD\ Allowance = (Real\ FRD\ allowance * FRD\ NA) + (Real\ ILD\ allowance * ILD\ NA)$$

Where:

[18] National Grid's preferred view, outlined within its response to the Call for Input, is that no action is required. However, National Grid suggested consideration of an approach in line with Option 2 if Ofgem is minded to-take action.

RAV	means Opening Regulatory Asset Value (Reg Year T)
CPIH	means average of the CPIH Monthly Price Index readings (Reg Year T)/Average of the CPIH Monthly Price Index readings (Reg Year T-1)
FRD	means Fixed Rated Debt
ILD	means Index Linked Debt
NA	means Notional Assumption, the quantum of debt assumed to be financed by the referenced instrument
Real	means deflated by Long Run Inflation Assumption (prevailing 5th year CPIH OBR forecast at each index reading) approximately 2%
LRA	means Long Run Assumption - (prevailing 5th year CPIH OBR forecast at each index reading) approximately 2%

Inflation Option 3: Unchanged methodology – review of the long run assumption

2.97 In the event we do not opt for the methodology changes outlined above, we stated that we would review the long run assumption to consider whether there is a more appropriate measure of long-term inflation expectations priced into debt.

2.98 We noted that one approach under consideration is utilising breakeven inflation implied between UK sovereign nominal gilt yield and index linked real gilt yield. As index linked gilts are aligned to RPI, a wedge assumption would be implemented to derive a CPIH implied equivalent until 2030. From 2030, given the planned alignment of the RPI to the CPIH methodology a direct reading can be taken. Another interpretation of this approach is to derive the long run assumption from a medium term (circa 5 years) forward measure of breakeven inflation post the alignment of the RPI methodology to CPIH optimising the point of measurement dependent upon market liquidity.

Summary of consultation responses

2.99 The ENA, on behalf of all Network companies, argued there was insufficient evidence of consumer detriment over the long term. The ENA also remarked that more detail was required on the options including whether they deliver on the financeability and investability objectives or require changes to the other aspects of the price control package.

2.100 Six Network companies explicitly supported no change. The Network companies cited one or more of the following factors an absence of evidence there are flaws with the current regime, that the proposed options would form a material change

to regulation and impact the ability to raise capital and that the changes could damage investor confidence.

2.101 Some Network companies highlighted a preference between Option 1 and 2 with three network companies supporting Option 1 and four network companies supporting Option 2.

2.102 National Gas supported Option 3 highlighting there was an opportunity to refine the assumption by using a mix of short run and long run forecasts.

2.103 10 network companies objected to Option 3 citing that there was no obvious better long run assumption. One TO also remarked Option 3 did not meet Ofgem's objective to remove the effect and could have a negative effect on financeability.

2.104 One GDN commented that we had not considered other alternatives robustly for example an inflation Return Adjustment Mechanism (RAM).

2.105 One GDN commented that it was inappropriate not to consult with an option to maintain the status quo.

2.106 Two TOs suggested that Option 1 contained financeability benefits.

2.107 Two Network companies argued that applying changes to pre-existing RAV would be considered retrospective and should be ruled out.

SSMD decision and rationale

2.108 We have decided to implement Option 1 and apply this in proportion to the notional capital structure fixed rate debt assumption. Our rationale for following this approach is set out below.

2.109 We consider there is compelling evidence of both historic and possible future consumer detriment from this feature and a strong consumer interest in policy action. Our modelling indicates that over the RIIO-1 and RIIO-2 period, "the effect" will result in circa additional excess RAV growth of £3.2bn.[19] We consider this RAV growth is an unearned return and consumers have not paid a fair price as a result.

[19] The estimate has been derived from the model published alongside the call for input - Impact of high inflation on the network price control operation published in August 2023: Call for input model . The estimate has been updated with the March 2024 OBR data and input of RIIO-2 actual capital structures (a single point has been used as an approximation for capital structures throughout the modelling period).

2.110 Our analysis suggests that over RIIO-3 if CPIH is 1% higher than the long run assumption there would be an estimated £500m[20] of excess RAV growth per annum.

2.111 We consider the effectiveness and legitimacy of the price control is undermined where investor real returns are correlated to a macro-economic variable and not delivery for consumers.

2.112 In addition, we note evidence to suggest that inflation shocks have historically been more likely to be positive than negative.[21] As a result, if long run inflation expectations are above 2%, the consumer would be expected to pay above the fair price. Alternatively, central bank independence and inflation targeting may mean that inflation averages the 2% target over the long run.

2.113 Given the effect is symmetrical, if inflation were to fall below the long run assumption, consumers would be expected to benefit. By adopting option 1 or 2 this opportunity would be reduced. We consider that this is acceptable given the corresponding reduction in risk of overcompensation by consumers when inflation is above the long run assumption, the associated improvements to price control legitimacy and greater assurance that the cost borne by consumers represents a fair price.

2.114 We consider sufficient detail has been provided on the proposals and stakeholders have had ample scope to engage on these options. At the SSMC stage detailed descriptions were provided of each option with an accompanying illustrative model. Stakeholders also had the opportunity to request clarification through the working groups. Finally, we note that Options 1 and 3 were included in the original call for input released in Aug 23 and all three options were outlined in the next step document in Dec 23.

2.115 Both Option 1 and Option 2 addresses the effect for a company adopting the notional capital structure. We believe this protects the consumer interest and the legitimacy of the price control by providing more robust assurance that prices for the consumer are fair and efficient, mitigating the risk of companies realising material unearned gains due to inflation. Option 3 does not directly address the

[20] This estimate is derived from economic form modelling.
[21] There has been only 5 quarters since 1948 where the RPI YoY change has been below 0% whereas there have been 58 quarters where it was above 8%. We note that the UK has only adopted inflation targeting since 1992. Since 1992 there has been no quarters where the UK preferred inflation target measure (RPIX between 1992 and 2003 and CPI from 2003 onwards) has been below 2% or more of the target but 12 quarters where the measure was 2% or more above the target.

effect but may make the expected return from the feature closer to 0 if a new long run assumption was proved more robust.

2.116 We consider consumer bill charges would be more stable and predictable under Option 1 and 2 relative to the status quo because the linkage of RAV to outturn inflation would be reduced under these options. We do not consider that Option 3 has any impact on bill stability relative to the status quo.

2.117 With respect to Option 1, there is regulatory precedent for switching from a real allowed return on capital to a nominal allowance, albeit this consisted of a full migration of the WACC allowance from real to nominal.[22] We are not aware of a regulatory precedent for Option 2. Under both Option 1 and 2, we do not regard that Network Companies or the ENA have submitted compelling evidence indicating there are substantial risks associated to the perception of regulatory stability by investors which would impair investability and would outweigh the consumer benefits of removing the effect. We note Option 3, which could include retaining the status quo or a modest deviation from the currently policy would present the least risk with respect to regulatory stability.

2.118 For the Gas networks, given the potential reduction in the consumer base over time, we may accelerate depreciation to manage the impact on bills over the long run (please see Section 8 for further discussion of this). As Option 1 reduces RAV growth relative to the other options, this reduces the amount of depreciation required in future periods. This aligns with the rationale adopted by the Netherlands Authority for Consumers and Markets when it moved from a real to nominal return on capital. Conversely, the ET networks are expected to require significant capital growth over the period of RIIO-3. This is likely to require significant debt and equity issuance. Option 1 also reduces the amount of capital required to be raised by increasing near term cash receipts and reducing RAV growth. These ancillary benefits are not associated with Option 2 and 3.

2.119 Overall, we consider that the impact of financeability from these changes could range from modestly negative to modestly positive. We note that some credit rating agencies consider there to be a beneficial or credit positive effect to interest coverage ratios from the use of ILD if it meets certain criteria. We understand a similar effect is achieved in respect to cashflow interest cover financial covenants in some loan documentation adopted by licensees. With index

[22] The Netherlands Authority for Consumers and Markets switched to nominal capital allowed returns from 2022 for gas network operators.

linked debt, the issuer is able to receive a lower ongoing interest cost in exchange for an index linked principle (for derivatives via an accreting notional). This has the economic effect of transferring the benefit of the indexation of the RAV to debt investors in exchange for a lower ongoing service cost. Licensees highlighted that a change to the treatment of inflation could impair their ability to manage these ratios if they felt they could no longer issue ILD under the new methodology. We consider Option 1 to achieve an economically a similar effect, by reducing RAV indexation, the licensee receives higher cash allowances boosting ongoing interest coverage. This would address concerns regarding lower ILD issuance and the calibration of covenants in loan documentation as compared to Option 2, which does not improve cashflow based ratios.

2.120 We acknowledge there is a degree of uncertainty to how credit rating agencies will form opinions on these changes. We will continue to engage with credit rating agencies as we develop the implementation approach to this permanent change to the allowance methodology.

2.121 Under Option 3, if the status quo is maintained we expect this to be considered neutrally with respect to financeability however if a larger long run assumption is adopted this would weaken credit ratios and we would expect this to be negative to financeability in line with company submissions.

2.122 We interpret Option 1 as aligning the allowed return on debt mechanism to the return dynamics expected by investors. For fixed rate debt, the return to investor is provided via nominal ongoing interest costs. However, the current mechanism does not match these cashflow dynamics. Option 2 and Option 3 would not provide this benefit.

2.123 We have revised our bill impact from Option 1 to between £7.5pa-£12.5pa in the short run.[23] In present value terms,[24] we expect bills would be marginally lower under the long run under Option 1 than Option 2 as we forecast the equity issuance allowance would fall by circa £105m. We have provided an indicative graphical representation of bills under the 3 options below.

[23] The new impact estimate has been derived from using more precise inputs on asset depreciation profiles.
[24] Discounted by the associated network company WACC

Figure 1: Illustration of Option 1 versus Status Quo and Option 2 - CPIH=2%[25]

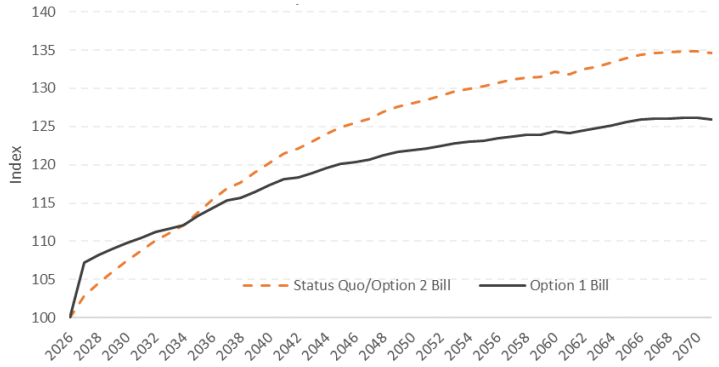
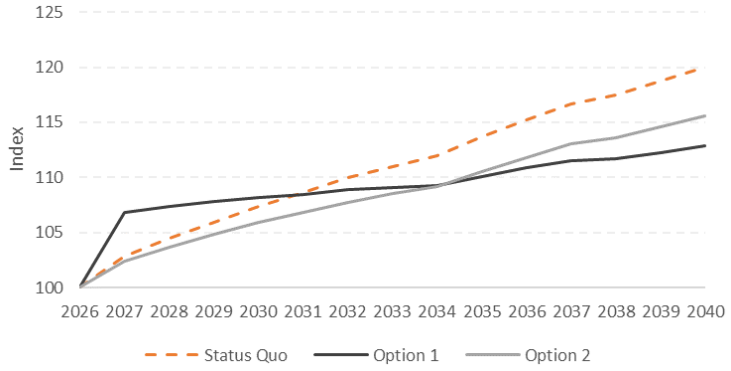


Figure 2: Illustration of Option 1 versus Status Quo and Option 2 - CPIH=3% (1% higher than long run assumption)



Source: Ofgem analysis

2.124 On balance, we have decided to implement Option 1, and apply this in proportion to the notional capital structure fixed rate debt assumption. We consider that there is a clear consumer interest from taking policy action to address the effect which on balance outweighs any of risks to regulatory stability or financeability raised by the network companies. Our assessment is that Option 1 is better suited to the strategic challenges of RIIO-3, aligns the cash allowance with the servicing requirements of fixed rate debt capital and we expect the option over the long run to result in lower costs for consumers. We did not adopt Option 3 as it does not address the effect and a larger long run assumption could be

[25] This estimate is derived from economic form modelling which captures the dynamics of RAV with notional capital structure assumptions. While the model is populated with data from RIIO-1 and RIIO-2, it makes many simplifying assumptions: historical RAV depreciation is approximated, all opex ignored, no tax impacts, debt and equity rates are fixed, RAV additions are fixed at a forecast of the last year of RIIO-2 (AIP 2023 value), calculations on a sector total basis, electricity/gas demand and the number of households are fixed (ie no decline of gas use is considered). The model is therefore not a forecast of future bills but seeks to capture the overarching economic impact of the policy changes at a sector level and provide a comparison between two given paths of bills.

detrimental to the financeability of licensees by weakening cashflow based credit ratios.

2.125 We believe we have adequately evaluated alternative approaches, including those suggested by network companies. With respect to an inflation specific return adjustment mechanism, we consider this approach would achieve broadly the same effect as Option 2 but with particularly positive and negative outcomes shared by consumers. Given that introducing a RAM is less precise than addressing the issue at source we have decided not to implement this suggestion.

2.126 We have also evaluated and consulted upon maintaining the status quo. Option 3 included a variation to maintain the current approach with the current long run assumption.

2.127 We do not regard that changes applying to pre-existing RAV are retrospective. The changes will only apply from RIIO-3 onwards and we note there are several elements of the finance package that are revised at each price control and apply to pre-existing RAV (such as the WACC allowances or depreciation).

2.128 While we are not implementing Option 3 in order to address the effect, a long run assumption will still be required for the ILD assumed portion (30% of total debt) which will continue with the old methodology. For this portion we will adopt the Bank of England CPI inflation target (2%) as opposed to the 5th year of the prevailing OBR CPI forecast as the long run assumption. The 5th year OBR forecast has usually aligned to 2% but recent (conditional) forecasts from the OBR have been below 2%. As stated in paragraph 2.112, there is evidence to suggest that inflation shocks had been more likely to be positive than negative historically and so we consider it inappropriate for the long run assumption to fall below the Bank of England target.

Review of the index-linked debt assumption

SSMC summary

2.129 We also proposed to review the index-linked debt assumption for the notional capital structure.

2.130 It would remain possible under either inflation Option 1 or 2 for the effect to persist given licensees may finance the assumed portion of ILD with fixed rate debt in their actual capital structures. To manage this, we considered reducing the notional assumption to 0% for ILD alongside Options 1 and 2.

Summary of consultation responses

2.131 One TO was supportive of reducing the ILD debt assumption as they considered this form of debt was more expensive and there was limited further capacity available to them in the market. One DNO company was also supportive of reviewing the assumption if such an assumption does not reflect how companies are financed in practice.

2.132 Seven network companies did not support the proposal. Companies cited one or more of the following reasons in their responses:

- Four network companies cited practical implementation issues.
- One DNO stated the notional capital structure assumption would influence actual capital structures
- Two network companies stated a revision on this basis would violate the UKRN guidance
- Two network companies stated the proposed change would remove an important source of capital.

2.133 One GDN suggested we should consider the impact of the policy changes on the supply of corporate ILD in the market.

2.134 One DNO suggested an appropriate transition period would be required if the assumption is changed.

2.135 One DNO suggested we should engage with credit rating agencies prior to changing the assumption.

2.136 One DNO stated there would be a residual risk out or underperformance due to inflation as an inflation forecast still needs to be used to estimate the cost of ILD in future period in the calibration exercise. The company stated that errors in the forecast would result in performance variations.

2.137 One GDN stated that changes in notional company assumptions need to be justified and subject to an impact assessment.

SSMD decision and rationale

2.138 After careful assessment of the evidence submitted, we have decided not to review the ILD debt assumption in context of this issue. We consider that a change to significantly lower the assumption would add greater complexity to the transition while only providing limited further mitigation of "the effect" in context of current licensee capital structures.

2.139 We will still evaluate whether the assumption at remains appropriate considering actual debt structures, business plans and our previous regulatory determinations and other market benchmarks - and will confirm our decision at DDs and FDs. However, we do not currently anticipate significant changes to the 30% ILD assumption used in RIIO-2.

Implementation considerations

SSMC summary

2.140 In the SSMC we noted that that some licensees have capital structures with significantly higher proportions of inflation linked instruments than that assumed for the notional capital structure. If policy Option 1 or 2 were to be implemented, this would reduce or remove the offsetting inflation sensitivity which corresponds to the inflation linked debt resulting in net inflation sensitivities for certain licensees. We believe that a new inflation sensitivity of this nature could adversely impact financial resilience in a manner which could not have been reasonably anticipated when licensees made these capital structure decisions.

2.141 In response, we confirmed we were considering the following three implementation options:

- Setting a time period for implementation for the entire sector which progressively implements the approach:
- We would expect the implementation period to be lengthy (10 years +) reflecting the length of time that may be required to reconfigure capital structures without stressing market liquidity or incurring undue cost; and
- We envisage the approach would migrate in straight line increments to the new approach in each increment corresponding to each year. For example, if a 10-year period is selected, in each regulatory year following the start of RII0-3 the portion of fixed rate debt (on a notional capital structure basis) remunerated using the new approach would increase in 1/10th increments.
- Aligning the method of remunerating debt to actual company ILD portions within their capital structures with a set transition period for licensees to migrate to an end notional company assumption. An example is included below:
- Licensee A holds 40% ILD at the start of RIIO-3, the end notional ILD assumption is 20%, notional gearing is set to 60% and the transition

period has been set at 10 years. The new fixed rate debt methodology will apply to 60% of outstanding debt (36% of RAV) and progressively in straight line increments migrate over the transition period to the notional assumption.

- Aligning the remuneration of debt, scaled to the notional gearing assumption, to actual company portions of inflation linked debt permanently. This would enable companies to maintain their choice of proportion of ILD aligning the remuneration mechanism accordingly.

Summary of consultation responses

2.142 Three network companies stated a transition mechanism should be in place longer than 10 years.

2.143 National Gas suggested that a linear transition mechanism is inappropriate as corresponding debt maturity profiles are not linear.

2.144 One GDN argued insufficient information had been provided on the transition mechanisms.

2.145 One TO suggested that network companies could propose transition plans withing business plans.

2.146 One DNO stated the new inflation approach should be applied to new RAV only.

2.147 Two DNOs argued that the proposal of transition mechanisms and a 0% ILD assumption could be interpreted to imply that Ofgem expects actual capital structures to follow and this would contradict previous Ofgem views that companies have the freedom to choose their own financing structures.

2.148 One DNO suggested that Options B and C violate the notional approach.

2.149 Four network companies suggested that the implementation options violate the notional approach.

2.150 One DNO expressed a preference for option C over options A and B.

SSMD decision and rationale

2.151 We have decided to engage further with stakeholders again ahead of making a decision on an implementation approach at the DDs and FDs.

2.152 The use of ILD in actual capital structures at network companies ranges from 0% to almost 90% of total debt. We consider further engagement on the implementation approach would be beneficial now that the approach we will take

to the inflation leverage issue and ILD use in the notional capital structure have been decided.[26]

2.153 We are not considering mandating any actual capital structure and do not consider that the implementation options described in the SSMC have that effect. For example, in the event a transition period was applied in either option A or B for the new approach to become progressively into effect, the licensee would not be mandated to reduce the proportion of ILD in its structure over the transition period.

[26] We note some respondents contextualised their response in context of the ILD being assumed to be removed from the notional capital structure.

Working Assumption for Business Plans

2.154 Without prejudice to the calibration of the index at Draft and Final Determinations, which will be based on scrutiny of the full information available at that time, we suggest that the networks use the following working assumptions:

Main allowance

Table 1: Indicative forecast average efficient debt costs (CPIH-real)

Sector	2026/27	2027/28	2028/29	2029/30	2030/31	Average
GDNs & National Gas (%)	2.49	2.68	2.77	2.88	3.05	2.77
TOs (%)	2.33	2.90	3.28	3.51	3.63	3.13

Source: Ofgem analysis of network company data

2.155 We have complied indicative forecast average efficient debt cost estimates utilising debt data submitted at the RFPR submissions in 22/23 and making simplistic assumptions on the future RIIO-3 period. We propose these are adopted as the cost of debt assumptions for the purposes of business plans. The assumptions are indicative and do not reflect the proposed adoption of the company specific RAV weighting of the trailing average for the TOs.

Additional Borrowing Costs

2.156 We consider that the RIIO-2 additional borrowing cost allowance of 25bps is the most appropriate assumption within business plans while we complete our review of the allowances.

3. Allowed return on equity

Introduction

3.1 The allowed return on equity is an estimation of the return required to attract and retain sufficient equity capital, in this case within the network companies in the GD, GT and ET energy network sectors. As a result, when setting an allowed return, we are generally basing this on our assessment of the 'required return' or 'cost' of this equity.

3.2 The allowed return on equity is funded via consumer bills. To further our principal statutory objective to protect the interests of existing and future consumers, it is vital that the allowance set is a fair rate and no higher than that required to ensure adequate and timely investment in GB's energy networks. The direct financial impact of each 10bps (10 'basis points' or 0.10%) on the allowed return on equity is worth approximately £55m per annum to current customer bills - highlighting the importance of setting a fair, well-calibrated allowance.

3.3 At the same time, attracting equity capital is a key factor in securing the step-change increase in investment in infrastructure that underpins key government policy objectives in areas such as the transition to net zero, climate resilience and energy security. We must set an allowance that contributes to an overall regulatory model that provides certainty and assurance to investors that projects are viable, investible, and deliverable.

3.4 The allowed return on equity in the RIIO-2 price controls was set in CPIH-real terms (assuming an estimated level of CPIH over the control).[27] Equity investors earn the inflationary element of their allowed return on equity through annual indexation of the equity portion of the RAV[28] at outturn levels of CPIH.

3.5 In the following subsections, we discuss the various elements we will use when setting the allowed return on equity for RIIO-3.

[27] As discussed in Section 2, where required we will assume that CPIH inflation will average the Bank of England's 2% target over the price control period and beyond.
[28] At the notional capital structure.

Our approach for RIIO-3

SSMC Summary

3.6 In the SSMC we asked a number of consultation questions that related to our approach to setting allowed returns on equity in RIIO-3. These were:

- FQ6. Do stakeholders agree with our interpretation and proposed application of UKRN Recommendations 2-7?
- FQ7. Do stakeholders consider there to be good reasons to deviate from the respective approaches set out under UKRN Recommendations 2-7?
- FQ8. Do stakeholders agree with our proposed methodologies where not specifically covered by the UKRN Guidance recommendations or our approach in previous price controls, such as the proposed approach to converting the RPI-real yields to CPIH-real inputs in the RFR calculation?
- FQ9. What comparators and/or timeframes are likely to provide the most accurate estimate of beta for the energy network sectors on a forward-looking basis?

3.7 As many of the answers to these questions can be broken down and applied in detail to specific elements of the calculation of an appropriate return on equity, we will generally consider stakeholder responses by topic rather than by question. In this subsection we will focus on consultation responses relating to the overall approach.

Summary of consultation responses[29]

3.8 Network companies (and their economic consultants) expressed concerns about 'rolling forward' the RIIO-2 methodology or excessively strict adherence to the UKRN Guidance.

3.9 Network companies noted that the basic building blocks of assessing the cost of capital as laid out in the UKRN Guidance remained appropriate. However, they expressed concerns that the UKRN Guidance was developed during a period of unusually low interest rates, low inflation and stable market conditions. The

[29] Throughout this section, where stakeholders (primarily the network companies) have commissioned expert reports (either directly, as a sub-sector or via the ENA), we will generally reference these directly to aid readability. Individual network companies may have discussed the evidence provided by these reports slightly differently in individual submissions, but the core of the issues raised should be well represented under this approach. Where companies have expressed views that were contrary to those expressed in the reports, we have noted these in addition.

network companies argued that certain interpretations of the UKRN Guidance, and in particular the use of a stable Total Market Return (TMR) assumption, may not be suitable (or at least not sufficient) for setting an appropriate allowed return for the RIIO-3 price control period.

3.10 Conversely, Citizens Advice told us that they did not agree that Ofgem's approach should be based on the UKRN Guidance as this would likely mean a potentially substantial upward bias in the allowed return on equity. Citizens Advice expressed concern that the UKRN Guidance, in its own words, 'brings together and consolidates existing methodologies used for setting the allowed return in regulated sectors', rather than focussing on identifying the 'right' cost of capital.

3.11 Citizens Advice noted its previous research that had highlighted 'at least £1.5 billion' of excess returns in the RIIO-ED2 determination on the basis of Ofgem's cross-checks, and previous work showing that regulators had allowed companies to 'overcharge consumers by £24.1 billion over the past 15 years'.

3.12 Centrica told us that it broadly agreed with Ofgem's interpretation and proposed applications of the UKRN Guidance recommendations 2-7, which it considered to be largely consistent with the RIIO-2 approach.

SSMD decision and rationale

3.13 We have decided to follow the overall approach laid out in the SSMC, including incorporating the UKRN Guidance recommendations unless there are good reasons not to. We will also use a similar multi-step approach as used in RIIO-2 to help ensure that we set an appropriate allowed return on equity for RIIO-3. Our rationale for following this approach is set out below.

3.14 While stakeholders agreed that our proposed approach was in line with UKRN Guidance, they did not agree that this would necessarily be appropriate. The network companies have raised concerns that (certain interpretations) of the methodologies recommended in the UKRN Guidance would likely lead to an estimate of the cost of equity that was insufficient. Core to these concerns seems to be a view that the approach laid out in the UKRN Guidance was codified during a period of, and so only suited to, a low interest rate environment. We disagree with this position, and do not see the methodologies recommended in the UKRN Guidance (or those used in RIIO-2) to be specific to a low rate environment. A key concern appears to relate to the assumption of a stable TMR, a common feature in UK price controls. We do not believe that the stable TMR assumption prevents regulators from setting appropriate returns on capital. In fact, we consider the stability of returns that this methodology brings to be a valuable

feature for investors. For example, the smoothing effect of this methodology prevented very low returns during periods of low or even negative real market interest rates. We discuss our approach to estimating the TMR further at paragraph 3.82.

3.15 Citizens Advice expressed a diametrically opposed view, stating that the UKRN methodologies were in effect a combination of regulatory precedent that had been shown to be excessively generous to investors at the expense of consumers. Citizens Advice have challenged Ofgem to either use what it considers to be more accurate methodologies, or where this is impractical, to assess the impact of using less accurate and/or upward biased methodologies. We note Citizens Advice's concerns, and agree that some of the CAPM methodologies used by regulators have been calibrated to function in line with available data rather than the purest interpretations of CAPM theory. Where we can, we will address these concerns at the parameter level in the sections below. However, we think that the practicality issues identified by Citizens Advice are likely to be structural and unavoidable when estimating the cost of equity for a price control. Where this is the case, we will rely on our Step-2 cross checks to ensure that our CAPM estimate does not lead to either excessive or insufficient returns. We discuss this further at paragraph 3.247.

3.16 It is important to be concerned about methodologies, including those recommended in the UKRN Guidance, that would suggest a cost of capital that was too high or too low. Both outcomes are likely to lead to harm for consumers - with excess returns leading directly to bills that are too high, and insufficient returns harming consumers' interests if they prevent the building of vital infrastructure and rapid progress in the net zero transition. We note that there is strong alignment between the RIIO-2 methodologies and the methodologies recommended in the UKRN Guidance. The RIIO-2 cost of equity methodologies were rigorously challenged in the appeal to the CMA which found them to be 'not wrong'. This gives us a degree of confidence that deploying similar methodologies in RIIO-3 (following consideration of possible alternatives, relevant evidence and our statutory duties) would be an appropriate way to proceed.

3.17 To further address any concerns around a mismatch between the result driven by our CAPM-based assessment and the 'true' market cost of equity, we will follow a similar 'multi-step' approach to RIIO-2 that considers a wider range of evidence from cross-checks when setting allowance returns on equity.

3.18 Step-1 of the process will be to assess the market cost of capital using the CAPM. We lay out our detailed methodology decisions for Step-1 in the next section.

3.19 In Step-2, we will consider a range of factors to ensure that our Step-1 estimate is sufficient but not excessive. Step-2 will consider a range of cross-checks on equity financeability, as in RIIO-2. However, we will also consider any evidence presented on broader equity 'investability' concerns during this step. We discuss our anticipated approach to Step-2 analysis at paragraph 3.247.

3.20 Under the appeal of the RIIO-2 price control, Ofgem's Step-3 process, and the introduction of an 'outperformance wedge', was considered to be 'wrong' by the CMA and was subsequently removed from the RIIO-2 controls (and was not applied for RIIO-ED2).[30]

3.21 We have noted the CMA's decision and will seek to address asymmetries 'at source' across the regulatory framework. However, if we consider it to be in the consumer interest to have 'skew' in the financial package (eg, via the calibration of incentive mechanisms in aggregate), we retain the discretion to use a Step-3 process to ensure that expected returns to investors again match our best estimate of the cost of capital.

3.22 At this stage, we would only expect to make such a 'Step-3' adjustment if the design of the price control led to a material skew in expected outcome relative to allowed returns and would seek to avoid undermining the power of incentives if we consider that these will provide positive outcomes for consumers. UKRN Guidance Recommendation 7 states that Regulators should only deviate from the mid-point of the CAPM cost of equity range if there are strong reasons to do so.

3.23 We consider the evidence presented in response to consultation questions FQ6 - FQ9 in more detail throughout the sections below. As many of the answers to these questions can be broken down and applied in detail to specific elements of the calculation of an appropriate return on equity, we will generally consider stakeholder responses by topic rather than by question.

Step 1: CAPM Cost of Equity

SSMC Summary

3.24 The cost of equity is not directly observable - it is a forward-looking assessment of the opportunity cost for investors. Calculating an appropriate cost of equity involves an assessment of the risks being taken by investors in energy network

[30] CMA (2021), GD&T Licensees vs the Gas and electricity Markets Authority, Final Determination – Volume 2B: Joined Grounds B, C and D, paragraph 6.182.

companies and the associated level of return required to compensate for those risks.

3.25 UKRN Guidance recommendation 2 suggests that since the cost of equity is not directly observable, it must be estimated using a widely accepted method. The recommendation is that regulators should continue to use the CAPM as their primary approach for estimating the cost of equity.

3.26 The CAPM has three inputs, all of which need to be estimated to calculate the cost of equity for energy networks and set an appropriate allowed return on equity for the price controls:

- The Risk-Free Rate (RFR);
    - The Total Market Return (TMR);[31] and
    - The Equity Beta (β)

3.27 These inputs are combined in the following way to estimate the cost of equity:

$$CoE = RFR + \beta(TMR - RFR)$$

3.28 In line with UKRN Guidance recommendation 2, we proposed to continue to use the CAPM as the primary tool when estimating the cost of equity.

3.29 We proposed to typically use methodologies consistent with a long investment horizon when estimating these metrics. We noted that as we are using historical data to estimate a forward-looking cost, this requires careful consideration and the application of regulatory judgement.

3.30 In line with the approach taken for the RIIO-2 price controls, we also proposed to 'index' the allowed return on equity on an annual basis, updating the allowance to reflect moves in the RFR.

Summary of consultation responses

3.31 Network companies generally supported the ongoing use of the CAPM model - but provided feedback on the most appropriate ways to calculate and calibrate the CAPM metrics. Network companies also flagged that some backward-looking data (such as in relation to beta data) may not capture forward looking risks and so would not meet investability requirements.

[31] Alternatively, the CAPM can use an estimate of the Equity Risk Premium input instead of calculating this metric as the estimate of the TMR minus the estimate of the RFR. We discuss our preferred approach below at paragraph 3.84.

3.32 The network companies, via the Energy Network Association, commissioned a report by economic consultant, Oxera (the Oxera report),[32] that focused on the appropriate approach to calculating the cost of equity using the CAPM.[33]

3.33 Citizens Advice disagreed with Ofgem's proposed approach and gave detailed objections to Ofgem's implementation of the CAPM (which we will cover in more detail the relevant CAPM metric sections below).

SSMD decision and rationale

3.34 We have decided to proceed as suggested in the SSMC, using the CAPM as the basis for our 'Step-1' assessment of the cost of equity. We discuss the evidence in relation to our proposals on the individual CAPM metrics in the sections below.

3.35 We note that most stakeholders agreed with the ongoing use of the CAPM, with caveats around the calculation of individual metrics and ensuring that the output is cross-checked to ensure that it is sufficient.

Estimating the RFR

Proxies used in the estimation of the RFR

SSMC Summary

3.36 The RFR is, in theory, the rate of return required to invest at zero risk. In practice, no investment is truly risk-free, so this hypothetical risk-free rate of return must be estimated.

3.37 UKRN Guidance recommendation 3 states that regulators should use recent yields on the index-linked gilts (ILG), with a maturity which matches the assumed investment horizon for their sector to estimate the RFR. This approach is in line with the RIIO-2 price control methodology.

3.38 In line with the RIIO-2 approach, we proposed to base our estimate of the RFR on the one-month (October, daily) average of 20-year ILG yields.[34] We noted that if we were setting an RFR for the entire control period, there may have been a benefit from basing our estimate of the RFR on a longer-average of ILG yield data

[32] Oxera (2024), RIIO-3 cost of equity - Prepared for Energy Networks Association.
[33] Oxera framed this report as focusing on the methodology that it considered to be most appropriate in the context of the RIIO-3 price controls, accounting for the constraints created by, and information provided by, the latest regulatory precedent, market developments and academic literature, although not accounting for sector-specific forward-looking risks not reflected in historical evidence.
[34] October is the month preceding the setting of the cost of capital for the coming year.

to avoid potentially 'locking in' short-term volatility for the whole length of the control. As the RFR will be updated annually to index the cost of equity (see para 3.72 below), we consider a 1-month average to be appropriate.

3.39 We did not anticipate a need to adjust this figure to take account of implied forward rates. As discussed by the CMA in the Redetermination of PR19, such 'forward rate adjustments' do not seem to provide a more accurate estimate of future spot rates than current spot rates[35] and so are likely to impair rather than improve our estimate of the RFR. In addition, and as discussed in further detail below at paragraph 3.77, we also proposed to index the cost of equity by annually updating the RFR. This updating process should negate any potential benefit from attempting to imply market expectations of future rates.

Summary of consultation responses

3.40 The Oxera report stated that, in principle, it agreed with the use of 20-year ILG yields as a starting point for estimating the RFR. Oxera note that the CMA's PR19 Redetermination had observed that the yield on ILGs closely match the key requirements of the RFR.

3.41 However, Oxera consider there to be evidence of a convenience premium in government bonds. Oxera referenced academic evidence in support of the convenience premium as being provided by Diamond and Van Tassel (2023). Oxera also referenced regulatory precedent of regulators including a convenience premium when estimating the RFR, and that the CMA, Civil Aviation Authority (CAA) and the Utility Regulator of Northern Ireland (UREGNI) had deployed a methodology based on including data from AAA non-Gilt bond indices as a way to estimate an appropriate convenience premium. Oxera stated that Ofgem should also include AAA data in its estimate of the RFR, and suggested an estimate of the convenience premium be set at the midpoint of gilt and non-gilt measures, or 11bps.[36]

SSMD decision and rationale

3.42 We have decided to set the RFR for each year of the price control based on the 1-month average of 20-year ILG yield, and not include other proxies in our estimate. Our rationale for following this approach is set out below.

[35] CMA (2021), PR19 Redetermination – Final Report, paragraphs, 9.228 - 9.234
[36] AAA non-gilt yields are compared to nominal gilts in order to avoid needing to make adjustments for inflation risk premiums that would be present in AAA non-gilt bonds and ILGs.

3.43 The network companies have argued that our proposed methodology for estimating the RFR will lead to an inaccurate and insufficient outcome, due to alleged deficiencies relating to capturing a convenience premium within ILG yields.

3.44 Ofgem's use of ILG's as the sole proxy for the RFR was carefully considered by the CMA during the appeal of RIIO-2 and was not considered to be wrong, with the CMA stating that that 'GEMA's decision to rely solely on ILG yields when estimating the RFR was not wrong'.[37]

3.45 The network companies reference two main sources of information and estimates of a convenience yield, academic research and the pricing of AAA non-government yields (a proxy for the RFR that was considered to be appropriate by the CMA in its redetermination of PR19 and has subsequently been included by the CAA[38] and UREGNI[39] when setting price controls).

3.46 The regulatory taskforce behind the UKRN guidance noted that 'in academic literature there are no empirical estimates of the convenience yield in ILGs at the 10-20 year CAPM investment horizon used by most regulators'.[40] The updated evidence in the 2023 Diamond and Van Tassel paper[41] referenced by Oxera does not address this deficiency and similarly focuses on assessing the presence of convenience yields in instruments up to only 3 years. Diamond and Van Tassel note a key driver of the convenience yield is the money-like feature of government treasuries. If this is correct would seem intuitive to assume that money-like features are strongest in short-dated government instruments and weakest in longer-dated government instruments. It would seem illogical to use longer-dated instruments, with significantly higher duration risk, for money-like purposes.

3.47 We also note that Diamond and Van Tassel highlight the correlation between convenience yields and periods of market dislocation: 'convenience yields…spike during the 2007-2009 US financial crisis, 2011-2012 Euro crisis and 2016-2017 Brexit crisis. Convenience yields grow the most in the country where each crisis is

[37] CMA (2021), Network Companies vs GEMA, Final Determination, Volume 2A: Joined Grounds: Cost of equity, paragraph 5.107
[38] CAA (2023), Economic regulation of Heathrow Airport Limited: H7 Final Proposals, Section 3: Financial issues and implementation, paragraph 9.247
[39] UREGNI (2022), GD23 - Gas Distribution Price Control 2023 - 2028, Final Determination - Main Report, paragraph 10.17
[40] UKRN Guidance, page 14.
[41] Diamond and Van Tassel (2023), Risk free rates and convenience yields around the world.

centered'.[42] We also see a similar pattern in Figure 3, presented in the Oxera report.

Figure 3: Oxera presentation of AAA spreads over notional gilts.

Figure 2.2 Nominal spreads of AAA-rated bond indices relative to benchmark government bonds

Note: The spreads are calculated by deducting yields on maturity-matching nominal gilts.
Source: Oxera analysis of IHS Markit and Bank of England data.

Source: Oxera, RIIO-3 cost of equity report

3.48 We interpret this observation as suggesting that the value of the convenience yield does not necessarily correlate with the conveniences it is argued to represent (ie, changes in the convenience of using government bonds as 'money' over time). An alternative interpretation of this observation is that in times of financial distress, non-government assets are not considered to be risk free (while in times of relative calm, when investors have high confidence in the future, a range of assets might approach the yields on assets considered to be genuinely risk free). This suggests to us that, on the basis that future market conditions are unknowable, gilt yields are a significantly better proxy for estimating the RFR than other instruments, including those with a higher credit rating than the UK government, such as AAA non-government bonds.

[42] Diamond and Van Tassel (2023), Risk free rates and convenience yields around the world, page 4.

3.49 We also note that Oxera's own analysis, summarised in paragraph 3.41, suggests that AAA non-government bonds currently trade at only a slight premium to nominal gilts.[43] Oxera note a spread of 22bps, and use an interpretation of the CMA's PR19 methodology to calculate the prevailing convenience yield to be 0.11%. However, an alternative approach would be to adjust AAA non-government bond yields for credit and liquidity risk and compare this to gilt yields. Using the CMA's 0.13% assumption for each of these risk premia (itself based on previous Oxera analysis),[44] we would estimate a RFR based on AAA non-government bond yields that was actually below gilts. This again suggests that our proposed methodology of focusing on solely ILGs is likely to provide a sufficiently accurate estimate of the RFR.

3.50 As previously noted by Ofgem in the appeal of RIIO-2, we also have methodological concerns about using AAA bond indices that are thinly populated with instruments and include instruments with remaining maturities that are materially different to the 20-year ILGs to which they are being compared. If we sub-select only instruments with a time to maturity of +/- 5 years relative to our 20-year ILG tenor, and compare the yield on these instruments to the yield on nominal bonds, we find a similar result to that described in paragraph 3.49. Namely, that after adjusting for credit and liquidity risk premia, these instruments would trade at yields at or below the comparable gilt yield. This result is shown in Figure 4 below.

Figure 4: Ofgem Analysis of AAA and UK Gilt data

Issuer	iBoxx Rating	Years to maturity	Annual Yield (%, March 2024)	Gilt Tenor Used	Gilt Yield (%, March 2024)	AAA Premium Over Equivalent UK Gilt	Adjusted Premium* (%)
Temasek Financial I Ltd	AAA	16.319672	4.69	16	4.29	0.40	0.14
European Investment Bank	AAA	15.040984	4.37	15	4.23	0.13	-0.13
European Investment Bank	AAA	19.934247	4.51	20	4.43	0.08	-0.18

* Adjusted premium reflects yield minus 13bps for each of credit and liquidity premiums

Average Premium (%)	0.21
Average Adjusted Premium* (%)	-0.05

Source: Ofgem analysis of iBoxx and Bank of England data

3.51 Including AAA non-government bonds would also complicate the annual indexation of the allowed return on equity (via updating the RFR), although we acknowledge that this problem is far from insurmountable as long as sufficient AAA instruments were available. However, there is no guarantee that such instruments would be available in future years, while we remain confident that UK

[43] Nominal gilts are used in the calculation of convenience yields in this way to avoid to the need to estimate the inflation risk premium that would be present in nominal bonds but not in ILGs, which are not exposed to any inflation rate risk.
[44] CMA (2021), PR19 Redetermination – Final Report, paragraph 9.110

government debt will remain an enduring, broad and liquid asset class on which we can base our estimates of the RFR.

3.52 The CMA previously recognised appropriateness of using ILGs as a proxy for the RFR in RIIO-2. We continue to consider there to be a lack sufficiently compelling evidence to include other proxies (or manual convenience yield adjustments) in RIIO-3. We are satisfied that our proposed methodology as laid out in the SSMC remains appropriate. We will set the RFR for each year of the price control based on the 1-month average of 20-year ILG yield. The 1-month average will be taken in October 2025 (ahead of the start of the price control in April 2026) and in the October of each subsequent year of the price control (to facilitate the indexation of the allowed return on equity).

3.53 For the purposes of the 'early view' of the cost of equity presented in this document, we use the 1-month average of the 20-yr ILG, calculated across March 2024. This gives us a RFR estimate of 1.07% in RPI-real terms. We discuss the conversion of this figure into CPIH-real terms below.

Setting the RFR in CPIH-real terms

SSMC summary

3.54 ILGs are 'RPI-real' instruments - they do not pay an annual coupon, but their value is uplifted annually by outturn RPI inflation. RPI inflation is considered by the OBR to be approximately 90bps higher than CPI inflation due to the method of calculation.[45] To use ILG yields as a proxy for the RFR, we must adjust yields to 'CPIH-real' terms by estimating the difference between future CPIH and RPI inflation - often referred to as the inflation 'wedge'.

3.55 Estimating the CPIH-RPI 'wedge' on a forward-looking basis is complicated by two main factors:

- As of 21 March 2017, CPIH became the Office of National Statistics' (ONS) lead inflation index. However, estimates of future CPIH inflation are less readily available than other national statistics such as the Consumer Price Index (CPI); and
- The Retail Prices Index (RPI) and its derivatives have been assessed against the Code of Practice for Official Statistics and found not to meet the required standard for designation as National Statistics. As a result,

[45] OBR (2019), Forecast evaluation report, Box, 2.3: Long run wedge between RPI and CPI inflation

the calculation of RPI will be brought in-line with the calculation of CPIH from February 2030,[46] at which point CPIH and RPI inflation rates will be identical. As 20-year ILGs will remain in issue through this transition process, we must consider how investors are including the impact of this change within current ILG prices.

3.56 We proposed to address the lack of CPIH forecasts by utilising forecasts of CPI from reputable sources such as HM Treasury (HMT) or the OBR as a proxy until such time as reliable CPIH forecasts are available. Historical CPI and CPIH rates of inflation have typically been very close on average: between June 2013 and June 2023 (inclusive), average monthly CPIH and CPI inflation varied by only 14bps.[47] This approach has also been adopted by Ofwat[48] and by the CMA.[49] Although the difference between CPI and CPIH varies in the short term, in making a long-term estimate for RFR commensurate with the use of 20-year ILGs, we consider assuming that CPI is a close proxy for CPIH is appropriate.

3.57 Recognising that there is no completely accurate way to calculate the view being taken by a broad spectrum of ILG investors, we proposed to use wedge data based on a simple assessment of:[50]

- official (HMT or OBR) forecasts of CPI and RPI out to a period up to the point of convergence of RPI and CPIH growth rates (assumed to be February 2030); and
- a zero wedge for the period ranging from the point of convergence to the maturity of the ILG being measured.

Summary of consultation responses

3.58 The Oxera report agreed with the '20-year inflation forecast' approach proposed by Ofgem in the SSMC but suggested that Ofgem should also include data from inflation swaps. Oxera note that the average of the 'forecast' and 'swap' methodologies suggests a current estimate of the RPI-CPI wedge of 0.39%.

[46] HMT (2020), A response to the Consultation on the Reform to Retail Prices Index (RPI) Methodology.
[47] Calculated using data from the ONS's consumer price inflation, UK: June 2023 update.
[48] Ofwat (2023), PR24 Final Methodology, page 6.
[49] CMA (2021), PR19 Redetermination – Final Report, paragraph, 9.35
[50] Any 'early view' of the cost of capital provided ahead of the Final Determination may also need to make an assumption about the difference between CPI and RPI inflation for the period beyond that covered by official forecasts but before the anticipated change in RPI calculation methodology in February 2030. If appropriate, we will include an assumed long-term RPI-CPI 'wedge', which we anticipate being based on the OBR's latest estimate of this figure.

3.59 In addition to the approach to estimating the RPI-CPI wedge, the Oxera report suggests that CPI is an insufficient estimator of CPIH. Oxera argue that using CPI as a proxy for CPIH would underestimate the RPI-CPIH wedge, and so would lead to an underestimate of the RFR. Oxera propose a 5-year average of the CPI-CPIH spread should be applied as an additional 'wedge' when calculating the RPI-CPIH wedge and suggest that this would currently lead to a 33bps upward adjustment.

3.60 Combining the RPI-CPI wedge of 0.39% (based on forecasts and swaps) and a CPI-CPIH wedge of 0.33% (based on 5-year average of outturn inflation), Oxera calculate that the RPI-CPIH wedge should be 0.72%.

SSMD decision and rationale

3.61 We have decided to adjust ILG yields to CPIH-real terms on the basis of a 'wedge' calculated primarily using the official forecasts methodology. Our current estimate of the average wedge for the price control period is 0.11%. We do not consider there to be sufficient evidence to justify further adjustments for differences between CPI and CPIH. Our rationale for following this approach is set out below.

3.62 The network companies (via Oxera) acknowledge our need to convert RPI-real yields into CPIH-real estimates. Oxera have suggested that we include data from swaps markets as well as our preferred 'official forecast' methodology for assessing the appropriate RPI-CPIH wedge. Oxera have also argued for a large adjustment to reflect potential differences between CPI and CPIH (when using CPI as a proxy for CPIH).

3.63 While we do not object in principle to the use of swaps data when considering the appropriate CPIH-RPI wedge, we currently do not see this as likely to provide a materially more accurate estimate. Given the potential for 'noise' in swap markets, it may actually introduce less accuracy into our estimate. As noted at paragraph 1.19, we are looking to simplify our estimation process where possible, and we see the additional of methodology for this reasonably small adjustment (in relation to overall WACC) as unnecessary. We may use swap data as a cross-check in DDs and FDs, but do not anticipate placing weight on this evidence unless the estimates using the two methodologies would give materially different results.

3.64 As noted at paragraph 3.55, calculating the forward looking CPIH-RPI wedge has been complicated due to the anticipated conversion of CPIH and RPI inflation methodologies (and so figures) from February 2030. To address this, we have calculated the wedge using the approach shown in Table 2 below.

Table 2: Illustration of CPI-RPI Inflation Wedge estimate

Price control year	RPI forecast/estimate (%)	CPIH forecast/estimate (%)	% of 'legacy' RPI in RPI figure	Forward wedge over 20 years (%)	Mean wedge price control period
2026/27	2.60	1.70	100%	0.20%	0.11%
2027/28	3.00	2.00	100%	0.16%	
2028/29	2.90	2.00	100%	0.11%	
2029/30	2.92	2.00	92%	0.07%	
2030/31	2.42	2.00	42%	0.02%	

Source: Ofgem analysis of OBR data

3.65 We have based our calculation on the 20-year geometric average wedge required over the 20-year tenor of our RFR proxy. To do this, we take medium term OBR forecasts for RPI and CPI for each financial year that are available.[51] For 2029/2030, we take 92% of a long run RPI assumption (we assume 2.9% based on a 0.90% forward looking CPI-RPI wedge) and 8% of a long run CPIH assumption (assume 2%) to generate an RPI forecast of 2.92%.[52] For 2030/31 we take 42% of the long run RPI assumption and 58% of the long run CPIH assumption to obtain and RPI forecast of 2.42%.[53] For financial years 2031/32 and beyond we assume both RPI and CPIH are equal to 2% and the wedge is effectively zero. We continue to use CPI forecasts as a proxy for CPIH expectations.[54]

3.66 As we need to provide this uplift to RPI-based ILG yields in the annual indexation process, we intend to use the calculated average 'wedge' of 0.11% in each year of the RIIO-3 price control. The alternative would be to have the wedge diminish

[51] We use data from Economic and Fiscal Outlook, Detailed Forecast Tables Economy, March 2024 edition.
[52] This assumes for April 2028 to March 2030 (all months used in the calculation of the FY average change), twenty-two out of the twenty-four months are using the old RPI definition. The RPI definition is expected to align with CPIH in February 2030.
[53] As above, this assumes ten out of the twenty-four months between April 2029 and March 2031 use the old RPI definition.
[54] Please note, we have aimed to give visibility by calculating the wedge that will be required during the price control period (given current estimates of inflation over that future period). Our approach and Oxera's official forecast approach are essentially identical, Oxera's 0.32% estimate simply reflects the wedge required at the current time. Oxera's report notes that their estimate of the wedge would need to be updated closer to the final determination - our approach proxies this. We will also update our estimate for final determinations. At this point, we will also have forecasts covering the bulk of the price control period and will have less need to include long-term CPI and RPI assumptions in our calculations.

from (currently) 0.30% to 0.02% as we approach 2030 and the conversion in RPI calculations to the CPIH methodology (where the ongoing wedge will be zero). Again, we have chosen what we believe to be the most simple but effective methodology.

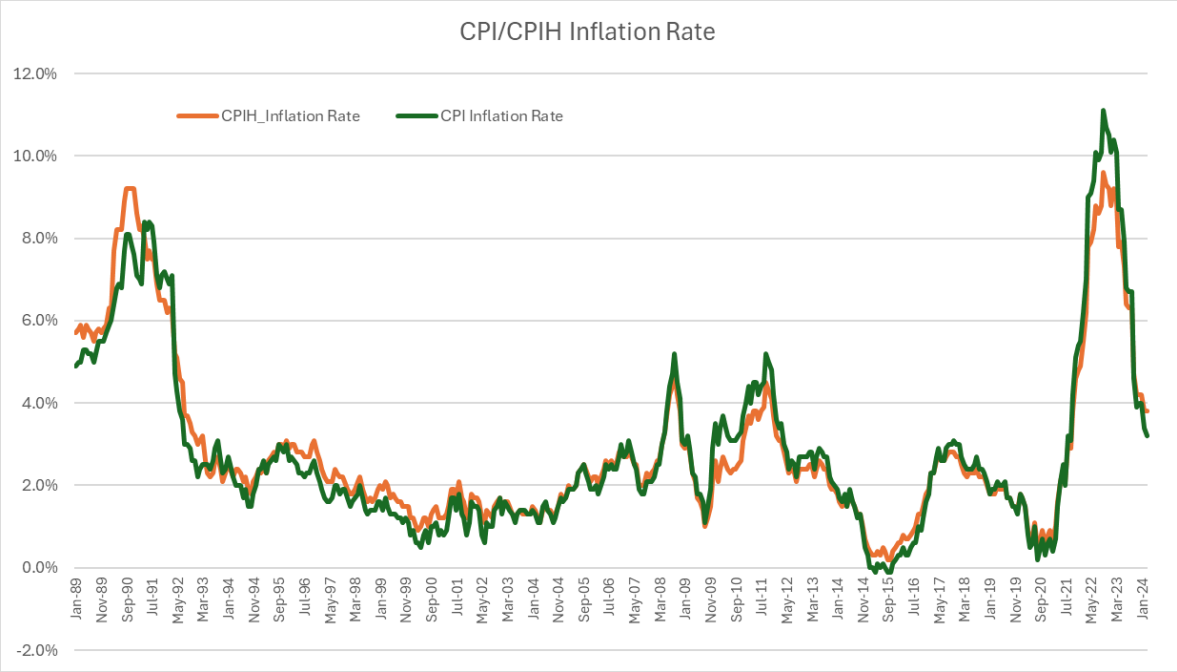
3.67 We do not agree with the network companies' arguments (as presented by Oxera) that there should be a material further 'wedge' between our assumptions of CPIH and CPI due to historical downward contribution of owner occupiers' housing costs. Oxera's argument in favour of a 0.33% wedge is based on the last 5 years of data which it notes is 'aligned with the length of the price control'. It is not clear to us that the length of a price control is a relevant metric when using historical data to inform future estimates. We would typically use as large a dataset as possible (without losing relevance), and at the extreme use more than 120 years of historical data when estimating a future TMR assumption. Unless there is reason to consider that the future will look materially different from the past, we generally look to use the longest history of data that is available and considered to be accurate.

3.68 Oxera note that CPI has exceeded CPIH by an average of 0.57% over 3 years, 0.33% over five years and 0.14% over 10-years. However, we would note that that vast bulk of this 'excess' CPIH inflation has occurred during the recent spike in interest and inflation rates. It is not clear that we should focus on this period at the exclusion of others, and this is not an approach that the companies would advocate in relation to, for example, recent lows in beta estimates from the same period.

3.69 The longer-term data[55] shown in Figure 5 shows that CPI tends to exceed CPIH towards the top of inflationary cycles and often trends somewhat below CPIH when inflation rates are lower. Current official forecasts of inflation suggest that CPI will be at or below the 2% official target over the years from 2025 - 2028, as shown in Figure 6. CPI inflation has been lower than CPIH inflation since October 2023, and while real rates remain materially positive, owner occupiers' housing costs may reasonably be expected to exceed average CPI inflation in the coming period.

[55] While directly observed CPIH data is available only from 2005, as noted by Oxera in relation to TMR deflation, 'for the period of 1988 to 2022, the ONS has published reliable estimations of the CPIH inflation levels'.

Figure 5: History of CPI and CPIH inflation rate 1989 - 2024



Source: Ofgem analysis of ONS data

Figure 6: OBR Forecast showing CPI inflation estimates for the period 2024 - 2025

	Per cent				
	2024	2025	2026	2027	2028
OBR (March 2024 forecast)					
GDP growth	0.8	1.9	2.0	1.8	1.7
CPI inflation	2.2	1.5	1.6	1.9	2.0
Unemployment rate	4.4	4.4	4.2	4.2	4.1
Bank of England (February 2024)[1]					
GDP growth[2]	0.2	0.6	1.1		
CPI inflation	2.6	2.7	2.2		
Unemployment rate	4.5	4.8	5.0		
Independent average (February 2024)					
GDP growth	0.4	1.2	1.8	1.7	1.5
CPI inflation	2.3	1.9	2.1	2.2	2.1
Unemployment rate	4.5	4.5	4.5	4.6	4.7

[1] Modal forecast based on market interest rates.
[2] Excludes backcast.

Source: OBR Economic and Fiscal Outlook March 2024

3.70 We do not consider it appropriate to adjust for a CPI-CPIH wedge (in either direction). The average difference between CPIH and CPI over a longer-term dataset is only 0.04%, and it is far from certain what the magnitude or direction of any difference between the measures would be over the price control horizon. It is also our understanding that CPI remains the proxy for CPIH used by market

participants and we have not seen evidence of a CPI-CPIH wedge used in when pricing financial instruments in other settings.

3.71 For the purposes of the 'early view' of the cost of equity presented in this document, we add our 0.11% RPI-CPIH wedge estimate to the 1-month average of the 20-yr ILG, calculated across March 2024. This gives us a CPIH-real RFR estimate of 1.18%.

Indexing the cost of equity via updating the RFR

SSMC summary

3.72 In line with the approach used during RIIO-2, we stated that we continue to view an annual update of the estimate of the RFR to be the simplest and most effective way to index the cost of equity. This should ensure that allowed returns on equity remain in line with relevant market rates.

3.73 We proposed to update the RFR used within our CAPM calculation (in relation to both the RFR and the calculation of the Equity Risk Premium (ERP) as the TMR minus the RFR) based on average daily ILGs yields in the October preceding the commencement of each year of the price control.

3.74 We noted that we did not anticipate a need to adjust this figure to take account of implied forward rates. As discussed by the CMA in the Redetermination of PR19, such 'forward rate adjustments' do not seem to provide a more accurate estimate of future spot rates than current spot rates[56] and so are likely to impair rather than improve our estimate of the RFR. In addition, we propose to index the cost of equity by annually updating the RFR. This updating process should negate any potential benefit from attempting to imply market expectations of future rates.

Summary of consultation responses

3.75 Stakeholders made limited responses on this issue.

3.76 The Oxera report stated that in addition to updating the RFR on an annual basis, Ofgem provide a forward-looking view on where the RFR allowance is likely to be during the price control period. Oxera stated that Ofgem relies on a spot gilt yield at the selected cut-off date as well as a forward premium and that Ofgem intends to retain this approach to the averaging period and indexation in RIIO-3.

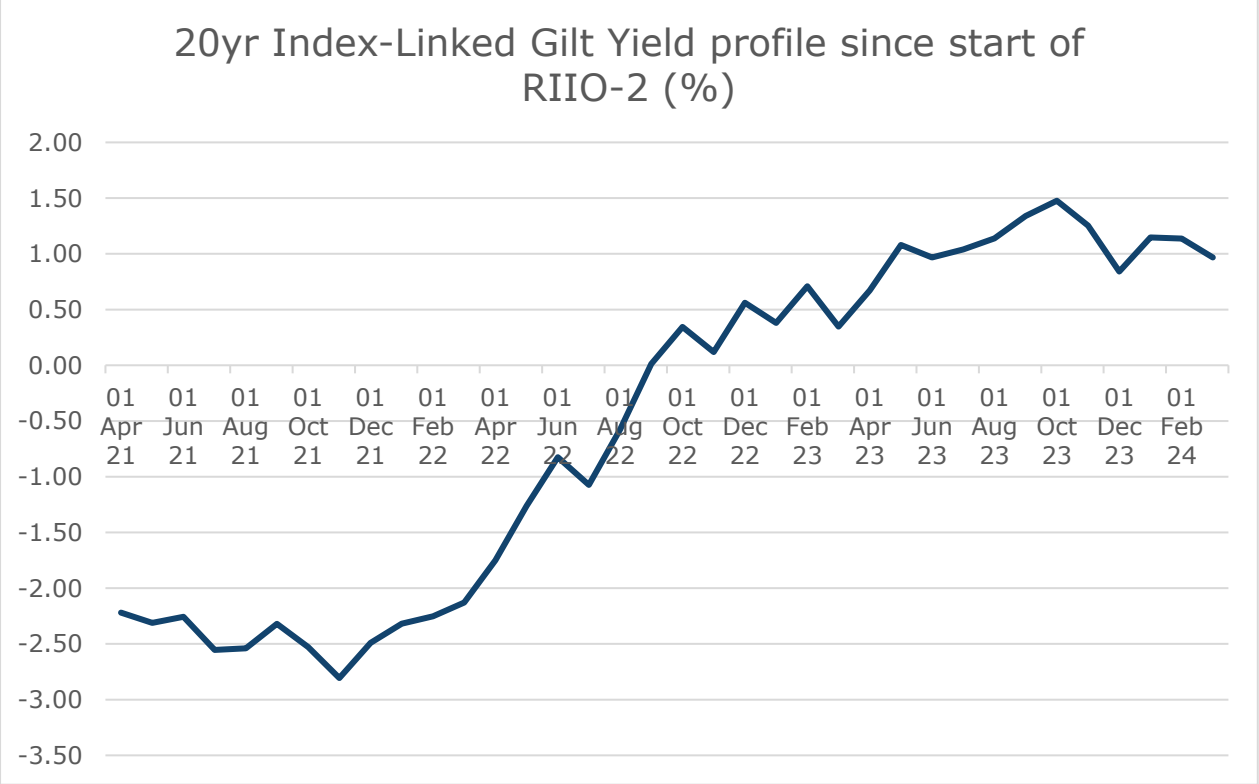
[56] CMA (2021), PR19 Redetermination – Final Report, paragraphs, 9.228 - 9.234

SSMD decision and rationale

3.77 No material evidence was presented on this proposal, and we have decided to retain the indexation approach used in RIIO-2.

3.78 This approach helps to ensure that the allowed return on equity 'keeps up' with market rates over time, protecting both consumers and investors from the risks of material diversion between the allowances set at FDs and market conditions over the price control period. The material scale of changes to market rates (proxied here by changes in our measure of the RFR) over the RIIO-2 period to date is shown in below. Without indexation of the allowed return on equity via the RFR, the allowed return on equity during the price control would have been substantially less than the cost of equity calculated under subsequent market rates.

Figure 7: 20-year Index-Linked Gilt Yields between April 2021 and March 2024



Source: Ofgem analysis of Bank of England data.

3.79 We will update the RFR within our allowed return on equity annually to be the one-month (October, daily) average of 20-year ILG yields, plus our assessment of the appropriate RPI-CPIH 'wedge'.

3.80 For clarity, and in contrast to how Oxera have characterised our proposed approach, in paragraph 3.36 of the RIIO-3 SSMC Finance Annex we note that we

do not anticipate a need to adjust our RFR estimate to take account of implied forward rates. Absent evidence that forward rate adjustments would improve our estimate, we confirm that we will not adjust our estimate of the RFR in RIIO-3 on the basis of implied forward rates.

RFR Estimate

3.81 For the purpose of the 'early view' of the cost of equity, our RFR estimates are summarised in the table below.

Table 3: RFR estimates for the 'early view' of the cost of equity.

Metric	Low	High
ILG Yield	1.07%	1.07%
RPI-CPIH 'wedge'	0.11%	0.11%
RFR	1.18%	1.18%

Source: Ofgem analysis of Bank of England and OBR data.

Estimating the Total Market Return (TMR)

Estimating the ERP

SSMC summary

3.82 The TMR is an estimate of the return that investors expect for taking the market-average level of risk. The TMR is an estimate and cannot be definitively calculated in advance.

3.83 The CAPM calculation requires an estimate of the ERP, the additional return over the RFR that investors expect for taking the market-average level of risk. Regulators often calculate the ERP as the difference between the TMR and the RFR (ie ERP = TMR - RFR). An alternative approach would be to estimate the ERP directly. The choice of estimating the TMR or ERP for the CAPM takes into consideration which metric is more stable over time (and so more likely to be a useful proxy for future expectations).

3.84 UKRN Guidance recommendation 4 states that regulators should estimate the ERP within the CAPM as the difference between TMR and the RFR. The UKRN Guidance notes that there is significant alignment amongst regulators in the overall approach to the TMR/ERP, namely that in recent determinations UK regulators assume greater stability in the TMR and therefore estimate it directly from

historical equity returns data.[57] The UKRN Guidance recommends that in the interests of maintaining consistency across sectors and across time, continuing with this approach remains preferable.

3.85 In line with the UKRN Guidance, we proposed to continue to estimate the TMR rather than the ERP and propose to calculate the ERP as TMR - RFR.

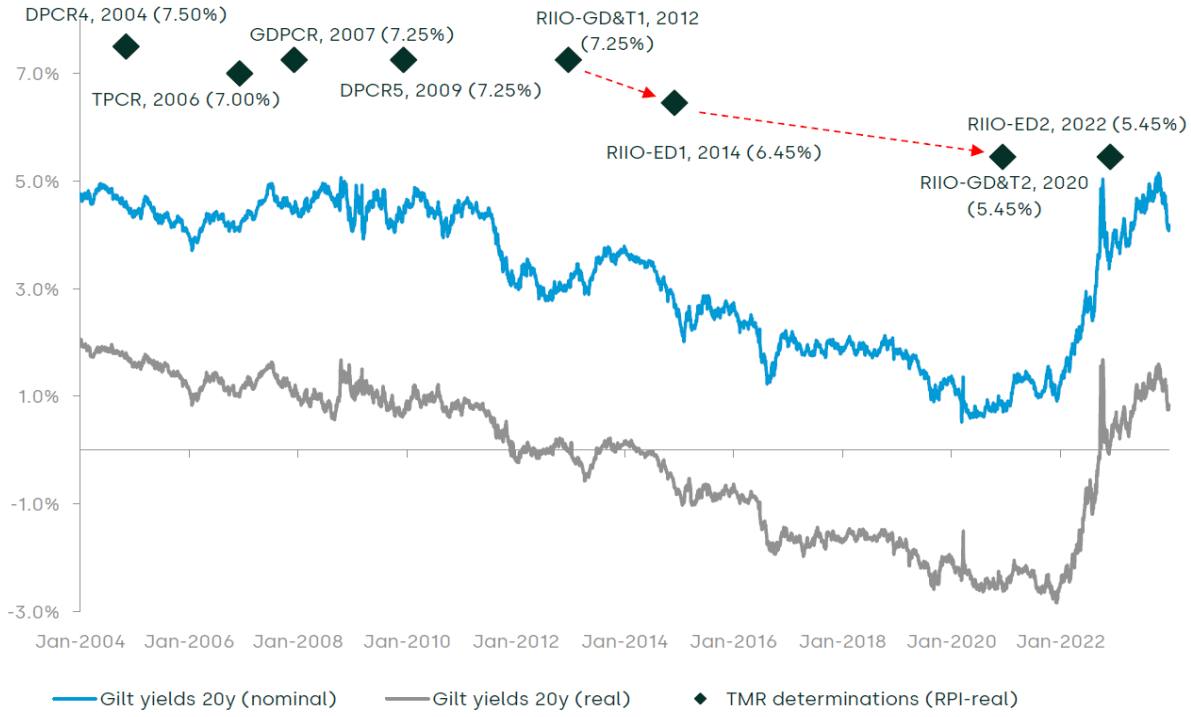
Summary of consultation responses

3.86 The Oxera report noted that the UKRN guidance on this metric suggests that the TMR metric would be relatively less variable than the underlying RFR but should not be the same fixed value for each price control. Oxera argue that Ofgem reduced TMR allowances in RIIO-ED1 and RIIO-2 to reflect lower gilt yields, and that a consistent regulatory approach over time would imply that Ofgem should increase the TMR assumption in RIIO-3 to this same level, which would be the equivalent to a TMR of 8.07% - 8.32% in CPIH-real terms. Oxera stated that their proposed TMR range of 6.5% - 7.5% would represent only 15% of the increase in gilt yields since RIIO-2. Oxera provided a chart plotting ILG yields and past regulatory determinations, shown in Figure 8. Oxera also argue that their ARP-DRP cross-check methodology also supports a TMR range that extends to 7.5%.

[57] For further discussion of whether the ERP or TMR is the more stable input, see Wright, Burns, Mason and Pickford (2018), Estimating the cost of capital for implementation of price controls by UK Regulators (the '2018 UKRN guidance'), Section 4.4

Figure 8: Oxera analysis of gilt yields and past regulatory determinations

Figure 2.6 TMR determinations and gilt yields (RPI-real)



Note: Where a TMR allowance is not specified in the determinations, it is based on the sum of RFR and ERP allowances. We convert the RIIO-2 determinations that are originally in CPIH-real terms to RPI-real terms with a stylised RPI–CPIH wedge of 1%.
Source: Oxera analysis based on BoE data and Ofgem determinations: Ofgem (2022), 'RIIO-ED2 Final Determinations Finance Annex', 30 November, pp. 38 and 48; Ofgem (2021), RIIO-2 Final Determinations – Finance Annex, 3 February, p. 49; Ofgem (2014), 'Final determinations for the slow-track electricity distribution companies Overview', 28 November, p. 40; Ofgem (2013), 'Strategy decision for the RIIO-ED1 electricity distribution price control Financial issues', 4 March, p. 15; Ofgem (2012), 'RIIO-GD1: Final Proposals Finance and uncertainty supporting document', 17 December, p. 22; Ofgem (2011), 'Decision on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1 Financial issues', 31 March, p. 35; Ofgem (2006), 'Transmission Price Control Review: Final Proposals', 4 December, p. 55; Ofgem (2006), 'Transmission Price Control Review: Initial Proposals', 26 June, p. 42.

Source: Oxera: Cost of equity for RIIO-3

3.87 Frontier Economics (Frontier) was also commissioned by the network companies (via the ENA) to write a report (the Frontier report) considering equity investability in RIIO-3.[58] The Frontier report stated that regulators were explicit that they were reducing their TMR estimates to reflect wider market evidence, referencing the CC (CMA predecessor) lowering its assumption or RP5 from 7% (RPI-real) to 6.5% (RPI-real), Ofgem's standalone consultation to revisit how it would set the cost of equity for RIIO-ED1 (relative to RIIO-GD&T1) and Ofwat's

[58] Frontier Economics 2024, Equity investability in RIIO-3, A report prepared for the ENA.

PR14 TMR estimate reducing to 6.25% - 6.75% (RPI real) from 7.4% in PR09, based on downward pressure on most asset classes.

3.88 On the basis that interest rates had now reversed, Frontier argued that regulators should increase their estimates of the TMR, and that investability test would confirm that this increase was required.

3.89 In a separate paper prepared for NGET,[59] Frontier argued that a 'TMR Glider' approach could be followed. This would be an assessment of what market evidence suggests an appropriate TMR estimate would be based on the observable level of yields on gilts used to proxy the RFR. Frontier argued that the RFR used by regulators explained past regulatory TMR decisions reasonably well, and that it would currently suggest a TMR estimate in the range of 7.55% - 7.86%.

3.90 Citizens Advice stated that they have consistently argued that TMR should represent all assets in the economy, rather than just UK equities, and that their submission to the RIIO-GD&T2 appeal to the CMA provided evidence that indicated that long run (real) returns on all assets are likely to be appreciably lower than the corresponding long run returns for equities. Citizens Advice stated that this was unsurprising given that equities generally exhibit greater systematic risk than all assets.

3.91 Citizens Advice noted that this argument had been accepted by the CMA when it notes that 'theoretically, the TMR should reflect the return on all assets in the economy, and that there is some evidence suggesting that total returns across all asset classes are lower than those on equities alone, and potentially materially lower'.

3.92 Citizens Advice argue that the UKRN guidance ignores these concerns on practicality grounds, but that the CMA also notes these grounds and advises that regulators should give 'careful consideration' to these issues. Citizens Advice argued that it sees no evidence that any consideration has been given to these issues, and that Ofgem should perform analysis to establish the potential level of generosity that the equity-based compromise provides.

[59] Frontier Economics (2024), The relationship between total market return and gilt yields, Prepared for National Grid Electricity Transmission.

SSMD decision and rationale

3.93 We have decided to continue to estimate the TMR and calculate the ERP as TMR - RFR. We will estimate the TMR on the basis of first principles, and do not plan to adjust our estimates up or down to reflect current market conditions. We will continue to base our estimates on equity returns only. Our rationale for following this approach is set out below.

3.94 The network companies have argued that regulators took account of prevailing market conditions when setting their estimates of TMR in previous periods of low or falling interest rates. Ofgem have previously taken such issues into account, most notably via the standalone consultation on assessing TMR for RIIO-ED1.

3.95 In RIIO-2, the TMR estimate drew heavily on the work of the 2018 UKRN paper on the cost of capital, which did not explicitly look to tailor the TMR estimate to prevailing market conditions. The paper did, however, move to defining returns on a CPI basis which led to a lower TMR estimate (in RPI-terms) than had been used in preceding price controls. While we did not explicitly change our RIIO-2 TMR estimate based on prevailing market conditions, we did note in the RIIO-2 SSMC that investment manager forecasts were significantly lower than the estimate drawn from the UKRN paper.

3.96 We agree with the network companies that a stable TMR does not mean 'fixed values', but we disagree that we should be basing our estimate on an uplift to the RIIO-2 figure to reflect subsequently higher market rates of interest or a higher RFR.

3.97 Firstly, the network companies have made arguments relating to what TMR estimates were in past periods with similar levels of base rates of interest or RFR estimates. This line of argument, and the associated suggested increases to the TMR estimate used in RIIO-2, ignores that best practice in relation to calculating real TMRs has developed over that period. Significant factors have been the emerging availability of superior inflation data for the 1949 - 1988 period and the broad shift to estimating returns in CPI/CPIH-real terms.

3.98 Secondly, it is important to remember that the stable TMR approach has brought broader stability to the allowed returns on equity - a feature that we consider to be valuable to investors in energy networks. If we had instead followed an approach of assuming a stable ERP, returns on equity in RIIO-2 would have been substantially lower. Companies are generally protected from excessively low returns on equity (relative to debt costs) via our assessment of financeability. However, consumers receive no commensurate protection or 'claw back' if returns

on equity sit higher than required to satisfy the financeability test. It is important that we do not employ TMR methods that protect investors when market rates of interest are low, and then change the methodology to benefit investors when market rates of interest rise, as this approach would not provide adequate protection for consumers' interests.

3.99 As a result, and as laid out in the SSMC, we will continue to estimate the TMR and calculate the ERP as TMR - RFR. We will estimate the TMR on the basis of first principles, and do not plan to adjust our estimates up or down to reflect current market conditions. However, we plan to continue to use investment manager forecasts as a broader cross-check. If our 'bottom-up' methodology for calculating TMR is materially out of line with what investors require, it should show up in a material difference between our estimate and the figure provided by this cross-check. For further discussion of investment manager TMR cross-checks, please see paragraph 3.268.

3.100 Citizens Advice raise an important point on the theoretical assumptions that underpin the classical CAPM model. It is correct that the model assumes the total market return measures the return on all possible risky assets. Financial market participants have generally considered this assumption to be impractical to implement. It is considered impossible to measure the returns across all potential risky assets, as this would include, for example, an almost infinite list of obscure assets with no observable prices.

3.101 We continue to believe that an 'all asset' approach is not viable in this context, and we know of no regulator or other financial institution using the CAPM that follows such an approach. Alternative sources of data on the value of capital over time, such as the work by Thomas Piketty made popular in the book Capital in the Twenty-First Century, is still considered impractical for use in this context given the acknowledged difficulties associated with analysing returns across a variety of asset classes.

3.102 Regulators and financial practitioners more generally solve this difficulty by applying a version of the CAPM that uses equity TMRs and equity betas. Citizens Advice have asked us to quantify the benefit that investors receive through this compromise approach. We do not think we can provide that quantification with accuracy. However, we also do not believe that the use of the CAPM model in this format leads to a material over-estimation of the cost of capital.

3.103 As this 'equity only' approach is a compromise all market participants have to make, similar assumptions may be used by both the providers of capital

(investors) and regulators when setting returns. This assumption is then tested through our cross-check (Step-2) process, which assesses whether our CAPM-based estimate is materially out of line with other potential approaches to estimating the cost of capital.

3.104 We acknowledge that the CAPM model is not perfect, and that there are compromises that have to be made to apply it in a way that is practical. However, we have not seen compelling evidence that there is a superior model for estimating the cost of equity in a price control setting. We continue to be concerned that broader, multi-factor models that do try to amalgamate more information on factors and asset prices will introduce more complexity into setting returns without any commensurate increase in accuracy. It is also far from clear that the use of more complex models would suggest that the cost of capital is lower than is suggested by our current interpretation of the CAPM model. We continue to see the CAPM model, including an equity-only TMR assumption, properly cross-checked for material deviation to a range of other measures, as likely to produce an estimate of the cost of equity that allows Ofgem to meet its statutory duties both to protect the interests of consumers and to have regard to the 'financeability' of network companies.

3.105 On this basis, and in line with UKRN Guidance recommendations, we will continue to measure TMR on the basis of equity returns alone.

Adjusting historical returns for inflation

SSMC summary

3.106 In relation to the use of historical inflation data, our proposed approach was in line with the UKRN Guidance. For the period of 1900-1949 (which predates the collection of RPI, CPI or CPIH data), we consider the Consumption Expenditure Deflator (CED) to be more appropriate than the Cost of Living Index (COLI), on account of its more realistic treatment of weights applied to consumed goods. For the period 1950-1987, regulators generally consider now that relying on backcast CPI or CPIH data is likely to be preferable to using RPI data (including RPI data that has been adjusted for the 'formula effect').[60] From 1988 onwards, sufficient data exists to directly observe rates of CPI and CPIH inflation.

[60] The formula effect represents that impact of the differences between the calculation methods of RPI and CPI. Methodological changes to RPI over time has meant the size of the formula effect has been inconsistent.

3.107 This combination of inflation datasets is different to that used in RIIO-2 – with ONS backcast data for the 1950-1987 period generally considered to be superior to the CPI-backcast data contained within the Bank of England's 'Millenium' dataset that underpinned the RIIO-2 estimates.

Summary of consultation responses

3.108 The Oxera report stated that it considered it most appropriate to deflate nominal historical returns using the CED series (for the period 1900 - 1949) and the new backcast series for the CPIH (for the period 1950 - 1988) if a backcast is used. Oxera noted that the new backcast CPIH series addresses the most concerning errors found in the previously existing CPI backcast. Oxera also note that for the period 1988 - 2022, the ONS has published reliable estimations of the CPIH inflation levels.

SSMD decision and rationale

3.109 There seems to be broad agreement across regulators and stakeholders that current best practice when deflating historical returns is to use a combination of the CED (1900 -1947), ONS's CPIH backcast (1950 - 1988) and ONS 'actual' CPIH datasets. This is the combination of data we will use to deflate historical returns in RIIO-3.

Calculating ex post historical returns

SSMC summary

3.110 When calculating estimates based on historical ex post analysis, we proposed to apply a range of averaging techniques to the data to arrive at an appropriate input into our overall TMR estimate. We noted that Ofgem, other sector regulators and the CMA have considered or placed weight on a number of approaches in recent price controls.

3.111 In the SSMC, we welcomed evidence on the appropriate weight that should be applied to these techniques. We noted that we will examine the strength of the evidence for and against different averaging techniques and may set our estimate range or point estimate using a single methodology or a combination of approaches.

Summary of consultation responses

3.112 The Oxera report stated that the academic literature is broadly supportive of adopting the arithmetic average for estimating the ERP to use when computing the required equity returns for valuation and capital budgeting purposes (and

reference Berk and DeMarzo in support). Oxera also suggest this is the view expressed by the CMA in its Redetermination of PR19.

3.113 Oxera also argue that using non-overlapping annual holding periods ensures no serial correlation in returns, referencing a submission to the UKRN that found that for one-, five-, 10- and 20-year non-overlapping holding periods Oxera had found no statistically significant serial correlation in returns. Oxera argue that using a non-overlapping one-year arithmetic average was a more robust estimation methodology than using the geometric average and adjusting this upwards for the potential impact of serial correlation (or using arithmetic averages of longer holding periods).

3.114 Oxera argued against other estimator methodologies such the Blume, Cooper or JKM estimator. Oxera noted the CMA view from the RIIO-2 appeals that alternative estimators had been rejected in favour of the simple arithmetic average. On this basis, Oxera provided an ex post TMR estimate of 7.0%.

SSMD decision and rationale

3.115 We have estimated the ex post TMR to be 6.97%. We have decided to base our analysis on the arithmetic average of the dataset. Our rationale for following this approach is set out below.

3.116 Regulators, including the CMA, have used a range of averaging approaches when estimating the ex post TMR estimate. Much of the debate on the optimal approach relates to the regulatory 'question' when setting the TMR - specifically whether this figure relates to a 'capital budgeter' or 'portfolio investor' application.

3.117 Our estimates of the ex post TMR using historical returns from the 2024 edition of the Dimson, Marsh and Staunton (DMS) dataset, the inflation dataset discussed in paragraph 3.109 and a range of averaging techniques is shown in Table 4 below:

Table 4: Ofgem estimates of real TMR using various methodologies

Averaging approach	**10yr**	**20yr**	**Dataset**
Arithmetic Average (dataset)			6.97%
Geometric Average (dataset)			5.27%
Geometric Average + Uplift (dataset)			6.82%
Arithmetic average (overlapping)	6.81%	6.93%	
Arithmetic average (non-overlapping)	6.65%	6.72%	
JKM Unbiased estimator	6.86%	6.72%	
JKM Minimum MSE estimator	6.58%	6.16%	
Blume estimator	6.85%	6.71%	

Source: Ofgem analysis incorporating current DMS nominal return data and ONS inflation data

3.118 Following the approach used by the CMA in its redetermination of PR19, we focus on the unadjusted arithmetic and geometric approaches. As all but one of the JKM and Blume estimators sit within a range created by the arithmetic and geometric approaches, these adjusted estimators appear to be largely redundant. As we are looking to simplify the estimation process where appropriate, we will not consider these estimators when setting the TMR estimate for RIIO-3.

3.119 Using the geometric and arithmetic approaches would give an ex post TMR range of 6.65% to 6.97%. We have some concerns about the use of non-overlapping approaches, as this leads to a small dataset and the potential for volatility in long-term estimates based on small changes to the time periods being measured. Excluding the non-overlapping estimates on the basis of a lack of datapoints, the range would be 6.81% to 6.97%.[61]

3.120 The network companies have argued that the arithmetic average is the most correct single methodology. This view would seem match the advice within widely used corporate finance literature. For example, Brealey, Myers & Allen in their commonly referenced 'Principles of Corporate Finance' textbook, note that 'If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return'.[62] However, the authors do note that when future returns are forecasted to distant horizons, the

[61] Small differences to DMS-based evidence provided by the companies is the result of an additional year of DMS data (2024 dataset) within our calculations.
[62] Brealey, Myers & Allen (2020), Principles of Corporate Finance, page 170.

historical arithmetic means are upward-biased, although this effect would be small in more corporate-financial applications.[63]

3.121 We note that an estimate of the whole period geometric return 'uplifted' to equate to an equivalent arithmetic return would sit within the 6.81% to 6.97% range.

3.122 We have decided to follow CMA precedent and UKRN Guidance in estimating the TMR using both ex post and ex ante methodologies. Our ex post approach is currently likely to produce estimates that are higher than the ex post approach. As a result, the two approaches are likely to produce a TMR range. On this basis, we must consider whether it is helpful to have ranges for each approach, or whether this brings unnecessary complexity to our estimation process.

3.123 Taking on board the submitted evidence in relation to the potential ways to estimate the ex post TMR element, we have chosen to set our ex post estimate of TMR (and so likely the top of our TMR range) on the basis of the arithmetic average alone. We do not see material value in utilising an ex post range that will in turn define the top of another range. In picking a single preferred approach to set the top of the range, we consider the arithmetic average to be the best available methodology. We set our ex post estimate based on the 1-year arithmetic return of 6.97%.

Calculating ex ante historical returns

SSMC summary

3.124 When calculating estimates based on historical ex ante analysis, we noted that there are two approaches commonly used to derive TMR:[64]

- the Fama and French dividend growth model approach, which can be used to estimate reasonable expectations for TMR based on the historical combination of dividend yield plus dividend growth; and
- the DMS compositional approach that adjusts historical returns for expansion in the price/dividend ratio and changes in the real exchange rates, these being elements of 'luck' that are unlikely to feature in investors' expectations of ongoing returns.

3.125 We welcomed evidence on the appropriate application of these methodologies. We noted that we will examine the strength of the evidence for any calculation

[63] Brealey, Myers & Allen (2020), Principles of Corporate Finance, page 170, footnote 8.
[64] CMA (2021), PR19 Redetermination – Final Report, paragraph, 9.341

approach or applicable adjustments to base data and may set our estimate range or point estimate using a combination of approaches.

Summary of consultation responses

3.126 The Oxera report stated that the ex ante approach requires the regulator to subjectively chose which elements to include in the decomposition and that there is no guarantee that a variable will continue in the future (or may rely on the behaviour of other variables that may or may not be included in the estimate). Oxera note that the approaches described by Ofgem may be better described as 'adjusted ex post', given that they are still based on historical returns.

3.127 Oxera provide a 6.53% estimate of the ex ante TMR based on its interpretation of the DMS decompositional approach. Oxera's approach is shown in Figure

3.128 Oxera argue that the lack of public data is a barrier to assessment and verification of dividend discount models based on Barclays gilt study data - questioning its appropriateness for regulatory purposes.

Figure 9: Oxera ex ante TMR approach

Table 2.9 Ex ante TMR, based on the DMS decompositional approach

	Formula	Value
Geometric mean dividend yield[1]	[A]	4.56%
Growth rate of real dividends[2]	[B]	0.66%
Unadjusted ex ante TMR (geometric average)	**[C] = [A] + [B]**	**5.22%**
Geometric-to-arithmetic mean conversion[3]	[D]	1.66%
Unadjusted ex ante TMR (arithmetic average)	**[E] = [C] + [D]**	**6.88%**
COLI–CED adjustment[4]	[F]	-0.35%
Adjusted ex ante TMR (arithmetic average), CPIH-real	**[G] = [E] + [F]**	**6.53%**

Note: [1] The geometric mean of the dividend yield is taken over the period 1900–2022. [3] The geometric-to-arithmetic mean conversion is calculated as half the variance of log returns based on the latest DMS data. [4] Pre-1947, DMS inlfation figures are based on the Cost of Living Index (COLI) rather than the preferrable Consumption Expenditure Deflator (CED). From 1947 onwards, DMS employ a composite CPI series.
Source: The table is based on Ofwat (2022), 'Final Methodology for PR24: Appendix 11 - Allowed Return on Capital', December, p. 35. [1,2,3] Dimson, E., Marsh, P. and Staunton, M. (2023), 'Credit Suisse Global Investment Returns Yearbook 2023'. CMA PR19 redetermination (2021), para. 9.358.

Source: Oxera Cost of Capital for RIIO-3

SSMD decision and rationale

3.129 We have estimated the ex ante TMR to be 6.50%. We have decided to base our analysis on a version of the decompositional approach. Our rationale for following this approach is set out below.

3.130 The network companies have argued that the ex ante approach requires subjective adjustments that make it an inappropriate methodology. They also highlight data access problems with certain methodologies.

3.131 We agree that deploying the the ex ante approach to estimating TMR requires careful consideration of both data and methodologies. However, we do not consider this to negate the value of deploying this approach. As noted by the CMA in the redetermination of PR19, many academic studies have concluded that the ex post approach is likely to over-estimate required returns. The CMA state that 'Mehra and Prescott (1985) observed that the high historical returns provided by equities relative to government bonds are inexplicable in the context of standard economics models that describe risk. Similarly, Blanchard, Shiller and Siegel (1993) concluded that the ex post ERP appears far in excess of what is justified by standard asset-pricing models with reasonable levels of risk aversion'.[65] The UKRN Guidance makes similar points, noting that Dimson, Marsh and Staunton (the academics whose returns data our estimates are based on) argue that adjusted for a) luck and b) repricing resulting from changes in the underlying risk premium, the forward looking equity risk premium is liable to be much lower than historical estimates using long run averages.[66]

3.132 We have considered a number of potential ex post methodologies, noting the approach deployed recently by the CMA and those described in Ofwat's PR24 methodology. We are cautious about the value of making judgements in relation to the amount of previous 'luck' that will apply in the future, as this would seem to require subjective judgements. We also note concerns around access to Barclays data for non-Barclays clients.

[65] CMA (2021), PR19 Redetermination – Final Report, paragraph 9.339.
[66] UKRN Guidance, page 21

3.133 We have concluded that the most effective deployment of the ex post methodology is likely to be a version of the DMS 'decompositional' approach deployed by the CMA in the redetermination of PR19. Our calculations are shown in the table below.

Table 5: Ofgem ex ante TMR analysis

Calculation Step	**Description**	**Figure**
A	Geometric mean dividend yield	4.55%
B	Growth rate of real dividends	0.75%
C = A + B	Geometric mean 'ex ante' TMR	5.30%
D	Geometric-to-arithmetic conversion	1.65%
E = C + D	Raw arithmetic 'ex ante' TMR	6.95%
F	COLI-CED adjustment	-0.35%
G	Serial correlation adjustment	-0.10%
H = E + F + G	Final arithmetic ex ante TMR estimate	6.50%

Source: Ofgem analysis using 2024 DMS returns data and Ofgem's inflation dataset

3.134 This approach, which Oxera term 'adjusted ex post' does not make subjective assumptions about future re-ratings or changes in likely growth levels. Instead, it focuses the estimate of ex ante returns on the historical levels of the two key drivers of return - dividend yield and dividend growth.

3.135 This approach uses 2024 DMS data on historical average dividend yield and adds this to the historical average of dividend growth. As this data is available in geometric terms, we make an adjustment to convert this into an equivalent arithmetic average. We note that the CMA, DMS and Ofwat apply a 1.5% uplift. However, for consistency with the approach we deploy in our ex post methodologies, we apply an uplift of 1.65% based on our analysis half of the variance of log real returns. In line with the approach used by the CMA and highlighted in Ofwat's PR24 Final Methodology, we make a -0.35% adjustment to reflect DMS's use of Cost of Living Index (COLI) rather than CED inflation data when calculating real returns.

3.136 We recognise that there are conflicting views as to the presence of serial correlation in the data and note difficulties of proving or disproving this at a statistically significant level of accuracy. As noted by the CMA in the redetermination of PR19, differences in returns over different holding periods may suggest that serial correlation may require a downward adjustment. The CMA

applied a downward adjustment based on the differences between the 1-yr, 10-yr and 20-yr holding period returns. We note that the difference between 1-yr and 10-yr overlapping average returns is 0.16%, and between 1-yr and 20-yr overlapping average returns is 0.04%. We apply an average of these two figures when making -0.1% adjustment to our estimate.

3.137 As we do not consider there to be material benefits from including other, more subjective methodologies, or methodologies using more restricted data, we estimate the TMR using ex ante methodologies to be 6.50%.

Calculating the TMR range

SSMC summary

3.138 The UKRN Guidance notes that all regulators place weight on historical ex post approaches and many of them on historical ex ante methods. Some regulators have also considered forward-looking evidence in their most recent decisions. The UKRN Guidance recommends that the TMR should be primarily based on historical ex post and historical ex ante evidence.

3.139 In line with the UKRN Guidance, we proposed to continue to estimate the TMR via assessment of long run historical returns,[67] and proposed to consider a range of appropriate timeframes, averaging methodologies and potential adjustments in order to use historical data to provide an effective forward-looking estimate of the TMR.

3.140 Reflecting the UKRN Guidance recommendation, as well as recent relevant precedent such as the CMA's Redetermination of PR19,[68] we proposed to give weight to both historical ex post and historical ex ante analysis when estimating the TMR. We noted that the exact balance of historical ex post and historical ex ante inputs into the TMR estimate will reflect the evidence and our regulatory judgement.

3.141 In the SSMC we stated that we do not plan to place significant weight on forward-looking estimates, noting that this approach is likely to be inconsistent with a methodology based on a stable TMR. We noted that a stable TMR assumption may mean that at certain points in the equity performance cycle, our TMR estimate may appear slightly too high or too low relative to some measures of

[67] We anticipate using the most up-to-date DMS returns dataset available when calculating historical returns for DDs and FDs.
[68] CMA (2021), PR19 Redetermination – Final Report, paragraphs, 9.339 - 9.361

expectations for near term equity performance. However, when setting our allowed return on equity we are estimating a long-term cost of equity, not trying to predict short-term market performance, and we see value to investors and consumers in the consistency and predictability provided by the stable TMR approach.

Summary of consultation responses

3.142 The Oxera report argued that the historical evidence points towards an estimate of 7.0% as based on the one-year arithmetic average, which Oxera considered to be the most robust and reliable technique to estimate the TMR. Oxera considered that it would be appropriate to add ± 0.50% around the estimate of 7.00%.

3.143 Fronter stated in its report for NGET that an appropriate range based on its 'glider' analysis to be 7.55% - 7.86% at current interest rates.

SSMD decision and rationale

3.144 We have decided to set the TMR range based on our ex ante and ex post estimates. We have decided to present this range as 6.50% (based on the ex ante analysis) to 7.00% (based on the ex post analysis). Our rationale for following this approach is set out below.

3.145 The network companies have argued that we should set the TMR based on only ex post data. For the reasons discussed in relation to the appropriateness of including ex ante evidence, and in line with both recent CMA precedent and the UKRN Guidance, we will set the TMR range based on our ex post and ex ante estimates. As both approaches have merit, we will place equal weight on both methodologies - setting the bottom of the range in line with our ex ante estimate of 6.50% and the top of the rage in line with our ex post estimate of 6.97%.

3.146 We note that this range is within, but lower than the 7.00% ± 0.50% range suggested by Oxera but below the 7.55% - 7.86% 'glider' range suggested by Frontier. We also note that while all (but one) of the potential estimation techniques we have highlighted sit within both our range and Oxera's range, all of these approaches would sit in the bottom half of Oxera's range.

3.147 We continue to believe that it is inappropriate to use forward estimates when setting the TMR or to otherwise make manual adjustments to reflect prevailing interest rates (see paragraph 3.99). We will use cross checks of our CAPM-based estimate of the cost of equity to make sure that our approach to estimating the TMR metric is not leading to an allowed return on equity that is materially out of line with the market cost of equity. Doing so should help to address both the

network company concern that our stable TMR approach will lead to an insufficient estimate of the cost of equity and the Citizens Advice concern that our equity-only TMR approach will lead to an excessive estimate of the cost of equity.

3.148 Finally, when setting the TMR, we consider it important to remember that this figure represents a long-horizon estimate of expected market returns. On this basis, we do not think that it is feasible that long-term expectations of this figure are likely to be defined to two decimal places 'unrounded'. As a result, for the 'early view' of the cost of equity presented in this document we present the TMR range in 'rounded' terms as 6.5% to 7.0%.[69] However, unlike the other CAPM metrics, we do not anticipate changing this range for minor data updates when setting final determinations in 2025, as long as the 6.5% to 7.0% range remains appropriately representative of the underlying data.[70]

3.149 For the purpose of the 'early view' of the cost of equity, our TMR estimates are summarised in the table below.

Table 6: TMR estimates for the 'early view' of the cost of equity.

Metric	**Low**	**High**
TMR	6.5%	7.0%

Source: Ofgem analysis of DMS and ONS data

Estimating Beta (β)

Basic beta calculations

SSMC summary

3.150 The CAPM that we use to estimate the cost of equity assumes that risks that are specific to an investment (or set of investments) can be diversified away - meaning that investors do not require compensation for exposure to these 'specific' or 'non-systematic' risks. The risk exposure that remains is unavoidable or 'systematic' and cannot be diversified away and so investors require compensation for exposure to this risk. The most commonly referenced systematic risk is exposure to the general performance of the economy.

[69] In practice, the change here is to use 7.0% rather than 6.97% calculated ex post methodology estimate as the top of the range.
[70] Our estimates are based on averages of more than 120 years of returns data, so the addition of one year of returns is unlikely to change the estimate materially. Changes to estimation approach and/or changes to inflation datasets are more likely to have material impacts on the estimate of TMR under our approach.

3.151 Beta is the measure of an asset's exposure to undiversifiable systematic risk, relative to the average exposure of assets in the market. The average exposure to systematic risk is defined as a beta of 1. Regulators typically use the covariance of price movement of listed companies' shares and the average price movement of relevant equities indices to estimate beta (either directly for listed companies or indirectly where listed companies are used as proxies for unlisted companies).

3.152 The measurement of raw equity betas requires statistical analysis. This can take the form of relatively simple 'Ordinary Least Squares' (OLS) regressions or can involve more advanced statistical analysis techniques such as Generalised Autoregressive Conditional Heteroskedasticity (GARCH) methodologies.

3.153 Recommendation 5 of the UKRN Guidance suggests that regulators should estimate equity beta for the notionally capitalised company using comparable listed companies and standard regression techniques (ie. OLS). The UKRN Guidance also notes that where the listed comparator has different gearing to the notional company, regulators should continue to de-lever and re-lever the raw equity beta.

3.154 In the SSMC we agreed with the UKRN Guidance recommendation, which is in line with the RIIO-2 approach. We stated that we intend to base our beta analysis on OLS regressions of relevant listed comparators, de-gearing data to make asset beta comparisons before re-gearing to the notional capital structure to estimate an appropriate equity beta input for the CAPM cost of equity.

Summary of consultation responses

3.155 The Oxera report stated that their proposed approaches (discussed in more detail in the coming sections) comfortably align with all elements of the UKRN Guidance on the calculation of betas.

3.156 Citizens Advice note a previous submission to the UKRN as part of the Guidance consultation process that suggested that World rather than local market indices should be used to calculate beta. As with the use of equity rather than total capital market data when calculating TMR, Citizens Advice argue that any generosity that comes from a practicality-led decision to use local markets should be analysed and factored into other decisions, such as choosing spot estimates from a range.

SSMD decision and rationale

3.157 We have decided to calculate the beta using the methodology laid out in the SSMC. We will base our beta analysis on OLS regressions of relevant listed comparators. We will de-gear these to assess unlevered equity betas, combine these estimates with our debt beta assumption to make asset beta comparisons, and then re-gear these estimates to the relevant notional level of gearing to estimate an appropriate equity beta input for the CAPM cost of equity. Our rationale for following this approach is set out below.

3.158 The approach to calculating betas suggested by the network companies aligns with the approach proposed in the SSMC.

3.159 Citizens Advice have argued that using World betas should be used, and that account should be taken for the need to use equity betas and equity TMRs. We disagree that the use of World betas would lead to a more accurate pricing of the cost of capital. In line with the view expressed in the UKRN Guidance, we believe that the most diversified local index in the relevant currency is likely to provide the best insight into the systematic risk exposure faced by energy networks.

3.160 We measure the covariance of share prices and broader markets to estimate the relative exposure that companies have to systematic risks. Systematic risks are common to all companies in the economy and cannot be diversified away. We consider that the most relevant measure for an energy network is relative exposure to the domestic (or, where relevant) regional economy. World indices are typically dominated by companies in the United States.[71] While we understand the potential benefit from assessing beta as a global investor (against a global benchmark), we consider that, on balance, more relevant information about the relative risk exposure of network companies is made with reference to domestic markets trading in the same currency (or regional markets where domestic indexes are insufficiently diversified).

3.161 Citizens Advice raise legitimate concerns as to whether the practical implementation of the CAPM model utilised by regulators and investors leads to allowed returns that are higher than required. As noted with reference to our TMR approach, we consider that our proposals reflect best practice. However, the output from our methodologies will be subject to cross-checks that provide evidence that our application of the CAPM does not lead to an estimate of the cost

[71] For example, US companies make up c70% of the market capitalisation of the MSCI World Index.

of capital that diverges materially from estimates derived or implied using a variety of alternative techniques.

Timeframe and measurement frequency

SSMC summary

3.162 We proposed to consider a range of timeframes and frequencies when analysing equity beta data. We intended to weight data based on regulatory judgement and will decide on the exact calibration of our calculations on the basis of the evidence considered.

3.163 As discussed in the series of SSMC working groups focusing on finance issues, we were aware that longer-term data may give more comprehensive and reliable insight into a firm's beta over a business cycle, but that shorter-term data may be more representative of the forward-looking exposure to systematic risks that we are looking to include in our estimate. We noted that it may be appropriate to consider evidence which shows whether shorter or longer estimation horizons would be appropriate when estimating forward looking beta using historical data.[72]

Summary of consultation responses

3.164 The Oxera report stated that betas covering long-term historical data, such as ten-year betas, have a disadvantage in terms of including old datapoints that may not be as representative of current business activities and thus the type of risk exposure of the companies. However, Oxera also suggested that longer-term windows also offer some advantages in the context of beta estimation for RIIO-3 specifically.

3.165 Oxera noted CMA comments from the RIIO-GD&T2 appeal suggesting that considering all timeframes equally would overweight shorter-term timeframes, that taking a longer estimation window ensures that large fluctuations in the beta can be avoided and that a longer estimation window for the beta of National Grid

[72] Sector Specific Methodology Consultation (SSMC): Regulatory Finance Working Group 5: Beta - Summary Minutes

includes Cadent's gas activities as well as National Grid's ongoing business activities.

3.166 Oxera suggest that it would be appropriate to give more weight to 10-year betas relative to shorter ones. Oxera also note that for similar reasons it may be appropriate to give weight to rolling averages, even though this approach has drawbacks.

3.167 Frontier prepared a report for the ENA on the 'low beta puzzle'.[73] In this, Frontier argue that the risks faced by network companies are rising, with:

- electricity networks being required to deliver large investments in network capacity and capability to support the path to net zero; and
- gas networks being required to maintain a safe and reliable network while facing the risk of decreased consumption and stranded assets/decommissioning risks, and the potential challenges of transforming their assets to serve future alternative gas/heating vectors over an uncertain proportion of their network.

3.168 Frontier argue that against this backdrop we should start to see these risks, where they are undiversifiable, start to be 'priced in' to recent beta estimates of utility stocks. Frontier stated that empirical estimates show that utility betas have not increased since RIIO-2, a situation they refer to as the 'low beta puzzle'.

3.169 Frontier argue that this 'puzzle' is a function of increased volatility in the broader market and provide a chart suggesting that in periods where market volatility has been high, betas of UK utility stocks have been low (and vice versa). Frontier argue that Ofgem should focus on 10-year betas at this time. However, Frontier suggest that if market volatility levels continue to tail off, then 2-year estimates may prove to be 'potentially less problematic'. Frontier also argue that 10-year betas are least likely to take appropriate account of emerging forward-looking risks that could materialise during RIIO-3, raising the question as to whether 10-year betas will require uplifting to better reflect 'crystalising sector forward looking risk'.

3.170 One TO argued that it did not agree with Ofgem's proposal to consider beta values that are calculated using a range of different frequencies of data sampling. The network company argued that this would be inconsistent with the UKRN guidance, which notes that beta should be calculated using daily data samples for

[73] Frontier Economics (2024), The Low Beta Puzzle - A report prepared for the ENA.

the comparator companies, without Ofgem having provided a justification for departing from the UKRN approach.

3.171 Citizens Advice stated that it continued to believe that weighting should not be given to shorter-term betas. Citizens Advice state that this is because index-investing has an upward bias on short-term betas. Citizens Advice state that it explored this issue in its response to the UKRN consultation regarding the calculation of the cost of capital, and that the UKRN's decision in this area had been particularly unsatisfactory.

SSMD decision and rationale

3.172 For the purposes of the 'early view' of the cost of capital, we will build a range for beta considering data across 2, 5 and 10-year timeframes. At DDs and FDs we anticipate relying most heavily on longer-term (10-year) timeframes when picking a point estimate for asset beta. We will also take the same approach as used in RIIO-2 and focus on daily observations. Our rationale for following this approach is set out below.

3.173 The network company arguments suggest that the shorter-term betas of our comparators are being depressed by broader market volatility (the 'beta puzzle'). It is not clear to us that this is an indisputable interpretation of lower betas for relevant comparators in recent periods. An alternative interpretation is that betas in earlier periods were 'too high' as a result of an unusual lack of market volatility. We also note that network companies previously advocated for shorter-term betas in RIIO-2.[74] This issue is made more complex by arguments from Frontier that shorter-term betas may be 'less problematic' if they were to rise, as this suggests that the companies' submissions advocate for using whatever timeframe leads to the highest estimate of beta.

3.174 We do not consider the approach suggested by the network companies to be in the interests of consumers. Instead, we will look to apply an approach that we believe allows us to achieve the most consistent and accurate assessment of beta, understanding that we do not know exactly what the future market environment will be.

3.175 A range considering data across 2, 5 and 10-year timeframes will allow a wider range of estimates at this early stage. We will further assess the systematic risks that companies face as we progress towards FDs and retain the flexibility to pick

[74] Ofgem 2019, RIIO-2 Sector Specific Methodology Decision - Finance, paragraph 3.117

a point estimate that we consider best matches the systematic risk exposure we expect companies to face on a forward-looking basis.

3.176 For the purpose of DDs and FDs, we anticipate taking an approach similar to that used in RIIO-2 and in line with the Citizens Advice position - relying most heavily on longer-term (10-year) timeframes when picking a point estimate for asset beta.

3.177 Stakeholders did not make specific arguments around the correct frequency of measurement, other than to note that utilising a range of frequencies may be in conflict with UKRN Guidance. For RIIO-3 we will take the same approach as used in RIIO-2 and focus on daily observations, in line with UKRN Guidance that 'the use of daily data should be reasonable for the types of stocks generally considered'.

3.178 We do not intend to use rolling averages of beta estimates on the basis that this approach can overweight certain parts of the data, providing an inappropriately skewed assessment of the beta over the period.

Choice of comparators

SSMC summary

3.179 In the SSMC we noted that we expected to utilise similar comparator firms to those considered during RIIO-2, including listed UK energy and water networks. We continued to believe that these firms are likely to be more representative of the core risks faced by GB energy networks, in the round, than other comparator firms. However, we recognised that there may be evidence to indicate that energy networks face higher or lower levels of systematic risk on a forward-looking basis in the round after accounting for relevant price control mechanisms, which may not be accurately reflected in beta samples which are backwards looking. Therefore, we stated that we may consider attributing different weights to the RIIO-2 comparator firms and/or including a broader set of comparator firms if there is sufficient evidence that these, either individually or in aggregate, allow us to calculate a more accurate estimate of the beta that is appropriate for energy networks.

3.180 We also noted that if there was evidence indicating that the GD, GT and ET sectors face different levels of systematic risk on a sectoral basis, it may be appropriate to use different beta estimates for the different network sectors and the allowed return on equity may differ as a result. For example, this could be due to licensees adopting new licence obligations which would materially change

the systematic risk of the licensee in the round after relevant risk sharing, transfer and/or mitigation mechanisms (including those within the wider price control arrangements) are reflected.

Summary of consultation responses

3.181 The Oxera report noted that the only 'pure play' energy company in Ofgem's previous comparator set is National Grid, which makes it a good comparator for the notional energy company that Ofgem is trying to regulate. However, Oxera note that even National Grid does not provide a disaggregated pure-play beta for a UK regulated network given that a large proportion of its business over the period of analysis is conducted in the United States.

3.182 Oxera argue that given the lack of listed pure-play energy network comparators in the UK, it would be appropriate to include other European comparators to generate an adequately sized representative stable. Oxera recommend including Enagas and Red Electrica in Spain and Italgas, Snam and Terna in Italy.[75]

3.183 One TO provided an alternative list, with did not include Italgas but instead included Hera in Italy.

3.184 In a separate report on risks and investability of the GB gas distribution sector, prepared for the GDNs, Oxera noted that they have observed that the betas of gas networks have been, on average, 0.02 - 0.04 higher than those of electricity networks since at least 2019, based on a sample of European networks.[76] GDNs argued that Ofgem should incorporate a beta uplift relative to the baseline energy network beta to reflect asymmetry of risks (alongside considering a WACC uplift).

3.185 TOs suggested that beta estimates calculated from historical listed energy and water company data were unlikely to price forward looking risk. Additional comparators would be required to derive estimates that reflect changes in systematic risk and asymmetric risk on a forward-looking basis.

3.186 Some network companies raised concerns in relation to the usefulness of National Grid plc's beta due to potential de-coupling with the UK equity market given extensive corporate M&A activity, while others suggested that significant weight should to be put on 10-year National Grid betas (primarily to capture gas within the sample).

[75] Oxera also note that they calculate betas using the FTSE All-Share benchmark for UK companies and the Euro Stoxx Total Market Index benchmark for European comparators.
[76] Oxera (2024), Risks and investability of the GB gas distribution sector - Prepared for GB gas distribution networks.

3.187 One TO suggested that when calculating a 'BAU' beta estimate, most weight should continue to be placed on the beta of National Grid Group, as the only listed UK company which has a business that is close to a "pure-play" energy network business. However, the TO also noted that to fully account for future risks not reliably captured in historical data, other comparators could be included. The TO referenced potential new comparators such as construction companies, growth companies or the asset betas used by Ofgem in setting OFTO and interconnector IDC rates.

3.188 The TO commissioned two reports into this issue, one by PWC on identifying and quantifying risks for RIIO-T3[77] and one by Frontier on triangulating beta evidence from electricity transmission is RIIO-3.[78] PWC's report suggests that three construction-and engineering focused companies (Balfour Beatty, Morgan Sindall Group and Renew Holdings) could be included as comparators, and potentially also Openreach from the communications sector. The report noted some precedence to this approach as Ofgem had given weight to construction focused companies when calculating the asset beta for interconnectors. The report also argued that the beta in ET sector should be higher than in gas networks.

3.189 Frontier's beta report built on PWC's analysis and conclusion that a 10-15% weight to construction and engineering comparators would be appropriate. Frontier noted that a 12.5% (midpoint) weighting to construction and engineering comparators with an asset beta of 0.77 would equate to an appropriate asset beta of 0.402. Frontier stated that an appropriate asset beta range could be 0.35 (in line with RIIO-2) to 0.40 as a result. Frontier stated that the inclusion of construction comparators more accurately reflects the risks and challenges for ET companies and represents a financeable and investable proposition.

SSMD decision and rationale

3.190 We are minded to include relevant European utility comparators in addition to UK Water companies and National Grid plc when measuring beta. We do not agree with the inclusion of construction company data or manual adjustments to beta estimates. Our rationale for following this approach is set out below.

[77] PWC (2024), Identifying and quantifying risks for RIIO-3
[78] Frontier Economics (2024), Triangulating beta evidence for electricity transmission in RIIO-3.

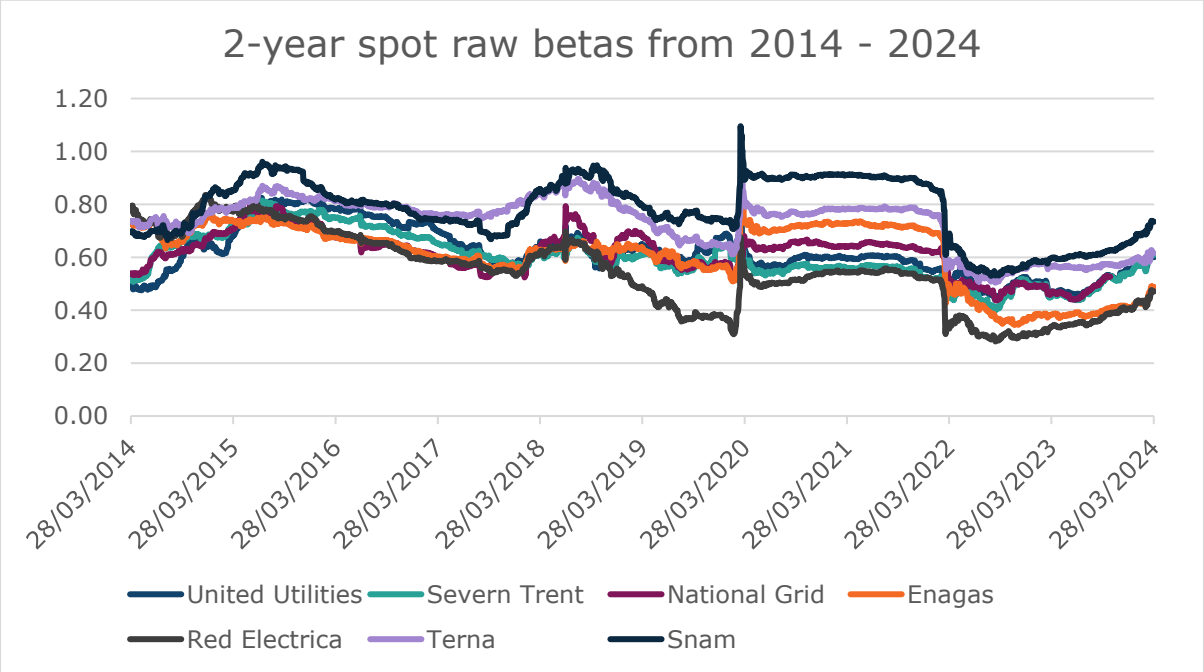
3.191 Estimating an appropriate beta is challenging because of a lack of 'pure play' listed GB networks to use as comparators.[79] We have traditionally tackled this issue by using data based on National Grid plc, a strong direct proxy in the GB energy network sector that also has material exposure to business lines in the United States; and Severn Trent plc (SVT) and United Utilities plc (UU) - 'pure play' network businesses in the Water sector that are subject to a similar regulatory regime as GB energy networks. None of our comparators is an exact proxy to a GB-only regulated energy network, and we particularly lack gas-based evidence in shorter-term measures of beta (some evidence should remain in longer-term estimates based on National Grid plc given previous gas exposure within the business).

3.192 Regulators typically use historical beta data as the base of the estimate for beta on a forward-looking basis. This means that estimating beta is easier in a 'steady state' environment than a dynamic environment. We are aware that the network companies consider risks to be rising relative to the RIIO-2 and RIIO-1 periods that would be captured by our historical beta data. Specifically, the TOs see increased risks due to ASTI and other large scale CSNP projects while the GDNs and National Gas consider there to be risks associated with the uncertainty relating to the future decarbonisation of the gas networks.

3.193 However, the evidence presented by the network companies and our own analysis suggests that the betas of listed GB energy network companies (such as National Grid plc and SSE plc) with exposure to programmes such as ASTI and significant investment plans have not risen versus the RIIO-2 assessment period (ie, the years leading up to the start of RIIO-2 in 2021). However, we do note evidence that shorter-term betas have begun to rise again since lows around late 2022. This is shown in more detail in Figure 10 below. As a result, there is little current evidence that investors perceive higher levels of exposure to systematic risk in the GB energy network sector relative to RIIO-2.[80]

[79] By 'pure play' we mean listed companies that only do the specific activity we are looking to measure the relative risk exposure of. In this case we are looking to measure the beta of a GB energy network.
[80] This issue is discussed in more detail in the previous sub-section in relation to Frontier's assessment of a 'beta puzzle'.

Figure 10: 2-year beta history for key comparators



Source: Ofgem analysis of Bloomberg data. Italgas excluded due to limited history.

3.194 To ensure that we are capturing the risk of the sector on a forward-looking basis as accurately as possible, we have considered ways to make our beta assessment more robust. As we cannot 'create' pure-play listed comparators, and manual adjustments to historical data (as suggested by the GDNs) are likely to be extremely subjective, we view the best improvements are likely to focus on including other relevant comparators in our dataset.

3.195 The two suggested groups of additional comparators are European utilities (Oxera recommend including Enagas and Red Electrica in Spain and Italgas, Snam and Terna in Italy), to bring in other companies facing similar risks and challenges, and construction companies, reflecting the increasing amount of construction-related activity that TOs are likely to need to undertake.

3.196 Both of these groups have potential advantages and drawbacks. European utility companies operate in a similar sector and are likely to face similar risks to GB energy networks, but are subject to different regulatory regimes than the GB energy networks. Different regulatory regimes are likely to lead to different levels of systematic risk exposure. Including construction companies may bring in evidence relating to construction activities that the TOs are becoming more exposed to. However, construction companies have radically different business models to regulated energy networks, noticeably facing significant levels of price and volume risks that are not a feature for energy networks. As a result, the

systematic risk exposure associated with similar activities may be completely different and dominated by the overall business model rather than the activities being undertaken.

3.197 On balance, we provisionally see a net benefit in including European utility companies in our comparator set. While these companies operate in a different country and under a different regulatory regime, they are likely face similar challenges relating to meeting net zero targets. We see this compromise as thematically similar to the compromise involved in using GB Water comparators. In Water we have a different sector but a very similar regulatory regime. With European energy network comparators we will have the same sector but a potentially different regulatory regime.

3.198 We see particular value in bringing in direct estimation of gas energy network risk given the questions we face in terms of the perception of asset stranding risk in this sector. We consider the inclusion of direct gas network comparators as a way to address changes of risk directly, which should reduce the need to make any 'manual' adjustments to our beta estimate.

3.199 We plan to include Enagas and Red Electrica in Spain and Italgas, Snam and Terna in Italy. This is not a final decision, and will consider this further between SSMD and DDs to ensure that the regulatory regimes and business mixes of these European comparators are suitably similar.

3.200 In relation to the argued-for gas 'premium', we also note that there is a potentially inconsistent pattern in the data presented by Oxera (shown in Figure 11 below). If we assume that GD networks are the most vulnerable to net zero-related policy changes, we can compare Italgas (GD) and Terna (ET) in Italy. While Italgas has a higher 2-year beta than Terna, it has a materially lower 5-yr beta (although we note GT company Snam is higher than Terna over both timeframes). At this point, we do not think that there is sufficient data to isolate evidence that there is a structural premium in gas, or justify a set asset beta premium for gas over ET in RIIO-3, but will continue to monitor this data.

Figure 11: Oxera evidence on European utility betas

Table 3.1 Spot daily asset betas for European gas and electricity networks

Country	Company	Sector	Two-year asset beta	Five-year asset beta	Ten-year asset beta
Italy	Italgas	GD	0.33	0.35	n.a.[1]
	Snam	GT	0.33	0.41	0.44
	Terna	ET	0.31	0.39	0.41
Spain	Enagas	GT	0.21	0.32	0.35
	Red Eléctrica	ET	0.21	0.26	0.32
	Average gas	GT&GD	0.29	0.36	0.39
	Average electricity	ET	0.26	0.32	0.37
	Difference in averages		0.03	0.04	0.02

Note: GD—gas distribution, GT—gas transmission, ET—electricity transmission. The cut-off date of the analysis is 20 December 2023. Debt beta is assumed at 0.075. [1] There is not enough data to estimate a ten-year beta for Italgas because its shares started trading only in 2016, i.e. less than ten years ago.
Source: Oxera analysis, based on data from Bloomberg.

Source: Oxera (2024) Risks and investability in the GB gas distribution sector - Prepared for GB gas distribution networks.

3.201 In relation to the inclusion of construction company data in the comparator set, we do not consider this to be appropriate - even at a low weighting. While we understand the reasoning behind this proposal, we consider construction businesses models and systematic risk exposure to be so radically different to energy networks as to make their inclusion completely inappropriate. Even where TOs will be taking on more construction activities, they will still be operating within a regulatory regime and will face nothing like the same levels of risks faced by construction companies in competitive markets. We also note that Frontier's assessment of the impact of including such comparators would be to extend the top of the asset beta range to 0.4, and that a similar conclusion could be reached by including data from European utilities. We consider the latter approach to be a more appropriate application of comparator data.

3.202 We will continue to use National Grid plc in the Energy sector as this is the best beta comparator company for GB energy networks. We will also continue to use SVT and UU in the Water sector. We view the Water networks in England and Wales as having very similar characteristics to the GB Energy networks, including a very similar regulatory regime and thematically similar challenges relating to ensuring resilience, managing investment and adapting to climate change. Given the significant weight of historical non-network business lines in both SSE plc

(Energy) and Pennon plc (Water), we do not plan to use these companies in our comparator set.

3.203 At this stage of the analysis, we note that the drivers of systematic risks faced by the GB energy networks may have the potential to diverge. However, given the over-arching influence of the RIIO regulatory regime, we do not currently consider there to be sufficient evidence to justify using different beta estimates for gas and ET. This view is supported by the proposed inclusion of data from European utility gas and ET companies when calculating our combined beta estimate. We will keep this position under consideration and will review at DDs.

Debt Beta

SSMC summary

3.204 Debt beta is a measure of the exposure of debt holders in a firm to systematic risk. We combine our unlevered beta with our debt beta assumption to assess the asset beta (that we will regear to reflect the appropriate notional capital structure).

3.205 Debt beta is generally more difficult to measure than equity beta. Debt securities do not tend to trade in the same liquid fashion as listed equities and so the quality of bond return data is likely to make accurate debt beta analysis difficult.

3.206 In the SSMC we noted that regulators, economic advisors and financial market participants have used a range of direct and indirect ways to estimate debt beta. Recent precedent indicates that regulators have generally incorporated a relatively small debt beta figure in their cost of equity analysis. Since 2019, debt beta assumptions in regulatory price controls have ranged from 0.05 to 0.125.[81]

Summary of consultation responses

3.207 We received no material responses on debt beta, although we note that some stakeholders had discussed asset beta data based on a zero debt beta.

SSMD decision and rationale

3.208 Our proposed debt beta estimate of 0.075 is the same estimate used in RIIO-2 and is in line with recent precedent. The RIIO-2 debt beta was considered by the CMA in the appeal of that price control. The CMA conclude that GEMA's estimate represented an appropriate reflection of the balance of evidence, and as a result

[81] UKRN 2023 Cost of Capital Report, Tables 2 and 3

determined that GEMA's debt beta estimate of 0.075 was 'not wrong'.[82] We have not identified any evidence that would support a different decision for RIIO-3.

3.209 We will use 0.075 as the debt beta estimate for the purpose of our 'early view' of the cost of equity. We will combine our debt beta assumption with our unlevered beta calculations to assess the asset betas of our comparator companies, using the formula:[83]

$$\beta_a = (g_U.\beta_d) + \beta_U$$

Equity beta

SSMC summary

3.210 Equity beta is calculated from our assessment of asset betas and gearing levels (of the notional capital structure) using the following formula:[84]

$$\beta_e = (\beta_a - (\ g.\beta_d))/(1 - g)$$

3.211 As shown by this formula, and supported by financial theory, adding debt to the capital structure of an asset increases equity holders' exposure to systematic risks. Combining asset beta and the impact of gearing gives us the equity beta, a measure of the exposure of shareholders in a firm to systematic risk. Equity beta is the input required within the CAPM.

3.212 In the SSMC we noted that if there was evidence indicating that the GD, GT and ET sectors face different levels of systematic risk on a sectoral basis, it may be appropriate to use different beta estimates for the different network sectors and the allowed return on equity may differ as a result. For example, this could be due to licensees adopting new licence obligations which would materially change the systematic risk of the licensee in the round after relevant risk sharing, transfer and/or mitigation mechanisms (including those within the wider price control arrangements) are reflected.

Summary of consultation responses

3.213 The Oxera report suggested a 'baseline' beta range for energy networks of 0.70 - 0.82 (broadly in line with RIIO-2). Oxera note that there was no reason to

[82] CMA (2021), Network Companies vs GEMA, Final Determination, Volume 2A: Joined Grounds: Cost of equity, paragraph 5.566.
[83] Where βa is asset beta, βd is debt beta (gU) is average observed gearing in the actual capital structure and βd is unlevered beta
[84] Where βa is asset beta, βe is equity beta, βd is debt beta (g) is 'gearing' in the capital structure and (1-g) is the proportion of equity in the capital structure.

conclude that risks would be lower in RIIO-3 than RIIO-2, and stated that this range did not account for sector-specific forward looking risks.

3.214 The work of Frontier and PWC in relation to risks in the ET sector suggested an indicative asset beta range of 0.35 - 0.40 (see paragraph 3.189), which (assuming RIIO-2 levels of debt beta, observed gearing and notional gearing) would suggest an equity beta range of 0.76 - 0.89.

3.215 As noted above, Oxera's report for GDNs argued that European evidence pointed to a 0.02 to 0.04 asset premium for gas companies over electricity networks since 2019. On this basis, a 0.37 - 0.44 range would equate to an equity beta of 0.81 - 0.99. However, TOs suggested that the risks associated with large scale growth meant that the beta of electricity would likely be higher than that of gas.

SSMD decision and rationale

3.216 For the early view of the cost of equity, we have decided to set a wide asset beta range of 0.30 - 0.40. An asset beta range of 0.30 - 0.40 range translates to a re-geared (at 60%) equity beta range of 0.64 - 0.89, assuming a debt beta of 0.075. Our rationale for following this approach is set out below.

3.217 Stakeholders provided no objection to our approach to estimating equity betas, with the ranges provided by network companies the mechanical outcomes of arguments relating to the calculation steps discussed in the sections above.

3.218 As noted at paragraph 3.175, we have decided to consider a range of timeframes at this early stage, but note that our final decision is likely to place most weight on the 10-year data. At paragraph 3.177 we note that we will continue to base our beta estimates on daily frequencies. At paragraph 3.197, we note our decision to include relevant European utilities in our comparator set. Bringing these decisions together, we observe the following raw beta data at our comparators.

Table 7: Raw beta observations for chosen comparators

Company	Sector	Country	2yr Average Raw Beta	5yr Average Raw Beta	10yr Average Raw Beta
National Grid	ET	GB	0.56	0.59	0.61
United Utilities	Water	GB	0.60	0.57	0.62
Severn Trent	Water	GB	0.61	0.54	0.59
Enagas	GT	Spain	0.49	0.6	0.62
Red Elec	ET	Spain	0.47	0.47	0.54
Terna	ET	Italy	0.61	0.69	0.74
Snam	GT	Italy	0.73	0.79	0.8
Italgas	GD	Italy	0.83	0.76	

Source: Ofgem analysis of Bloomberg data

3.219 We then use average enterprise value gearing at each company to calculate an unlevered beta. Average gearing levels and calculated unlevered betas are shown in Table 8 and Table 9 below.

Table 8: Average (enterprise value) gearing levels observed for chosen comparators

Company	Sector	Country	2yr Average Gearing	5yr Average Gearing	10yr Average Gearing
National Grid	ET	GB	52.5%	49.9%	45.9%
UU	Water	GB	53.1%	54.4%	53.8%
SVT	Water	GB	50.0%	51.1%	50.5%
Enagas	GT	Spain	45.2%	44.7%	43.5%
Red Elec	ET	Spain	39.2%	40.3%	38.9%
Terna	ET	Italy	37.1%	39.7%	43.2%
Snam	GT	Italy	45.0%	44.9%	45.6%
Italgas	GD	Italy	56.1%	52.1%	

Source: Ofgem analysis of Bloomberg data

Table 9: Unlevered beta calculations for chosen comparators

Company	**Sector**	**Country**	**2yr Unlevered Beta**	**5yr Unlevered Beta**	**10yr Unlevered Beta**
National Grid	ET	GB	0.27	0.30	0.33
UU	Water	GB	0.28	0.26	0.29
SVT	Water	GB	0.31	0.26	0.29
Enagas	GT	Spain	0.27	0.33	0.35
Red Elec	ET	Spain	0.29	0.28	0.33
Terna	ET	Italy	0.38	0.42	0.42
Snam	GT	Italy	0.40	0.44	0.44
Italgas	GD	Italy	0.36	0.36	-

Source: Ofgem analysis of Bloomberg data

3.220 We combine our unlevered beta estimate with our debt beta estimate of 0.075 to calculate asset betas, as described in paragraph 3.209. The result of this is shown in Table 10.

Table 10: Asset betas calculations for chosen comparators

Company	**Sector**	**Country**	**2yr Asset Beta (0.075 debt beta)**	**5yr Asset Beta (0.075 debt beta)**	**10yr Asset Beta (0.075 debt beta)**
National Grid	ET	GB	0.31	0.33	0.36
UU	Water	GB	0.32	0.30	0.33
SVT	Water	GB	0.34	0.30	0.33
Enagas	GT	Spain	0.30	0.37	0.38
Red Elec	ET	Spain	0.32	0.31	0.36
Terna	ET	Italy	0.41	0.45	0.45
Snam	GT	Italy	0.44	0.47	0.47
Italgas	GD	Italy	0.41	0.40	-

Source: Ofgem analysis of Bloomberg data

3.221 Finally, we re-gear our asset betas to our notional level of gearing[85] of 60% to calculate equity betas, using the formula described in paragraph 3.210.[86]

Table 11: Equity beta calculations for chosen comparators (at 60% gearing).

Company	**Sector**	**Country**	**2yr Equity Beta (60% gearing)**	**5yr Equity Beta (60% gearing)**	**10yr Equity Beta (60% gearing)**
National Grid	ET	GB	0.65	0.72	0.80
UU	Water	GB	0.69	0.64	0.70
SVT	Water	GB	0.74	0.64	0.71
Enagas	GT	Spain	0.64	0.80	0.84
Red Elec	ET	Spain	0.68	0.66	0.79
Terna	ET	Italy	0.92	1.00	1.02
Snam	GT	Italy	0.98	1.06	1.06
Italgas	GD	Italy	0.90	0.90	-

Source: Ofgem analysis of Bloomberg data

3.222 Setting a beta range for RIIO-3 will require judgement, reflecting the imperfect comparator set and the potential for a range of future market conditions. Based on regulatory judgement, for the early view of the cost of equity we use a wide asset beta range of 0.30 - 0.40. This range is wider than the 0.32 - 0.37 range used in the RIIO-2 final determination, but has the same midpoint.

3.223 An asset beta range of 0.30 - 0.40 range translates to a re-geared (at 60%) equity beta range of 0.64 - 0.89, assuming a debt beta of 0.075.

3.224 For DDs and FDs, and subject to further analysis of business plans and the overall risk of the regulatory package, we expect to place most or all weight on evidence from longer-term, 10-year betas. Based on current data, if we were to take a RIIO-2-style approach of basing that estimate on National Grid plc and Water company betas, with most weight placed on National Grid plc, this would currently suggest a central asset beta estimate of approximately 0.35 - itself in line with the figure used in RIIO-2. If, for example, we decide that it is appropriate to combine National Grid data with both Water and European utilities data, this would suggest a figure in the upper half of the 0.30 - 0.40 range.

[85] To RAV.
[86] For ease of presentation, we focus here on betas at 60% notional gearing only.

3.225 This is a specific area of the cost of equity calculation where the midpoint of our current wider range may not necessarily provide the most accurate forward-looking estimate. For DDs and FDs we retain the flexibility to weight comparator data in the way that we think is appropriate, and may not pick the midpoint of the range.

3.226 For the purpose of the 'early view' of the cost of equity, our beta estimates are summarised in the table below.

Table 12: Beta estimates for the 'early view' of the cost of equity.

Metric	**Low**	**High**
Asset Beta	0.30	0.40
Debt Beta	0.075	0.075
Equity Beta	0.64	0.89

Source: Ofgem analysis of Bloomberg data

CAPM cost of equity for RIIO-3 early view

3.227 On the basis of the metric-level decisions above, our early view of the cost of equity at 60% gearing is 4.57% - 6.35%. The key metric decisions are summarised in the table below:

Table 13: 'Early View' RIIO-3 Cost of Equity at 60% gearing

Metric	**Low**	**High**	**Calculation**
RFR	1.18%	1.18%	A
TMR	6.5%	7.0%	B
Debt Beta	0.075	0.075	C
Asset Beta	0.30	0.40	D
Notional Gearing	60%	60%	E
Equity Beta	0.64	0.89	F = (D - (C * E))/(1-E)
Step-1 Cost of Equity (early view)	4.57%	6.35%	G = A + F * (B - A)

Source: Ofgem analysis

Step 2: Checking that our Step-1 estimate is neither excessive nor insufficient

The role of investability in RIIO-3

SSMC summary

3.228 In the Financeability section of the SSMC, we noted that there are, in general, no strictly unavoidable cash costs associated with equity financing, and that regulators have tended to use the assessment of the cost of equity and the setting and cross-checking of the allowed return on equity as the primary tools in assessing equity financeability.

3.229 We also noted that to support companies to raise equity capital in RIIO-2, we gave an allowance of 5% to cover the direct and indirect costs of issuing new equity.

3.230 We stated that a related concept is equity 'investability'. While there may be no explicit in-year cash costs that would threaten equity financeability, investability considers whether the allowed return on equity is sufficient to retain and attract the equity capital that the sector requires. We noted that this issue is likely to be increasingly important in the coming years as the need to invest in infrastructure rises significantly (for energy networks across the UK and globally) and companies are required to seek 'fresh' equity from their investors over and above what they would be able to fund via retained earnings.

3.231 We stated that we continue to consider the overall financeability framework to be appropriate for the coming price controls. However, we were open to considering whether a broader assessment of investability in addition to our traditional assessment of financeability may be necessary and has benefits for consumers. We invited views and evidence on how this could be assessed.

3.232 In the SSMC, we asked the following question in relation to investability:

FQ14. What evidence, if any, should Ofgem consider in relation to expanding its assessment of financeability to account for 'investability'?

Summary of consultation responses

3.233 Network companies were generally very supportive of Ofgem raising the issue of investability in the RIIO-3 price controls and noted a series of challenges in the coming price control period, including increasing competition for capital.

3.234 A Frontier report prepared for the ENA noted that investability was a concept that applied to all energy networks.[87] Frontier stated that debt financeability assessments could complement but not replace investability assessments, and that while cross-checks cannot provide a highly reliable estimate of the actual cost of equity of GB regulated energy networks, they can inform on the overall trends in equity returns. Frontier stated that investability required that the cost of equity lies sufficiently far above the long-term return on senior investment-grade debt given the relative risk and security of equity versus senior debt investments. Frontier suggested that cross-checks based on hybrid bonds, Oxera's ARP-DRP analysis, inferred costs of equity and/or long-term profitability should be deployed.

3.235 TOs supplied a range of estimates of costs associated with raising equity capital, and noted a number of related metrics that would help to ensure that network equity remained suitably attractive to current and new investors.

3.236 GDNs and National Gas stated that it was vital that investability applied equally to gas networks and should not focus solely on networks needing to raise fresh equity. National Gas stated that as a result of issues such mandated levels of cyber and physical security standards, that the RIIO-3 plan requires more investment than in RIIO-2

3.237 Citizens Advice stated that it was unsure what was meant by investability, and that if companies were able to finance their activities (i.e. are financeable) then, by definition, they should be able to deliver what consumers require. Citizens Advice argued that 'investability' risks being a construct designed to justify additional returns for companies, and that this would be a risk to the delivery of the infrastructure that is required to deliver net zero.

3.238 Citizens Advice noted that without public confidence, long-term certainty over the regulatory regime is damaged, impacting the investment climate. Citizens Advice argue that grid investment is necessary for consumers to benefit from cheaper renewables, lowering overall energy bills, and is good for economic growth, and that damaging public confidence may also affect the changes that consumers need to make which government will be reliant on to meet net zero.

3.239 Citizens Advice also noted that the discretion network companies have over whether to invest is limited. The price control sets clear deliverables and the licence sets clear obligations. So, whilst Ofgem asserts that the need to raise

[87] Frontier Economics (2024), Equity investability in RIIO-3 - A report prepared for the ENA.

fresh equity during RIIO-3 presents a risk it does explain how this works in practice. Citizens Advice believe these assets will remain attractive due to their low-risk nature. Although Citizens Advice have seen no evidence of this, even if rates of returns are not attractive to current investors, it's highly likely there will be investors for whom they are attractive. This means raising new equity is a risk to companies' share prices and not to consumers.

3.240 Citizens Advice argued that in extremis, if companies are genuinely unable to raise capital, Ofgem has already been clear that it has the tools to manage this scenario.

3.241 Citizens Advice stated that providing extra funding to manage a theoretical risk that does not appear to exist in the real world, and for which the ultimate consequences are limited, is not in consumers' interests.

SSMD decision and rationale

3.242 We introduced the concept of 'investability' in RIIO-3 to both signal and ensure that we are conscious of the potential challenges that the sectors could face in this and future price controls - particular in relation to the challenges associated with supporting the achievement of GB's net zero targets.

3.243 We must ensure that the regulatory and financial package facilitates the timely investment of capital in order to support the meeting of net zero and resilience challenges. We must also meet our primary objective to protect consumers' interests and ensure that they do not face charges that are higher than necessary. We are confident that our existing methodologies and approach to setting price controls will lead to sufficient but not excessive returns. However, we remain open to evidence on investability issues and will adapt our approach if there is sufficient evidence that this is warranted.

3.244 To ensure that any adaptations to support investability are proportional and objective, we will break down this concept into its component parts. In doing so, we hope to provide stakeholders with greater clarity on what investability means and how the concept will be used in RIIO-3.

3.245 We will consider investability in several ways:

a) Equity financeability, which we will primarily measure via cross-checks to our Step-1, CAPM-based estimate of the cost of equity;

- The need for additional checks or factors, such as those that have been suggested by the network companies;
- The assessment of additional risks factors relative to RIIO-2;

- Picking a point estimate from the cost of equity range, either in respect to individual metrics or the overall allowance; and
- Assessing equity issuance costs associated with new equity requirements over RIIO-3.

3.246 In the following sections we take each of these issues in turn. We have also collated submitted stakeholder views by each issue so that we can directly address the points raised.

The use of cross checks

SSMC summary

3.247 We noted that it was prudent to cross-check our CAPM-derived estimate of the cost of capital against relevant market data and other estimation methodologies to provide assurance that such estimate is neither too low nor too high.

3.248 Recommendation 7 of the UKRN Guidance suggests that cross checks may be used to sense check the CAPM derived point estimate. However, the Guidance recommends that regulators should only deviate from the mid-point of the CAPM cost of equity range if there are strong reasons to do so.

3.249 In the SSMC we agreed with this recommendation and proposed to use a range of cross checks to assess whether our CAPM-based estimate is materially out of line relative to estimates suggested by relevant market data and other estimation methodologies. In the RIIO-2 price controls, we considered the following cross-checks:[88]

- A WACC cross-check on the basis of observed gearing levels at comparator companies;
- A Market-Asset-Ratio (MAR) cross-check on implied costs of equity;
- An Offshore Transmission Operator (OFTO) implied returns cross-check;
- An unadjusted investment managers' implied cost of equity cross-check;
- An unadjusted infrastructure fund implied cost of equity cross-check; and
- An adjusted (at 0.9 beta) investment managers' implied cost of equity cross-check.

[88] Ofgem (2020), RIIO-2 Draft Determinations – Finance Annex, Table 24

3.250 In RIIO-2, our Step-2 cross-checks generally pointed to a cost of equity that was lower than suggested by our CAPM-based calculations. In RIIO-2 we chose not to make any downward adjustments to reflect this as the overall pattern did not suggest that any of the cross-checks were more reliable indicators of the cost of capital than that provided by the long-term approach used in the CAPM. We propose a similar approach for RIIO-3 unless there is evidence to justify changing this approach.

3.251 We noted that our allowed return on equity is calculated using a stable TMR assumption. As noted at paragraph 3.98, this approach supports overall stability in the allowed return, a feature that we consider to be valuable to long-term investors in the energy networks. The unavoidable implication of this approach is that the calculated cost of equity may be slightly higher or lower than would have been the case if we had instead used a stable ERP assumption. We noted that when analysing allowed returns on equity relative to debt as a cross check of a CAPM-based estimate, it may be the case that the equity premium over debt may be higher or lower than the through-cycle average. This dynamic means that it is very important that we do not 'cherry-pick' when assessing equity premium over debt, as 'fixing' for any perceived insufficient premium in one price control period, without factoring in the through-the-cycle impact of the stable TMR approach, may lead to consumers structurally over-rewarding investors.

Summary of consultation responses

3.252 The Frontier report on equity investability in RIIO-3 critiqued the cross-checks used by Ofgem in RIIO-2 and suggested alternatives that Frontier argue should be used by Ofgem when cross-checking the CAPM-based cost of equity estimate.

3.253 In relation to MAR-based cross checks, Frontier argued that there are general difficulties in drawing Cost of Equity inferences from this cross check, as well as specific issues around time sensitivity and the fact that they will reflect investor expectations of the RIIO-3 settlement. Frontier noted that regardless of the issues identified, there has been a significant reduction in MARS since Ofgem's assessment in RIIO-2 (with listed premiums sitting at 10-15% on average).

3.254 In relation to OFTO-based cross checks, Frontier argued that these bid-based returns may incorporate other value drivers to the bidder which are unrelated to the cost of equity, such as tax and financing structures. In addition, Frontier questioned Ofgem's approach of assuming a zero terminal value for each OFTO, which may not match investor expectations. Frontier argue that OFTOs operate at much lower risks, have 20-25 year fixed term windows that provide full recovery

of investment and are subject to limited incentive exposure. Frontier note that the cost of equity of these higher-geared vehicles would be lower if re-geared to 60%, but argue that Ofgem has not conducted robust evidence to show the size of this effect.

3.255 In relation to investment manager forecasts of TMR, Frontier argue that this is conceptually a cross-check of TMR, not of the allowed return on equity. In addition, Frontier stated that these forecasts are subjective opinions and should be regarded as no more reliable than survey evidence. Frontier also stated that this cross check is likely to be downward biased as their purpose is to provide prudent estimates of future returns without overpromising and mis-selling. Frontier noted that the CMA had expressed previous concerns in relation to these issues. Frontier provided an update on seven out of 11 investment managers previously used by Ofgem that had updated forecasts (to December 2023). The average (nominal) forecast of the seven had risen to 8.24% from a comparable 6.62% in July 2020.[89] Frontier point out that Ofgem used average forecast TMR in combination with a 0.9 beta in its previous cross checks. Apply this, and including Frontier's RFR assumption of 1.84%, would suggest an implied cost of equity of 6.04%.

3.256 Frontier also highlighted other TMR survey evidence from Fernandez et al, and noted that this suggested a CPIH-real TMR estimate of 7.7% in 2023. Using the same 0.9 beta and 1.84% RFR, this would suggest a cost of equity of 7.2%.

3.257 In relation to the infrastructure fund implied equity IRR cross check, Frontier noted previous criticisms of this check, and provided updated estimates based on 10 of the 13 funds previously considered by Ofgem. Frontier noted that all funds had shown an increased IRR, and that the average had increased from 6.4% in September 2019 to 9.6% in December 2023. Frontier stated that this suggests a cost of equity of approximately 7.5% in CPIH-real terms.

3.258 In relation to the Modigliani-Miller cost of equity inference cross check, Frontier stated that they had previously expressed a range of concerns with this cross check and that no inferences could be drawn from this test.

3.259 Frontier suggested that long-term profitability benchmarking was an alternative equity cross-check, stating that accounting information of companies' profitability can provide useful evidence as a cross-check. Frontier stated that the Return on

[89] Frontier reported this as an average of six investment managers, excluding Vanguard, as 8.7% versus 6.9%. Our figures include Vanguard. Frontier use a 1% uplift from geometric averages to arithmetic averages to make them comparable with the Ofgem TMR forecasts).

Equity (RoE) of comparators ranged from 5.9% to 17.5%, with a median of 8.4% (all CPIH-real). Frontier considered a reasonable range for this cross check to be 5.9% - 8.4%.

3.260 In relation to a hybrid bond cross check, Frontier focus on National Grid's June 2073 hybrid bond and find that the spread over equivalent National Grid senior debt is 136bps, implying a equity premium of 2.7% and an implied (CPIH-real) cost of equity of 6.7%. Frontier presented a range for this cross check (based on sensitivity checks) of 5.8% to 8.5% (CPIH-real), with a point estimate of 6.7%.

3.261 The Oxera report stated that Oxera's ARP-DRP analysis shows that only values towards the top of the TMR and asset beta ranges produce a risk premium on assets that is sufficiently high relative to the premium observed on debt.

3.262 One TO commissioned a report from KPMG that also used observed debt pricing and the relationship between the cost of equity and debt.[90] KPMG noted that the differential between a CAPM derived cost of equity and current debt pricing had shrunk from 4.54% in December 2020 to 1.40% in December 2023. On the basis of December 2023 data, KPMG estimate an inferred cost of equity range of 6.37% to 7.32% (at 55% gearing). KPMG's report noted that it does not propose that inference analysis can yield a precise estimate of the required cost of equity due to the presence of some noise in the estimation of equity risk premia from debt risk premia (driven by the different nature and risk exposures of each type of capital).

3.263 Citizens Advice stated that our current methodology will likely lead to returns which are too high. In response to our final determinations for ED2, Citizens Advice stated that the methodology resulted in at least £1.5 billion in excess returns going to companies using Ofgem's cross-checks. It further claimed that Ofgem's methodologies are upwardly biased due to compromises effected to deal with practicality issues involved in using the CAPM in real world situations, and in effect provides returns that are structurally higher than required.

3.264 Citizens Advice stated that at RIIO-ED2 Ofgem chose not to act on its own cross-checks that demonstrated that the allowed return on equity it was setting was too high, but rather used these as evidence that the cost of equity was instead not too low. Citizens Advice agreed with the cross-checks proposals, but stated that

[90] KPMG (2024), Inference analysis as a cross-check on allowed returns at ET3.

the results of cross-checks should be put to greater use and must be consistent regardless of what they show.

SSMD decision and rationale

3.265 Key to our use of cross checks is ensuring that we treat both consumers and investors fairly when setting allowed returns. This is a particularly difficult challenge in RIIO-3, as any new investors into the sector will require current returns to match the market cost of equity. While we normally consider likely returns on a 'through cycle' basis, this may cause issues if there is a disconnect with our 'through cycle' estimate and current market required rates of return. Using a balanced suite of cross-checks will help us to ensure that our estimated cost of equity is broadly in-line with current market requirements.

3.266 In relation to the MAR cross-check, the concerns raised by the network companies have been well considered in past determinations, including by the CMA on several occasions. We agree with the CMA's recently expressed view that while MARs are unlikely to be able to pinpoint an appropriate cost of equity in isolation, it would be difficult to accept that large MAR premiums can be justified by assumptions other than higher than required allowed returns or lengthy and consistent expected outperformance, or that MARs to carry no information value with respect to allowed returns.[91] Relatedly, on the issue of investor assumptions on issues such as growth and performance, and the impact these have on asset prices, we maintain the view that these assumptions can be considered in the analysis and/or provide interesting insight in their own right. We do not believe that factors such as material synergy assumptions are likely to be credible given the nature of these regulated and ringfenced businesses, while arguments relating to a 'winners curse' in asset transactions would seem be inconsistent with arguments that we should factor in the needs of highly sophisticated infrastructure investors when setting allowed returns and considering 'investability'. For these reasons, we expect to continue to reference listed and asset transaction MARs in our RIIO-3 cross-check process.

3.267 Network companies continue to express concerns about the use of implied OFTO returns. We accept that there are compromises with this (and all) cross checks that means that it must be used with caution. In a price control process where we must estimate the cost of capital, we see great value in evidence from

[91] CMA (2021), Network Companies vs GEMA, Final Determination, Volume 2A: Joined Grounds: Cost of equity, paragraphs 5.684 - 5.686

competitive processes. We consider the long-horizon OFTO projects to have a broadly comparable level of risk to networks, and while bid data may need to be adjusted to take account of different gearing levels, this process should be manageable (and is a key feature of our beta assessment process). On the issue of transparency, Ofgem has an unavoidable responsibility to protect commercially sensitive information. We do not think that this should exclude Ofgem from taking account of relevant information that OFTO bids can provide. For these reasons, we expect to continue to reference OFTO returns in our RIIO-3 cross-check process.

3.268 In relation to investment manager forecasts of TMR, we agree that the investment manager forecasts of TMR provide a cross check more directly on our TMR assumption than our overall cost of equity finding. However, this can still bring value to the process. We do not use forward looking methodologies when setting our estimate of TMR, and stakeholders have raised concerns that our approach to TMR will lead to either an insufficient or excessive estimate of the cost of equity. Retaining the ability to reference current market views on forward looking TMR is valuable, and we expect to include investment manager TMR forecasts in our RIIO-3 cross check process.

3.269 In relation to the infrastructure fund implied equity IRR cross check, it is important that we make our cross-checks as useful and relevant as possible, but do not 'cherry pick' only those that provide a certain view for each control. We will consider if and how a simple and objective infrastructure fund implied equity IRR cross check can best be applied, and will provide further details on this at DDs as appropriate.

3.270 In relation to the hybrid bond cross check proposed by the network companies, we agree with the broad principle that we would expect equity returns for an asset to be strictly higher than debt returns for the same asset. By extension, we can in theory consider the pricing signals from 'hybrid' instruments that have both debt and equity like features. However, we have some concerns with the specific evidence that has been presented. The evidence focuses primarily on the analysis of a hybrid bonds issued by one company (NGG Finance plc), and makes general assumptions about the characteristics of hybrid debt that may not be representative the specific situations faced in the heavily regulated network sectors. We do not think that using data from one company, and the specific analysis assumptions used, are necessarily appropriate for inclusion as a cross-check. As with other debt-based cross checks, we also do not agree that it is possible to consistently 'back solve' specific required returns on equity from debt

pricing because of changing levels or inaccuracies when assessing debt and equity risk premia over time. We will consider if and how we might best deploy this type of cross-check in RIIO-3, and discuss this further as DDs.

3.271 In relation to the ARP – DRP cross check suggested by the network companies, which follows the same basic premise that equity returns should be adequately superior to debt returns, we again agree with the broad principles behind this cross check. We also note the methodological improvements that Oxera have made to this check over time. While the exact calibration of any cross-check can be debated, our broader concern with any debt-based cross check is that we do not consider that it can definitively prove or 'back solve' to a required return on equity. As recently noted by the CMA, the assumption that real equity returns do not respond one-for-one with the RFR is a generally accepted regulatory principle. This means when interest rates rise, the ARP is likely to fall (ie, the relationship will not be constant as presented by Oxera). The CMA concluded that meaningful conclusions cannot be drawn on the appropriateness of the asset beta component [and so the total level of] of the cost of equity from the size of the ARP-DRP differential.[92] We will consider if and how we might best deploy this type of cross-check in RIIO-3, and discuss this further at DDs.

3.272 The 'Debt Inference' analysis provided by KPMG is very similar in approach, as it 'infers' a cost of equity from debt prices - noting how spreads have changed over recent years. Again, we agree with the principle that equity returns should be higher than debt returns. KPMG note that they do not propose that inference analysis can yield a precise estimate of the required cost of equity 'due to the presence of some noise in the estimation of equity risk premia from debt risk premia, driven by the different natures and risk exposures of each type of capital'. We consider this to be a sensible assessment. As with the other cross-checks suggested by the network companies, we will consider evidence from debt pricing and how this can be incorporated as a cross-check for price control purposes.

3.273 In relation to long-term profitability benchmarking, we remain unconvinced that this approach is likely to provide an appropriate cross-check for our CAPM-based cost of equity. While we acknowledge that there are challenges in interpreting the output of all the proposed cross-checks, we consider this approach to be particularly unsuitable. Key to our concerns is the representativeness of the

[92] CMA (2023) H7 Heathrow Airport Licence Modification Appeals - Final Determinations, paragraphs 6.286 - 6.288

comparators chosen, where we consider the comparators likely to skew towards business models that are materially riskier than the highly regulated monopolies subject to this price control. There are also substantial difficulties in comparing accounting metrics with regulatory return metrics, as this data is likely to be prepared to different standards, and we see significant issues in controlling for the different levels of gearing used in the comparators. On this basis, we do not intent to use profitability benchmarking as a cross-check within our Step-2 process.

3.274 There is a degree of circularity with cross-checks, and we consider many of our proposed checks will be of most value when our methodology decisions and 'early view' of the cost of equity are known by the market. On this basis, we will not conduct our cross-check processes until DDs.

3.275 Citizens Advice state that Ofgem should more actively adjust the Step-1 cost of equity estimate on the basis of the Step-2 cross checks. We are reluctant to commit to such an approach. We consider none of the cross-checks to be superior to the CAPM when estimating the cost of equity. As a result, it is potentially irrational to change our estimate based solely on less effective estimation techniques. We consider the value of the cross-checks to come from identifying whether our CAPM-based estimate is materially out of line with other approaches to estimating the cost of equity. This may be evident if all, or a majority of, well-calibrated cross-checks suggest a cost of equity that is materially higher or lower than our CAPM-based estimate. Aggregate cross-check results that show an immaterial difference to our CAPM-based estimate, or results that straddle our CAPM-based estimate, would not necessarily justify any change at Step-2 of our process.

Additional tests of investability

SSMC summary

3.276 In the SSMC we noted that we were open to considering whether a broader assessment of investability in addition to our traditional assessment of financeability may be necessary and has benefits for consumers, and invited views and evidence on how this could be assessed.

Summary of consultation responses

3.277 We will use a range of cross-checks when setting the allowed return in RIIO-3. We will introduce this analysis at DDs. Below, we address concerns around the

cross-checks used in RIIO-2 and the potential new checks that were suggested by the network companies.

3.278 The network companies provided a range of metrics that they suggested would be required to ensure that companies remained investable during the RIIO-3 price control period. Suggestions from network companies included an attractive dividend yield, attractive accounting earnings growth, valuation and debt metrics and a strong balance sheet.[93]Network companies also suggested that Ofgem should take account of sell side analyst commentary, investor feedback and share price movements.

3.279 Network companies argued that a clear, predictable and appropriate regulatory framework that avoided 'shocks' would be important in supporting the transition from RIIO-2 to RIIO-3. One network company argued that a number of Ofgem's proposals include changes to established regulatory principles, notably in the proposed options for inflation and cost of debt allowance calculation. The company stated that if such proposals violate principles and undermine investor confidence, they may also undermine investability assessments, and that same may apply to changes to finance parameters, such as gearing, asset lives or notional dividend yield, used as a short-term financeability "fixes" based on limited evidence and at the cost of long-term stability or financeability.[94]

SSMD decision and rationale

3.280 We do not, in general, agree with the appropriateness of the additional metrics suggested by the network companies. We have particular concerns about metrics in relation to earnings growth profiles and valuation metrics. Regulated utilities have distinct and attractive characteristics, such as highly secure cash flows and comprehensive inflation protections. These valuable characteristics are not generally present at companies operating in competitive markets, and there may be other differences that accompany this - such as lumpier growth profiles or temporary mismatches between asset growth and earnings growth. We do not consider it to be the role of the regulator to facilitate particular earnings profiles or valuation metrics at any point in time, and we see nothing in Ofgem's statutory duties that would require it to take such issues into account.

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3.281 We also see no clear evidence why attempting to smooth earnings or maintain certain valuation metrics through the price control would be in the interest of consumers. It is not clear to us that changes to maintain these features could be applied in such a way that customers would face a neutral cost. We also note that network companies are generally against the NPV-neutral moving of cashflows to alleviate financeability concerns, and the stance here would seem to be inconsistent unless there was a permanent transfer of value from consumers to investors.

3.282 We are open-minded to the requirements of investors, and we do see the potential benefit in considering issues such as the dividend preferences of investors in the utilities sectors (who often have underlying income requirements). However, we also see great potential value in the anticipated growth in the ET sector, growth that will increase earnings (and so income) potential in future periods. We must be careful to capture the potential value of both growth and income when considering the attractiveness of the investment proposition. We must also ensure that we are being logically consistent in our assumptions regarding equity raising and equity distributions. We will continue to work with stakeholders on an appropriate dividend yield assumption (at the notional capital structure) and will make a decision on this at DDs. Our working assumption for SSMD is to maintain the 3% dividend yield base case used at RIIO-2, and we will discuss this further in Section 5 on financeability assessments.

3.283 Similarly, we already carefully consider the financial strength and likely investment grade credit rating that an efficient company operating at the notional capital structure could be expected to achieve. While we recognise the importance of these issues, we do not consider it in consumers' interest to be excessively rigid in the application of this process (such as guaranteeing that companies will always have metrics at or above a certain level). We discuss these issues further in Section 5 on financeability assessments.

3.284 On the issue of regulatory predictability and avoiding 'shocks', we agree that stability in overall regulatory framework can be important to investors. Our approach throughout this financial framework is to maintain consistency where this is appropriate. However, we will always act on the basis of the evidence and will look to make changes and improvements this will help improve our ability to discharge our duties.

3.285 Investability is an important issue and we are alive to the new challenges that companies may face when raising equity to fund investments in the coming

periods. We will continue to work with stakeholders before DDs and FDs to ensure that the RIIO-3 package is sufficiently attractive to investors while maintaining low costs to consumers.

Additional risks in RIIO-3 (including asset stranding risk)

SSMC summary

3.286 In the SSMC we noted that if there is also evidence indicating that the GD, GT and ET sectors face different levels of systematic risk on a sectoral basis, it may be appropriate to use different beta estimates for the different network sectors and the allowed return on equity may differ as a result. For example, this could be due to licensees adopting new licence obligations which would materially change the systematic risk of the licensee in the round after relevant risk sharing, transfer and/or mitigation mechanisms (including those within the wider price control arrangements) are reflected.

Summary of consultation responses

3.287 TOs argued that they face materially higher risks in RIIO-3 in comparison to RIIO-2, primarily as a result of the large-scale investment that will be required in ET infrastructure in order to meet net zero challenges. Companies argued that they are now delivering a series of 'mega projects' that total in the 10s of billions of pounds. One TO stated that if Ofgem assumed 50% of total risks of the anticipated capital programme materialised, this would lead to around 2.5% of equity risk in RIIO-3 compared to 1% in RIIO-2.

3.288 TOs provided assessments of areas of increased risks, including those identified by economic consultants. TOs argued that this increase in risk comes from factors such as:

- Risks associated with the scale of investment;
- Asymmetric business risks;
- New technology risks;
- Financing risks;
- Regulatory risks; and
- Risks from incentive regimes.

3.289 TOs stated that there had been a material downward skew in the anticipated Return on Regulated Equity (RoRE) ranges for RIIO-3 in comparison to RIIO-2.

3.290 TOs stated there were a number of ways that increased risk exposure could be reflected in the price control, including:

- increasing the CAPM beta to reflect higher levels of capex/RAV, potentially via including evidence from construction or growth companies; and
- applying uplifts to allowances, such as the 1 or 2% uplifts to hurdle rates applied by DESNZ in relation to offshore wind projects or the 0.75% Return on Equity incentive used by FERC in relation to New York Offshore Wind Transmission Line.

3.291 The TOs also stated that risks could be mitigated rather than compensated, through measures such as:

- Ensuring that incentive regimes are balanced and tailored to allow achievable rewards, including recalibrating the approach to caps and collars, reflecting the highly challenging delivery environment in RIIO-3.
- Consideration of additional regulatory mechanisms that could reduce risk and secure access to supply chains.
- Reviewing Real Price Effects mechanism and indirect allowances to reflect the uncertain cost environment.

3.292 GDNs and National Gas argued that risks in their sectors were increasing in RIIO-3. The GDNs commissioned a report from Oxera which addresses these risks. Oxera argued that while the RIIO-3 period itself may not see substantive changes to the level of investment, GDNs are preparing for a range of medium- to long-term future of gas scenarios, and that this brings uncertainty to gas investors.

3.293 Oxera's report focuses on the issue of asset standing risk in the gas sector, which it describes as the non-zero probability that gas network assets will become unusable and unsuitable for resale or repurposing, meaning that investors may fail to recover their past investment. Oxera argued that the risk relates not just to assets that are (or are expected to be) 'fully stranded', but also that networks will be unable to collect sufficient revenues in relation to still in use assets as a result of insufficient remaining customers on the gas networks (ie, that the implied costs per customer would be infeasible). Oxera stated that the asset stranding risk is a form of revenue/allowed return shortfall risk.

3.294 Oxera argued that asset stranding risk is asymmetric. Specifically, there is no expectation that Ofgem would allow the over-recovery of allowed revenues (there is no potential gain from asset stranding), but that (absent government intervention), Ofgem is unable to ensure that there will never be under-recovery.

Oxera argued that as with all asymmetric risks within a regulatory regime, the asset stranding risk implies a downward pressure on expected returns - meaning that investors cannot expect to earn the stated allowed return on equity on a probability adjusted basis.

3.295 Oxera argued that asset stranding risk should be addressed directly within the regulatory regime, or an appropriate uplift should be applied to the allowed return to avoid under-compensation and to maintain a fair and balanced return expectation. However, Oxera argued that the risk cannot fully be removed within the regulatory regime, and that as long as the risk leads to material downside, it requires an uplift to the allowed return.

3.296 In support of a required uplift, Oxera reference evidence of higher debt premiums at GDNs relative to electricity network companies, which Oxera states is consistent with additional asset risk for gas relative to a 'baseline steady-state energy network'. Oxera also relied on evidence from European gas company betas versus relevant electricity betas, with Oxera finding that gas asset betas in Spain and Italy were 0.02 higher than electricity betas.[95] Oxera argued that the asset stranding risk in both Italy and Spain may be the same or lower than in GB, while the regulatory regimes are comparable.

3.297 Oxera cited a regulatory precedent for addressing asset stranding risk, specifically investor protections from the government in relation to a policy-driven shut down of Hinkley Point C nuclear plant and the German government committing to compensate 76% of the deficit between expected and actual revenues if the ramp up of hydrogen is not sufficient. Oxera notes that government commitments may not fully eliminate risk, but argued that it is likely that such ex post compensation commitments will reduce the scale of necessary ex ante regulatory action.

3.298 Oxera argued that regulatory intervention such as in relation to asset lives and depreciation profiles[96] act to mitigate but not completely remove risk, while increasing allowances would allow networks to remain investable despite bearing some of the asset stranding risk.

3.299 Oxera stated that jurisdictions such as Austria and France have combined the shortening of asset lives with uplifts to WACC. Oxera also noted that the New Zealand regulator had allowed a 10bps uplift to the return on the RAB to

[95] Using 10 year beta and 0.075 debt beta. The gap was 0.03 when using 2 year betas and 0.04 when using 5 year betas.
[96] We consider these issues in more detail in the Regulatory Depreciation section. Here we will focus on arguments relating to potential uplifts to the allowed return on equity.

compensate for asset stranding risk in fibre, and had previously allowed a 0.05 asset beta uplift for gas networks (with asset stranding risk being one factor in this decision).

3.300 In response to FQ8, one GDN provided a proposed framework for estimating an appropriate uplift to WACC to compensate for the asymmetric asset stranding risk. The GDN noted that their application of this framework suggests a modest but not negligible uplift to WACC. Alternatively, it suggested that Oxera's ARP-DRP framework could be used, building on evidence of increased required premiums in debt markets.

3.301 Centrica considered that reliable, inflation-linked returns will remain an attractive proposition for equity investors. Centrica argued that there are no grounds or evidence for discontinuities in the cost of raising equity for regulated network companies provided that a stable regulatory framework is maintained. Centrica expected that network companies should have the capability to manage these issues efficiently.

SSMD decision and rationale

3.302 In general terms, we would expect higher levels of risk exposure to be accompanied by an offsetting increase in expected returns (ie, a higher cost of equity). In assessing changes in risk, it is vital that we do so on a 'net' basis. In other words, we must assess the overall change in risk, including new or updated mitigations used throughout the price control package, to ensure that consumers are not funding more return than is required. Similarly, the presence of individual asymmetric risks within the package is not a reason to provide additional returns. It is the aggregated balance of the whole price control that should influence the associated balancing of overall risk and reward. We discuss this further in relation to Step-3 from paragraph 3.339.

3.303 We must also carefully consider the type of risk being faced. An overarching assumption in the CAPM used to estimate the cost of equity is that idiosyncratic risks can be diversified away by investors, and only systematic (common) risk, such as exposure to the broader economy, require compensation in the form of return to investors.

3.304 At this stage of the RIIO-3 process, we consider it most appropriate to look to address changes at risk 'at source'. Elsewhere in the regulatory package, this involved considering issues such as Totex Incentive Mechanism (TIM) rates and other mechanisms that allocate the relative exposure to operational risks between investors and consumers, such as load-related re-opener mechanisms in ET. We

will learn more about this balance of risk as we consider business plans and will make decisions on these issues at DDs.

3.305 Within the financial framework, we have looked to address potential changes in risks for RIIO-3 (relative to RIIO-2) in two ways. Firstly, we are considering including European GD, GT and ET companies into our comparator set when estimating an appropriate beta. This should mean that the net-zero driven risks that energy networks face, to the extent that they are systematic, should be better captured in our cost of equity assessment process. While the Water sector faces conceptually similar challenges, including large investment programmes, we do recognise that including more energy networks in the estimation process may more accurately identify the systematic risks that the market sees as applying to these businesses specifically. As noted at paragraph 3.224, improving our assessment of forward-looking risk exposure by including European utility comparators, would likely increase our estimate of beta into the upper half of the 0.30 - 0.40 range, and to a level in excess of the beta used in RIIO-2. This change explicitly addresses the potential for a different risk profile in RIIO-3 relative to RIIO-2.

3.306 We consider updating the beta estimate via an improved comparator set to be more appropriate and accurate than more 'manual' adjustments to data to reflect different risk profiles in either gas or ET sectors. Manual adjustments are likely to be largely subjective. We see particular value from including European utilities when calibrating the required return in gas, as we currently have no listed GB gas companies and we consider similar asset stranding risk perceptions will be present in European and GB gas networks.

3.307 In addition, we have acted to mitigate the perception of asset stranding risks in the gas sectors by accelerating depreciation - effectively increasing the speed at which investors recover previously invested funds and reducing future upward pressure on average bills. In line with the view expressed by the CMA in the appeal of RIIO-2,[97] we consider that mitigation of perceived risk to the recovery of RAV via acceleration of depreciation is more suitable than pre-emptive increases to allowed returns on equity. Full details of our accelerated depreciation proposals can be found in Section 8 below.

[97] CMA (2021), Network Companies vs GEMA, Final Determination, Volume 2A: Joined Grounds: Cost of equity, Paragraph 5.869

3.308 Combined, we consider changes to the beta comparators and accelerated depreciation to be a) sufficient to reflect any changes to the risk profile of RIIO-3 relative to RIIO-2 and b) materially superior approaches relative to taking a RIIO-2 level or return and applying subjective uplifts to represent potential changes in risks. Our objective remains to set allowed returns that provide sufficient but not excessive returns commensurate with the risks that investors are taking. We will continue to work with stakeholders on these issues, and if there is evidence of forward-looking risks that are not sufficiently captured in our current methodology (and that exposing investors to these risks is in the consumers interest), we may consider further updates to our methodology at DDs.

Picking point estimates from the metric ranges

SSMC summary

3.309 In the SSMC, we noted that inputs into the CAPM may be expressed as a range, depending on the breadth of evidence that is included when making the estimation. Where ranges are used as inputs into the CAPM, this will naturally lead to there being a high and low estimate for the cost of equity. Our intention is that GEMA will set a single cost of equity (at a notional level of gearing) to be applied in relevant licensees. If we have estimated the cost of equity initially as a range, we intend to choose a point in that range as the allowed return on equity.

3.310 UKRN Guidance recommendation 6 suggests that the RFR, TMR and (re-levered) equity beta assumptions should be combined using the CAPM to produce a cost of equity range. The mid-point of the range should be used as the central estimate for the CAPM cost of equity.

3.311 Our central assumption is that the allowed return on equity should match our assessment of the cost of equity. If we do utilise a range for one or more of the CAPM inputs, we proposed to calculate the associated high and low range cost of equity estimates and anticipate the midpoint of this range will represent our best estimate of the cost of equity.

Summary of consultation responses

3.312 Network companies generally recognised in principle that the component parts of the CAPM should be combined to provide a cost of equity range, from which the mid-point should be used as a central estimate. However, network companies pointed out that there were general and specific benefits from 'aiming up' or otherwise picking an estimate higher than the midpoint of the range.

3.313 Network companies argued that cross-checks, and specifically the network company-proposed debt and profitability related cross checks, showed that the top of the cost of equity range was more likely to be appropriate. Frontier stated that investability tests showed that an appropriate allowed return on equity was likely to be at line in line with the top end of Oxera's estimated range (ie, 6.48%) and that even this figure was at the lower end of the range implied by Frontier's broader suite of cross-checks.

3.314 Network companies specifically referenced the fact that beta estimates were backward looking, and would not necessarily capture the risks that companies faced in RIIO-3, and the impact of assuming a stable TMR, as reasons why Ofgem should aim higher than the midpoint of the CAPM range. Network companies suggested that there was scope within the UKRN Guidance for regulators to pick higher than the midpoint of either metric or overall CAPM ranges, based on relevant evidence.

3.315 Network companies referenced the importance of ensuring the transition to net zero, and that the impact to consumer welfare from aiming up was likely to be lower than the impact from underinvestment as a result of allowed returns being set too low.

3.316 Citizens Advice argued that compromises made by regulators in the calculation of TMR and beta meant that the CAPM metric ranges were structurally biased in favour of companies and against the interests of consumers (and that this was supported by the real world evidence of the premiums [over RAV] being paid for network companies). Citizens Advice argued that using the midpoint of the range for the spot estimate, whilst making sense in theory, did not hold in reality as it represents 'aiming up'.

3.317 Citizens Advice stated that this had been recognised by the National Infrastructure Commission (NIC) that has recommended setting the cost of equity with the expectation that network companies will outperform targets and earn rewards - known as 'aiming off'. Citizens Advice noted that Ofgem has previously recognised this in RIIO-2 where it had suggested that even its post-outperformance wedge estimate of 4.30% represented a degree of aiming up, given the evidence from cross-checks.

3.318 Citizens Advice stated that the views of the NIC had not been taken into consideration by the UKRN when drafting its guidance. Similarly, the instruction from the CMA in the RIIO-2 appeal that Ofgem needs to consider how to address outperformance also did not appear to have been considered. Citizens Advice

suggested that Ofgem should 'aim off' as a method of addressing both the CMA's concerns regarding outperformance and the structural asymmetries that exist across the price control process.

3.319 Centrica agreed with Ofgem's assessment that a generalised 'aiming up' of the allowed return on capital is not in consumers' interests. Additionally, it agreed that any wider developments in financial markets should be reflected in estimates of the risk-free rate and the total market return and, as such, do not require adjustments. However, Centrica suggested that Ofgem may consider this on an exceptional basis if an individual network company can provide detailed evidence of the specific impact of having to raise equity and can justify why a departure is in consumers' interests. Centrica noted that the burden of proof should be on the network company to make the case for any departure from the current approach to estimating the cost of equity and the hurdle for making company-specific adjustments of this type necessarily should be high.

SSMD decision and rationale

3.320 The UKRN Guidance recommends that the RFR, TMR and (re-levered) equity beta assumptions should be combined using the CAPM to produce a cost of equity range, and that the mid-point of the range should be used as the point estimate for the CAPM cost of equity. We broadly agree with this recommendation. However, we consider that this recommendation best applies where CAPM metric ranges are broadly symmetrical. This is likely to apply to estimates in relation to the TMR (and we do not supply a range for the RFR), but not to beta. As discussed at paragraph 3.224, we retain the ability to weight individual or groups of beta comparators if this will lead to a more accurate estimate of beta for energy networks. As a result, the most accurate estimate may not be the same as the middle of the identified range.

3.321 As discussed at paragraph 3.265, we will use cross checks to ensure that our CAPM-based estimate of the cost of equity is not materially insufficient nor excessive. This should mitigate concerns relating to any potential structural biases in the methodologies for estimating the CAPM components.

3.322 In relation to arguments in favour of more general 'aiming up' to help facilitate investment, we do not currently consider this to be required to meet our statutory duties. We note UKRN Guidance recommendation 7 that regulators should only deviate from the mid-point of the CAPM cost of equity range if there are strong reasons to do so. We currently view the evidence considered within our Step-2 methodologies, including our granular assessment of investability as

described at paragraph 3.245, to be a more considered approach to ensuring that our allowed return on equity is sufficient but not excessive.

3.323 In relation to structural outperformance from asymmetry of information and the potential benefit of 'aiming off', we address these issues below in relation to Step-3 of the process for setting allowed returns on equity.

Additional equity costs

SSMC summary

3.324 In the SSMC, we noted potential incremental improvements that could be made to the assessment of financeability and investability could include assessing the appropriate equity issuance cost allowance.

Summary of consultation responses

3.325 The TOs provided a range of responses suggesting that the current 5% equity issuance allowance was unlikely to be sufficient for RIIO-3. The TOs stated that there was evidence that these direct costs alone amounted to approximately the 5% allowance that was provided in RIIO-2.

3.326 A TO commissioned a report from Oxera, 'Estimating the appropriate allowance for new equity issuance for RIIO-3', which recommended a direct cost allowance for new equity issuance of at least 5% plus an additional indirect cost allowance for new equity issuance under RIIO-3 in the range of 2.6–9.7% (with a mid-point of 5.1%).

3.327 One TO estimated that the 'cost of carry' associated with equity issuance was 100-200bps, and that an additional allowance for reduced leverage should be applied to any equity issuance. The TO suggested that this cost of carry of 530bps on a reducing balance of "excess equity" would result in a requirement for an additional one-off equity cost of carry allowance of between 7.95% and 13.25% of the amount of new equity.

SSMD decision and rationale

3.328 We do not currently consider it appropriate to increase the equity issuance allowance in its current form. We are currently considering two potential approaches to setting the equity issuance allowance in RIIO-3, which we discuss in more detail below.

3.329 It is particularly important that we set an appropriate equity issuance allowance in RIIO-3. ASTI and CNSP projects are likely to drive significant RAV growth over RIIO-3 and beyond, and so it is likely that TOs will need to raise equity in order to

remain at appropriate levels of gearing. This is an unusual situation as networks have previously been able to manage their equity investment in growth via retained earnings.

3.330 While we note the network company evidence that costs associated with equity issuance may be higher than our current allowance, we also note that our current 5% allowance is a) substantially higher than the 2% allowance available in the Water sector; and b) that neither the 2% allowance in the Water sector nor the 5% allowance in RIIO-2 has prevented equity issuance programmes in recent years (including National Grid plc's recently announced £7 billion rights issue).[98]

3.331 Given a relative lack of historical data specific to these equity issuance costs at the companies subject to RIIO-3, it is difficult to set an appropriate allowance ex ante that will provide sufficient compensation for efficient equity issuance costs in most scenarios whilst preventing consumers from over-compensating companies for costs that were ultimately not incurred.

3.332 We must also strive to prevent unintended consequences, such as tacit incentives to take on additional gearing, either within the regulatory ringfence or at higher ownership structures, whilst earning an allowance for assumed equity injections at the notional capital structure. We address a similar issue in relation to the tax shield benefit from additional gearing levels (relative to the notional capital structure). Here we 'claw back' any benefit gained from higher levels of gearing and pass this back to consumers (for further details see Section 7).

3.333 We do not currently consider it appropriate to increase the equity issuance allowance in its current form. We are currently considering two potential approaches to setting the equity issuance allowance in RIIO-3. The first option would be to leave the allowance at 5% and continue to apply this to implied equity injections under the notional capital structure. While there is evidence that this allowance level is more generous than allowance provided in a very similar regulatory regime (Water), we acknowledge the potential value of stability and consistency in this area. This approach may be particularly valuable considering the broader 'investability' concerns in RIIO-3 and the need to secure adequate equity capital to fund the significant investment programme envisioned for the ET sector in the coming price control periods.

3.334 The second option would be to create a new mechanism for assessing the equity issuance costs actually incurred by companies. This approach would likely be

[98] www.nationalgrid.com

much more invasive, but would help to ensure that only costs efficiently incurred were compensated by consumers. This approach could take the form of an initial allowance and a 'claw back' mechanism, as currently applied to corporation tax allowances, or could involve a comprehensive ex post review to ensure that the costs companies submit for compensation are appropriate and efficient. Both types of approach under this second option would consider whether costs were genuinely related to equity issuance (ie, not relating to capital initially raised in debt markets or via retained earnings from elsewhere in group structures) and would ensure that only costs relating to equity capital that was raised for and retained within the regulated entity (applied at the notional capital structure) received compensation. Other forms of capital (ie debt raised at the regulated entity or at a parent company as passed down as equity) would either not qualify for issuance allowances or would have allowances already in place elsewhere in the finance framework.

3.335 To facilitate this approach, it may be appropriate to set maximum allowances on an ex ante basis to help guide network companies on the type and level of efficient costs that would be considered for subsequent compensation.

3.336 For RIIO-3, we are currently expect to keep the equity issuance allowance methodology and 5% level currently used in RIIO-2. However, we will continue to work with stakeholders and assess any evidence that a clawback or ex post cost assessment process would be in the consumer interest and would support more accurate compensation of efficient equity issuance costs.

3.337 We currently do not see a need to make specific allowances for large cost of carry costs associated with equity issuance (over and above the allowances currently provided in relation to the allowed return on debt). We expect network companies, especially those who have chosen to position themselves as part of wider corporate groups, to manage their treasury facilities efficiently and avoid such excess cash holdings over extended periods. We also note that notional gearing is set at a lower level in ET versus gas sectors specifically to facilitate temporary increases in gearing to support investment, gearing which can subsequently be offset by equity injections to return to the notional level in a timely fashion. We continue to expect companies to use the superior flexibility of debt financing in order to manage these issues effectively, absent additional evidence that such an approach would not be feasible or efficient or would lead to excess costs not captured within the existing framework.

3.338 For business plan purposes, network companies should continue to use an assumption of a 5% equity issuance allowance.

Step 3: Expected versus allowed returns

SSMC summary

3.339 In RIIO-2, Step 3 in the process of setting an allowed return on equity was an adjustment to account for anticipated outperformance resulting from network companies possessing an inflation advantage over the regulator. This adjustment was known as the 'outperformance wedge'.

3.340 Under the appeal of the RIIO-2 price control, Ofgem's Step 3 process and the introduction of the 'outperformance wedge' was considered to be 'wrong' by the CMA and was subsequently removed from the RIIO-2 controls (and was not applied for RIIO-ED2).[99]

3.341 In its determination, the CMA noted that the overall extent of operational outperformance in RIIO-1, and evidence on totex outperformance in previous energy price control periods, provided strong support for GEMA treating the scope for operational outperformance as an important risk area for RIIO-2. The CMA also stated that it was appropriate for GEMA, having defined and calibrated the totex and Output Delivery Incentive (ODI) arrangements, to take a 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. However, the CMA ultimately concluded that GEMA had not demonstrated sufficiently why the extensive set of tools GEMA used for RIIO-2 should be regarded as providing insufficient protection for customers.[100]

3.342 In the SSMC we noted that we had taken on board the CMA's decision on this issue and do not propose reintroducing Step 3 into our process for assessing allowed returns on equity in these price controls. However, when setting appropriate allowed returns, we must take into account the expected outcome of the entire price control (for efficient licensees at the notional capital structure). For example, the skew of incentives in the price controls could be set in a way which would result in the expected return on equity for an efficient licensee being higher or lower than our estimate of the cost of equity. We stated that if there

[99] CMA (2021), GD&T Licensees vs the Gas and electricity Markets Authority, Final Determination – Volume 2B: Joined Grounds B, C and D, paragraph 6.182.
[100] CMA (2021), GD&T Licensees vs the Gas and electricity Markets Authority, Final Determination – Volume 2B: Joined Grounds B, C and D, paragraphs 6.178 – 6.181.

was evidence of this, we may need to adjust the allowed return on equity such that expected returns match our best estimate of the cost of equity.

Summary of consultation responses

3.343 Network companies argued that any attempt, explicit or implicit, to reintroduce such an 'outperformance wedge' concept in RIIO-3 would damage investor confidence and weaken the investability of the price control. Moreover, such a mechanism would not be consistent with Ofgem's statutory duties to 'financeability' or to have regard to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed. One TO stated that Ofgem should not introduce any adjustment to allowed returns to reflect its view of expected returns.

3.344 As noted above at paragraph 3.293, the GDNs suggested that asset stranding risk represented a revenue/returns shortfall risk, and that this should be reflected in allow returns such that the probability-adjusted expected return again matched the cost of equity.

3.345 As noted above at paragraph 3.318, Citizens Advice reference the NIC and state that regulators should expect companies to outperform the allowed return, and as a result should 'aim off' on the cost of equity such that the probability-adjusted expected return again matched the cost of equity.

3.346 Centrica stated that abandoning the outperformance wedge does not address the structural and systemic weaknesses that it was originally designed to counterbalance, which are, in part, caused by the informational advantage the network companies hold. Centrica stated that the CMA also recognised the structural and systemic weaknesses which the outperformance wedge was intended to address. Centrica argued that abandoning the outperformance wedge places even greater onus on Ofgem to ensure that:

- each element of the price controls are appropriately calibrated by, for example, embedding recent revealed performance in targets for financial incentives;
- effective 'truth-telling' mechanisms are designed and implemented; and
- effective ex post scrutiny of costs, delivery deadlines and performance where this forms part of the regime for particular elements of totex.

SSMD decision and rationale

3.347 We note that there was not consensus amongst network companies, with GDNs wanting probability weighted outcomes to lead to a change in allowed returns, while other network companies argued that Ofgem should not introduce any adjustment to allowed returns to reflect its view of expected returns.

3.348 We also note the evidence from Citizens Advice and Centrica on the CMA's underlying support for addressing asymmetries and the ongoing need to address sources of structural outperformance.

3.349 We have taken on board the CMA's decision and will seek to address asymmetries 'at source' across the regulatory framework. However, if we consider it to be in the consumer interest to have 'skew' in the overall regulatory package (eg, via the calibration of incentive mechanisms in aggregate), we retain the discretion to use a Step-3 process to ensure that expected returns to investors again match our best estimate of the cost of capital.

3.350 At this stage, we have not identified any SSDM decisions which would imply an asymmetric return. We would only expect to make such a 'Step-3' adjustment if future decisions in relation to the design of the price control led to an intentional and material skew in expected outcome relative to allowed returns, and would seek to avoid undermining the power of incentives if we consider that these will provide positive outcomes for consumers.

4. Allowed WACC

Introduction

1.1 The total allowed return for companies in this price control is calculated as a WACC. The WACC consists of three inputs:

- The allowed return on debt;
- The allowed return on equity; and
- The relative weights of debt and equity.

4.1 The WACC calculation combines the allowed returns on debt and equity according to the following formula:[101]

$$WACC = K_d.g + K_e.(1 - g)$$

4.2 In regulatory price controls the mix of debt and equity capital are referenced in terms of the weight of debt within the capital structure, known as 'gearing'. Regulators typically set price controls with reference to a notional level of gearing, although this level (and the associated allowed return) can then be varied depending on circumstances relating to individual companies or network types.

4.3 The level of gearing is also used within the calculation of the allowed return on equity. As discussed at paragraph 3.211, the equity beta, and so the overall cost of equity, rises with the level of gearing.

4.4 In addition to defining the amount of gearing, the notional structure can be more explicit about the types of debt used within an overall gearing assumption. In this way, the notional capital structure can reflect both the proportion and the type of debt we assume that companies utilise when setting our allowed return on capital.

Our approach for RIIO-3

SSMC summary

4.5 In the SSMC, we noted that the notional capital structure is conceptually distinct from the actual capital structures used by companies. Actual capital structures are a choice for company management and owners, within licence condition

[101] Where Kd is the allowed return on debt, Ke is the allowed return on equity and g is the weight of debt within the capital structure, also known as gearing.

boundaries. In setting allowed returns based on a notional capital structure, regulators allow companies the flexibility to make decisions on capital structure that are appropriate for each individual business (subject to financial resilience requirements). This approach ensures that management and owners remain responsible for the risks and rewards of the actual capital structure and financing decisions, and that the outcome of these independent decisions does not impact consumers.

4.6 We stated that we expected gearing levels in these price controls to remain consistent with those used in RIIO-2. However, this will be subject to the confirmation of company specific investment plans. The gearing assumptions in RIIO-2 were split between ET at 55% and Gas sectors at 60%, as shown in Table 14.

Table 14: Notional gearing levels applied in RIIO-2

Licensee	**Sector**	**RIIO-2 Starting Notional Gearing**
SHET	ET	55%
SPTL	ET	55%
NGET	ET	55%
NGGT	GT	60%
Cadent	GD	60%
Northern	GD	60%
Scotland	GD	60%
Southern	GD	60%
Wales & West	GD	60%

Source: RIIO-2 Final Determinations - Finance Annex (Revised), Table 14

4.7 We proposed to update our approach to the application of notional gearing levels during the course of the price control. Currently, notional levels of gearing are assumed at the beginning of the price control and are allowed to flex on the basis of cash generation over the course of the price control period. We consider that it may be more intuitive to assume that the notional capital structure remains constant in each year of the price control and that variables such as net issuance of debt and equity are varied in order to achieve this.

4.8 We asked three questions on allowed WACC in the RIIO-3 SSMC. These were:

- FQ10. Do stakeholders consider there to be good reasons to deviate from the respective approaches set out under UKRN Recommendations 1 and 9?

- FQ11. Do stakeholders consider there to be good reasons to deviate from the notional gearing assumptions (with respect to the level of gearing and the mix of debt types) applied to GD, GT and ET companies in the RIIO-2 price controls?
- FQ12. Do stakeholders agree with the proposal that notional gearing levels should be maintained for each year of the price control? Do stakeholders have a preference for how this assumption is managed within the price control process?

Summary of consultation responses

4.9 In relation to FQ10, stakeholders were in general support of our proposal to both estimate the allowed rate of return in the RIIO-3 price control based on the weighted average cost of capital for a notionally financed firm (UKRN Recommendation 1) and to set notional gearing to reflect the regulator's assessment of the balance of risks facing the regulated company, a wide range of benchmarks and overall regulatory policy objectives - not just the gearing levels of actual companies (UKRN Recommendation 9). Several network companies caveated that this agreement was reliant on the underlying parameters and values being estimated and set appropriately and reasonably.

4.10 Several network companies noted that Ofgem would have to consider actual rather than purely notional capital structures if it chose either Option 1 or Option 2 when addressing the inflation leverage effect (for further details of this discussion please see Section 2).

4.11 Two network companies disagreed either partially or fully with the proposal to set returns on the basis of a notional capital structure. ENWL broadly agreed with the two relevant UKRN recommendations. On Recommendation 1, ENWL acknowledged that application of a notional company construct is a continuation of a regulatory principle established many years ago and is seen as a cornerstone of the stable and predictable regulatory framework investors have come to expect and rely on. However, ENWL argued that there remains an issue with how a notional company is defined, and whether a one-size-fits-all, broad-brush approach, remains fit-for-purpose in a rapidly evolving energy framework. ENWL stated that it was firmly of the belief that this needs a fundamental review with consideration of a new "small theoretical company" construct that ensures that all companies (including relatively smaller notional network companies) are appropriately funded for efficiently incurred costs, be they network investment,

operational or financing costs. ENWL provided a confidential report by KPMG, 'Cost of Debt of RIIO-ED2' that discussed this point in more detail.

4.12 WWU stated that UKRN Recommendation 1 relates to WACC overall, and that WWU do not agree with the 'notional company' approach to setting a cost of debt allowance.

4.13 In relation to FQ11, stakeholders generally did not see good reasons to deviate from the notional gearing levels used in RIIO-2. TOs did note that notional gearing levels could be reviewed by Ofgem following receipt of business plans, and that there may be justification for increasing the notional gearing assumptions where significant investment and equity raises were implied, although they noted that this may provide a 'counter-intuitive' signal to the market and may threaten financeability assessments.

4.14 Some networks suggested that the mix of debt within the notional gearing assumption would need to be considered alongside decisions in relation to addressing the inflation leverage effect. We discuss responses to this issue in more detail in Section 2.

4.15 In relation to FQ12, there was no consensus amongst stakeholders. Several network companies agreed with the proposal, citing potential benefits such as being more intuitive and in line with other modelling assumptions if the capital structures remain constant and net issuance of debt and equity vary in order to achieve this. However, companies noted that clarity on how this would be modelled and what assumptions would be made on metrics such as dividend payouts would need to be consulted on and agreed before any decision was made. Other network companies disagreed with the proposal. They raised issues including inconsistency with past approaches and a potential increase in complexity. They suggested that a more simple and effective solution may be to update the tolerances within the current modelling approach.

SSMD decision and rationale

4.16 Given a lack of evidence to suggest that gearing levels of the notional capital structure should change, and subject to further assessment of business plans, we are minded to set the gearing levels of the notional capital structure in line with RIIO-2. This means a notional level of gearing of 55% in ET and 60% in GD and GT.

4.17 Stakeholders were broadly supportive of our proposals in relation to using a notional capital structure to set the WACC and to base notional gearing levels on

a range of relevant evidence. We note WWU's ongoing objection to the use of the notional company capital structure approach to setting allowed returns, and that this forms part of an ongoing appeal of the CMA's decisions on this matter (as part of WWU's appeal of RIIO-2 decisions to the CMA). Subject to those ongoing legal proceedings, we note our approach was considered by the CMA and found to be 'not wrong'.[102] Specifically, the CMA stated that it considers that the use of a notional company approach does properly have regard to the need to ensure that licensees are able to finance their activities, bearing always in mind GEMA's principal objective of protecting the consumer interest.[103]

4.18 We do not currently consider there to be a need for a smaller company notional capital structure, as argued for by ENWL. We note that in RIIO-2, smaller companies received an uplift to their borrowing costs to reflect potential higher costs at smaller companies, and we consider such targeted measures to be a more appropriate methodology for addressing ENWL's concerns. As ENWL is not subject to this price control.

4.19 There were mixed views expressed on the issue of maintaining a constant notional gearing assumption throughout the price control. Given the potential technical advantages and pitfalls identified by stakeholders, we propose to continue to engage with stakeholders on the merits of the various approaches via our Price Control Financial Model (PCFM) expert workshop series. We will make a firmer decision on this issue at DDs, based on this further engagement.

4.20 While the SSMD 'early view' of the cost of equity focuses on a central 60% gearing case in order to present metrics consistently, for DDs we will set appropriate equity, debt and WACC allowances for ET companies in line with a 55% notional gearing level (assuming that we decide to again apply a 55% notional gearing level for ET companies). We expect to follow the same process used to assess the cost of equity at 60%, regearing our asset beta estimate to a 55% notional level of gearing following the process described in paragraph 3.221.

[102] CMA (2021), GD&T Licensees vs the Gas and electricity Markets Authority, Final Determination – Volume 3: Individual Grounds, paragraph 14.260.
[103] CMA (2021), GD&T Licensees vs the Gas and electricity Markets Authority, Final Determination – Volume 3: Individual Grounds, paragraph 14.81.

5. Financeability

Introduction

5.1 Ofgem has a statutory duty to have regard to the need to secure that companies are able to finance the activities which are the subject of obligations imposed by or under the relevant legislation.[104] The assessments we perform to discharge this duty are often referred to as assessments of 'financeability'.

5.2 We assess the financeability of energy networks on the basis of an efficient licensee adopting the notional capital structure (the notional capital structure is described at paragraphs 4.3 and 4.4). This approach is critical to ensuring that consumers are protected from risk associated with actual financing decisions that licensees and their shareholders have made. As with previous price controls, we consider it appropriate that the risks and rewards arising from financing decisions reside with equity investors.

5.3 The energy networks operate large portfolios of long-life infrastructure. This type of infrastructure is well suited to debt-based financing. It is assumed that 55-60% of our notional capital structures for the networks is derived from debt financing, under the notional capital structure. This is a level which balances efficient financing costs with the alignment of interests and the financial resilience that comes from significant levels of equity capital.

5.4 Debt capital and equity capital have different characteristics. Most notably, debt capital typically comes with explicit service costs in the form of interest on loans or coupon payments on bonds. In general, these debt service costs cannot be avoided or changed without significant additional costs. Equity financing costs are less tangible and more flexible. For example, investors may choose to forgo dividend returns in a period if a company requires that capital to fund growth or to improve financial resilience.

5.5 In addition, the allowed return element of the price control has typically been set in 'real' or inflation-adjusted terms, with investors earning the inflationary element of their return through the annual indexation of the RAV. This means that companies receive an allowed return on capital that is in real terms but often

[104] Ofgem's principal statutory objective is to protect the interests of existing and future gas and electricity consumers. Ofgem also has a range of secondary duties including its duty to have regard to the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed on them (See section 3A(2)(b) of the Electricity Act 1989 and section 4AA(2)(b) of the Gas Act 1986).

have large proportions of their debt servicing costs that are set in nominal terms. This can be problematic if, for example, debt costs have been historically high while current required returns on equity are lower.

5.6 Combined, these issues lead the financeability assessment to focus primarily on whether the price control package in-the-round puts licensees (at the notional capital structure) in a position where they can service reasonable debt costs and maintain financial metrics that would be associated with an appropriate credit rating range. As a result, regulators often use calculations based on the metrics and methodologies used by the major credit ratings agencies, in particular Adjusted Interest Cover Ratio and Funds From Operations over Net Debt when conducting their financeability assessments.[105]

5.7 As there are, in general, no strictly unavoidable cash costs associated with equity financing, regulators have tended to use the assessment of the cost of equity and the setting and cross-checking of the allowed return on equity as the primary tools in assessing equity financeability. A related concept is equity 'investability', which we discuss in more detail in the cost of equity section from paragraph 3.228.

Our approach for RIIO-3

SSMC summary

5.8 In order to assess debt financeability, we proposed to adopt an approach similar to that adopted for RIIO-2. We noted that we intend to conduct an in-the-round assessment that targets an efficient licensee adopting the notional capital structure broadly achieving an investment grade credit rating. Within this assessment we stated we plan to consider:

- financial projections from our financial model(s);
- the implied Moody's methodology rating (as this is the most transparent and therefore replicable methodology of the three rating agencies that we currently rely upon);
- the strength of quantitative metrics for credit quality, particularly those emphasised by credit rating agencies or that are under pressure;

[105] Credit ratings by agencies such as Moody's, S&P Global and Fitch are based on licensees' actual capital structures. As the financeability assessment is based on the notional capital structure, the ratings assigned by the major credit rating agencies cannot be used for financeability assessment purposes.

- the strength of other metrics and qualitative factors; and
- stress testing results.

5.9 We also noted that our financeability testing should consider financial ratios on the basis of both baseline totex allowances and scenarios where there could be additional totex allowed through variant ex post expenditure.

5.10 Incremental improvements we suggested included:

- Conducting longer-term analysis beyond the immediate price control via economic form modelling, as we have previously done;
- changing the way we calculate simulated credit ratios (for example, using the forecast sector average cost of debt rather than the cost of debt allowance;
- including additional credit ratios in our analysis.

5.11 We noted that we do not consider 'aiming-up' of the allowed return on capital to be in consumers' interest. In the event financeability constraints are identified, we could consider a number of financeability 'levers' could include, but are not limited to:

- reducing the dividend assumption, if appropriate; and
- adjusting capitalisation and/or regulatory depreciation rates.

5.12 We asked one consultation question that related to debt financeability in RIIO-3. This was:

- FQ13. What, if any, improvements should Ofgem make to the assessment of financeability in the next price control?

Summary of consultation responses

5.13 The network companies generally did not provide evidence against our financeability proposals, although most had views on how the assessment of financeability could be improved, which we summarise below.

5.14 The majority of network companies advocated for a longer-term assessment of financeability, particularly in the context of the proposed changes with respect to depreciation and the treatment of inflation in respect of the allowed return on debt. One GDN stated this was of particular importance given Ofgem's Net Zero duty and imminent Growth duty. The GDN also highlighted that the Credit Rating Agencies regarded a longer-term assessment positively. One GDN stated that the assessment should recognise the potential for changes for GDNs over the next

20-30 years. One GDN suggested that it would also capture the unintended negative effects of revenue advancement if this deferred underlying issues into the next price control. One TO argued that a longer-term analysis was appropriate as they expect the elevated level of investment to continue beyond the current period. One DNO suggested that long form modelling needed to be able to model future RAV and RAV depreciation reasonably, should capture a range of decarbonisation scenarios and that sensitivity analysis could be used for other uncertain inputs.

5.15 Six network companies supported an explicit minimum target credit rating with some highlighting a preference for Baa1. One GDN suggested that a Baa1 target rating was consistent with the financial resilience licence requirements. One TO argued that a BBB+/Baa1 rating was necessary to deliver the unprecedented level of capital investment required to transition to net zero. One TO stated that a change to financeability targets could damage investor confidence and inhibit their ability to deliver investment plans. Two network companies suggested that deviation below BBB/Baa1 would increase debt costs, and lead to higher costs for consumers. One DNO argued that a lack of clarity on target credit ratings would be at odds with Ofgem's stated focus on financial resilience and that the target credit rating for financeability should be consistent with the allowed return on debt.

5.16 The ENA stated that the financeability assessment should retain a test of licensees' ability to maintain a strong investment grade credit rating. One GDN stated that the review should include a review of projected levels of a range of financial ratios.

5.17 Three network companies supported the modelling of additional financial metrics especially those preferred by S&P and Fitch. One DNO stated there should be higher weighting of certain metrics which have greater influence over the Credit Rating Agencies' assessments. One TO stated that alternative metrics used by other agencies may be impacted by changes to fast money and that it would be inconsistent for Ofgem to require two ratings and not model other credit agency metrics.

5.18 Six network companies suggested that stress testing should be more rigorous with a wider range of scenarios adopted. The ENA highlighted the importance of testing financeability against credible risk scenarios including investment funded via uncertainty mechanisms and sensitivity to variations against key financial forecasts. One DNO suggested the scenario should cover a full range of plausible outcomes under Totex uncertainty mechanisms. Three GDNs suggested that

scenarios should include macro-economic and cost/performance scenarios. One TO company stated it was necessary to ensure that the efficient company assumed for the financeability assessment was a realistic benchmark. The TO highlighted the importance of the estimation of efficient costs in particular. One DNO suggested that Ofgem should work with companies to develop credible downside scenarios.

5.19 One GDN stated that changes in notional company assumptions need to be justified and subject to an impact assessment.

5.20 One GDN requested consideration of the impact of financial resilience proposals on how Ofgem approach and conduct the financeability assessment.

5.21 One GDN requested clarity on how we would treat financeability driven revenue advancements (such as adjusting capitalisation or depreciation rates) in the event that credit rating agencies did not consider these adjustments improve credit ratios. Three network companies expressed reservations on the use of revenue advancements to address financeability issues. The companies cited one or more of the following factors: that levers should not be used to support a return deemed inadequate to attract investment, that the financeability assessment would no longer provide a top-down cross-check to revenue allowances, that the use of the levers could have a detrimental effect on future periods and that the value of companies' asset bases will become detached from the underlying physical infrastructure.

5.22 One GDN suggested that, given that certain policies such as nominal allowance for fixed rate debt and depreciation may impact credit ratios, it is important that this is discussed with credit rating agencies to understand how they will respond to such impacts. The company suggested that any resultant ratio improvements should not be incorporated until the credit rating agency treatment is clear.

5.23 One TO highlighted that nonfinancial rating inputs may be adjusted in the Moody's scorecard; examples could include the complexity of the capital programme for RIIO-3. The ENA stated that the assessment should include consideration of how credit ratings may evolve.

5.24 One TO suggested we consider the impact of unintended consequences from policy changes elsewhere on credit ratings. The TO highlighted that credit rating downgrades would foster negative sentiment from investors and increase costs for consumers.

5.25 One TO submitted that if an equity cost of carry is not provided for, debt financeability testing should assume no equity injections over the price control period.

5.26 One DNO has also proposed the application of a small notional company construct in respect of financeability. The DNO argued that as a small company it is exposed to additional costs and risks relative to the average DNO and so the use of a sector average cost of debt was also therefore inappropriate for use the financeability assessment. This concept is considered in paragraph 4.18.

5.27 One GDN did not support the proposed approach to financeability citing the grounds it submitted to the CMA in its appeal of the RIIO-2 price control. The company argued that the financeability duty is not subordinate to the principal objective, it is a duty of outcome and that Ofgem should consider the financeability of individual companies, rather than a notional approach.

5.28 Citizens Advice argued that the ED2 RoRE range downsides used when assessing financeability were implausible and too extreme. Citizens Advice suggested that RoRE ranges used in the financeability assessment are devised based upon P90 and P10 confidence intervals using historic data.

SSMD decision and rationale

5.29 We will proceed with the proposal to incorporate long form modelling into the financeability assessment, which was generally supported by the network companies. We are currently evaluating two approaches, economic form modelling (which was utilised in the ED2 price control)[106] or an extended form of the PCFM.

5.30 We agree that the extended modelling could provide useful insight to consider how RIIO-3 policies would be expected to impact long term debt servicing. We consider that a limitation of long form modelling is the assumption that price control policies would be broadly consistent over the long term, which may not be realistic particularly if financeability constraints are identified. Given the compromises and simplifying assumptions that need to be adopted in such modelling, it may be appropriate to use extended modelling as a cross-check to our primary methods. We will engage further with stakeholders on this matter in

[106] ED2 FD Finance Annex Document paragraphs 5.60-5.63
RIIO-ED2 Final Determinations Finance Annex (ofgem.gov.uk)

the coming months, and will discuss our decisions on these options in more detail at DDs.

5.31 We will retain the in-the-round assessment that targets each licensee, adopting the notional capital structure and assuming efficient performance, broadly achieving comfortable investment grade credit quality. In the paragraphs below, we address the issues raised by stakeholders on these issues.

5.32 The network companies have argued that we should target credit metrics in line with BBB+ (S&P) and Baa1 (Moody's) ratings when assessing financeability. We do not currently consider there to be evidence of a need to target a particular credit metric levels across our assessment of financeability. We note that in their own work, credit rating agencies will not require all specific 'target' metrics to be met in every year, and instead take an in-the-round assessment of credit worthiness. We anticipate taking a similar approach.

5.33 In terms of the metrics achieved (and the rating implied) across the whole price control period, there may be circumstances in which the consumer costs associated with the adjustments required to achieve BBB+/Baa1 ratings outweigh the potential costs of accepting a slightly lower credit rating for a period. We consider that managing the price control to meet the specific credit metrics associated with a BBB/Baa1, either by year or over the control period, may not be in the interests of consumers and would not be required to meet our duties to have regard to the need to ensure that network companies can finance their activities. We also note that a BBB/Baa2 investment grade rating (rather than the higher BBB+/Baa1 rating suggested as required by the Network companies) would meet associated licence requirements.

5.34 Our proposal to broaden the credit ratios modelled within the exercise was broadly supported. We consider that this improvement aligns to our in-the-round approach to assessing financeability - which is not reliant on a single credit rating agency methodology. We will continue to use the Moody’s methodology scorecard to create implied ratings as this is the most transparent and therefore replicable methodology of the three rating agencies that we currently rely upon but will seek to model and analyse key credit ratios utilised by S&P and Fitch.

5.35 In our modelling of credit ratios we will substitute the assumption that debt costs align to the allowed return on debt with forecast efficient average debt costs utilised in the calibration exercise. We consider that this adjustment will allow a more accurate assessment of network companies' ability to fund efficient debt costs (at the notional capital structure).

5.36 We will continue to consider key credit rating agency methodologies and other relevant information on the approach utilised in the determination of credit opinions in our assessment of financeability and this will include changes to methodologies or opinions in response to regulatory policy changes or structural trends within the sectors. We intend to continue our engagement with the credit rating agencies throughout the RIIO-3 consultations. We note that the different credit rating agencies vary in their treatment of policy actions undertaken. Areas where the approaches differ include the treatment of actions which advance revenue such as changes to capitalisation or depreciation rates and may also include other policy areas such as a change to the treatment of inflation in respect of the allowed return on debt. We therefore do not believe that an approach which applied a strict application of one credit rating agency interpretation would be consistent with our adopted in-the-round assessment.

5.37 In paragraph 3.337, we stated that we do not currently consider there to be a need to provide specific allowances for large cost of carry costs associated with equity issuance. We have also concluded that the absence of an allowance does not require adjustments to the financeability equity injection assumption on the same basis.

5.38 We received no evidence arguing against the use of stress tests, although stakeholders had views as how these should be calibrated. We intend to carry out our own scenario testing devising plausible downside scenarios based on a:

- bottom-up assessment of potential outturn performance under the FD package (including consideration of plausible scenarios of ODI performance and Totex overspend - when calibrating the plausible scenarios this will include consideration of decisions made elsewhere in the price control such as cost and historical performance);
- utilising base case and higher Totex scenarios (to reflect the role of uncertainty mechanisms); and
- historical performance and regulatory determinations.

5.39 We do not consider that we can accurately produce mechanistic probability-based scenarios. However, we will seek to contextualise the assumptions (including where relevant against historic performance) and basis of the adopted scenarios to enable stakeholders to interpret the results appropriately. We will provide scenarios that represent justified plausible and reasonable downsides.

5.40 The common scenarios set out in Table 15 below must be included in companies' first business plans (along with any individual company scenarios). These include

macro-economic scenarios. These are detailed in the business plan guidance. We also encourage network companies to set out the scenarios they consider to be appropriate given the assessment of risk and we will also consider suggestions for our scenarios submitted via business plans.

Table 15: Ofgem business plan scenarios

Factor	**Ofgem Proposed Level (relative to working assumption level)**
Macro Scenarios	
Interest rate scenarios	±2% compared to forward implied rates as per the base case in each year (for RFR, Libor/SONIA and iBoxx inputs)
CPIH scenarios	±2% in each year
RPI-CPIH divergence scenarios	±0.5% from assumed RPI/CPIH wedge
Performance Scenarios	
Totex performance	±10%
RoRE	±2% compared to base assumption
Other Scenarios	
Proportion of inflation linked debt	±10%[107]
Distribution reduction (TOs only)	Assumed dividends as a % of equity = 1.5%

5.41 We believe it is appropriate to retain the option of revenue advancement options, such as adjusting capitalisation or depreciation rates, to address financeability challenges. These measures can address short-term cashflow shortfalls in a way that is NPV neutral to the consumer. Other measures, specifically increasing allowed returns on equity, would represent a permanent transfer of value from consumers to companies to address a short-term cashflow issue. We note that some credit rating agencies may not recognise the impact on certain cashflow credit metrics from such actions, but we do not consider that applying a strict application of a single credit rating agency interpretation is consistent with the in-

[107] Compared to notional company assumption of 30% for notional company analysis and compared to actual company proportion forecast at end of RIIO-2 for actual company analysis

the-round approach adopted. We also do not consider that a short term cashflow shortfall for debt financeability would evidence an inadequate return.

5.42 We do not currently consider that the RIIO-3 financial resilience proposals necessitate any modification to the financeability assessment. We regard the concepts of financial resilience and financeability to be distinct. The financial resilience measures are in place to restrict actual company actions which may be detrimental to consumers, while debt financeability seeks to ensure that, when all the individual components of our determination are taken together, an efficient operator adopting the notional capital structure is able to generate sufficient cash flows to meet its financing needs.

5.43 We disagree with the network company suggestion that we should adopt an approach whereby financeability is assessed on the basis of individual network company financing structures and costs. This approach would have the effect of exposing consumers to the financing decisions of their local monopolies. We continue to view network company investors and management as best placed to manage the risks and rewards associated with deviations from the notional capital structure. We note that the notional approach to assessing financeability was comprehensively examined by the CMA in the appeal of the RIIO-2 price control. The CMA found[108] 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 (the 'financeability duty'), bearing always in mind GEMA's principal objective of protecting the consumer interest.[109]

[108] The CMA's findings on this issue are subject to ongoing legal proceedings. Our views here are subject to these proceedings.
[109] Final determination Volume 3: Individual Grounds document paragraphs 14.73-14.96 Final determination Volume 3: Individual Grounds (publishing.service.gov.uk)

6. Financial Resilience

Introduction

6.1 Financial resilience is defined as regulated licensees having sufficient financial safeguards or headroom so that they can avoid and/or manage the risk of financial distress or failure if there is a downside shock. The extent of this risk and potential impact is dependent on factors including the size of the shock, the level of headroom, the proximity to consumers and any mitigating arrangements, such as ringfencing protections.

6.2 Companies and their shareholders have significant discretion to make decisions about their financing and capital structure within the boundaries set by the price control, their licence and company law. We expect companies to manage their own financial risks and for shareholders, not consumers, to directly gain or lose as a consequence of their choices.

6.3 The purpose of financial resilience measures is to protect consumers from the adverse consequences of financial distress or failure, which include the higher costs of capital and the potential impact on quality of service associated with companies with poor resilience. These companies may also potentially be at risk of licence breaches, default or administration.

6.4 The aim of the policy tools we have is to provide early warning of financial distress, thereby allowing Ofgem and the company to consider potential mitigations and/or restrict certain activities in the event of financial deterioration. The intention is to make failure less likely and/or increase the chance and quantum of recovery for the benefit of consumers.

6.5 As the regulator we should always be vigilant and look at best practice across the regulatory landscape for measures that improve existing financial resilience requirements to protect against the downsides that consumers could bear, but which do not introduce disproportionate incremental costs.

Our approach for RIIO-3

SSMC summary

6.6 In the SSMC Finance Annex financial resilience section we outlined the existing preventative financial resilience measures contained within Licensees' licence agreements, the purpose of these measures and also the potential shortfalls or disadvantages.

6.7 The potential shortfalls we identified were:

- the external credit rating agencies' rating criteria and obligations are different from Ofgem's duties and financial resilience requirements;
- the flexibility within the rating boundaries, along with information asymmetry, can mean that companies are able to take aggressive financial risks that might be contrary to the consumer interest;
- it is untested, and therefore not entirely clear, as to how effective the suite of early warning indicators is. For example, a 'reasonable endeavours' or 'appropriate measures' threshold is untested and could create unnecessary uncertainty for investors and consumers;
- provision of information on dividend rationale, in particular how it relates to customer metrics, service and satisfaction, financial outlook and reporting information related to financial resilience, has been variable in quality; and
- board certifications on availability of resources are informed by a short term 12-month forecast, which provides minimal visibility into the longer-term viability of the licensee.

6.8 We also considered financial resilience measures from other regulated industries (water and airports) and a different energy sector (retail supply) that might have some value when considering financial resilience for GD&T Licensees.

6.9 In the SSMC we proposed:

- Updating the RFPR RIGs information requirements to gather more information on the Licensees' distribution policies and also the wider corporate group structure to understand the corporate group's reliance on Licensee distributions to meet debt service requirements.
- A suite of financial resilience measures to be included in the Licence conditions:

Table 16: SSMC proposed financial resilience measures

Measure	Rationale
1. Amend the licence condition to "require" licensees to maintain more than one investment grade rating rather than "use reasonable endeavours" or "all appropriate steps".	* Brings the licence in line with comparable UK regulated sectors. * Provides greater certainty to investors around the condition than the current "reasonable endeavours" language.
2. Amend the dividend lock-up trigger to be the earlier of reaching BBB- with a negative watch/outlook and 80% regulatory gearing.	* 80% gearing is considered to be an inappropriate gearing level and not in consumers' interests. * A gearing-based trigger is simpler, more transparent and unlikely to impose material additional costs on companies and consumers than lifting the BBB- (neg) requirement by one notch.
3. Amend the Availability of Resources requirement for board certification to require that the licensee states that, based on agreed assumptions, it has sufficient financial resources to cover the entire price control period or a minimum of three years ahead.	* Increases visibility into the longer term viability of the licensee and its ability to deliver its statutory and regulatory commitments for the entirety of the price control period. * Stronger early warning signal for risks to financial resilience which affords Ofgem to intervene more promptly if appropriate.

Source: RIIO-3 SSMC Finance Annex, Section 6.

6.10 The RFPR RIG amendments have been taken forward as part of the RIG consultation process and are subject to a separate consultation including the ED companies, outside of the GD&T RIIO3 process.

Proposed Financial Resilience Measures

SSMC Summary

6.11 In the SSMC we asked:

FQ15. What is your view on the proposed financial resilience measures? Are these appropriate and/or are there any other measures that you would propose?

Summary of consultation responses

6.12 The majority of network companies were against some or all of the proposed measures.

6.13 The network companies which were against all or a majority of the measures commented that there:

- was no evidence of financial resilience issues in the GD&T sectors and therefore there is no need to adjust existing measures;
- was no evidence that the cost to the Licensees of implementing the measures is outweighed by the benefits - there needs to be a tangible case with real benefits to new regulation, including an impact assessment, in line with the Principles for Better Regulation;
- needs to be evidence of a clear market failure that needs to be remedied through new additional measures;
- the measures would (i) restrict the ability of Licensees to adopt the optimum capital structure and (ii) affect allocation of value across debt and equity. They might also have the unintended consequence of deterring equity investment.
- existing measures alongside Statutory Reporting Requirements, independent audit requirements and the Companies Act of 2006, have been successful in guaranteeing a resilient industry.

6.14 One GDN commented that Ofgem has stated a view of prudence in RIIO-2[110] and it has to provide a rationale for changing this view.

6.15 Some respondents thought the proposed measures were fair overall and were either in line with other regulated markets or not unduly onerous on the Licensees, but requested more detail as to how they would be implemented and work in practice.

6.16 Some respondents favoured some of the measures but not others, but there was no clear indication of one measure being more favourable than any other taking into account all of the responses. We will look at the responses to the measures individually below.

SSMD decision and rationale

6.17 We have decided to introduce the measures laid out in the SSMC. We address issues on each measure and the individual decisions in the sub-sections below.

6.18 Financial resilience forms part of Ofgem's Multi-Year strategy, which was issued on 28th March 2024, and includes the aim of "evolving existing financial resilience

[110] RII0-2 final determination 3rd February 2023 section 2.43

measures to ensure appropriate levels of protection are maintained for consumers".[111]

6.19 Financial resilience measures are more likely to be effective when proportionate measures are put in place in advance to ensure consumer harm is prevented, rather than after-the-event responses to consumer harm. To do this effectively, we must consider a wide range of evidence, including historic performance, outlook, and evidence from analogous markets.

6.20 We have seen some evidence of the potential for harm in the sector in the last 12 to 18 months. Two out of the nine network companies have newly leveraged MidCo companies, which have been used to inject equity into licensee companies, and one company had to provide a financial resilience report to Ofgem due to its vulnerable credit rating and outlook.

6.21 Whilst we recognise that the MidCo's are not themselves regulated entities, we also recognise that group corporate leverage and group corporate financial policies are considered by credit rating agencies in assigning ratings to licensees, and so by that process have an impact on the credit worthiness and financial resilience of the licensee that we regulate directly. For example, this is clearly articulated by Moody's in its Rating Methodology report for Regulated Electric and Gas Networks issued in 2022, where Moody's states: "Even where meaningful regulatory barriers exist such that ratings of individual regulated entities vary more widely from the consolidated credit profile, the credit quality of the parent still impacts an individual network's ratings in most circumstances. Therefore, while the credit analysis of individual regulated networks may have greater weight in our ratings, our assessment of parent credit quality is also important." Some considerations Moody's gives for parental support are, the parent's financial capacity and strategic incentives to provide support to the issuer in times of stress or conversely, if the parent puts a high dividend burden on the issuer.

6.22 On the outlook for the energy network sector, we note stakeholder feedback across this consultation that suggests that the upcoming price control periods are likely to feature greater uncertainty than past controls. For example, in the Frontier Economics report considering equity investability in RIIO-3,[112] it states "importantly, networks are entering into a phase of their development that is far

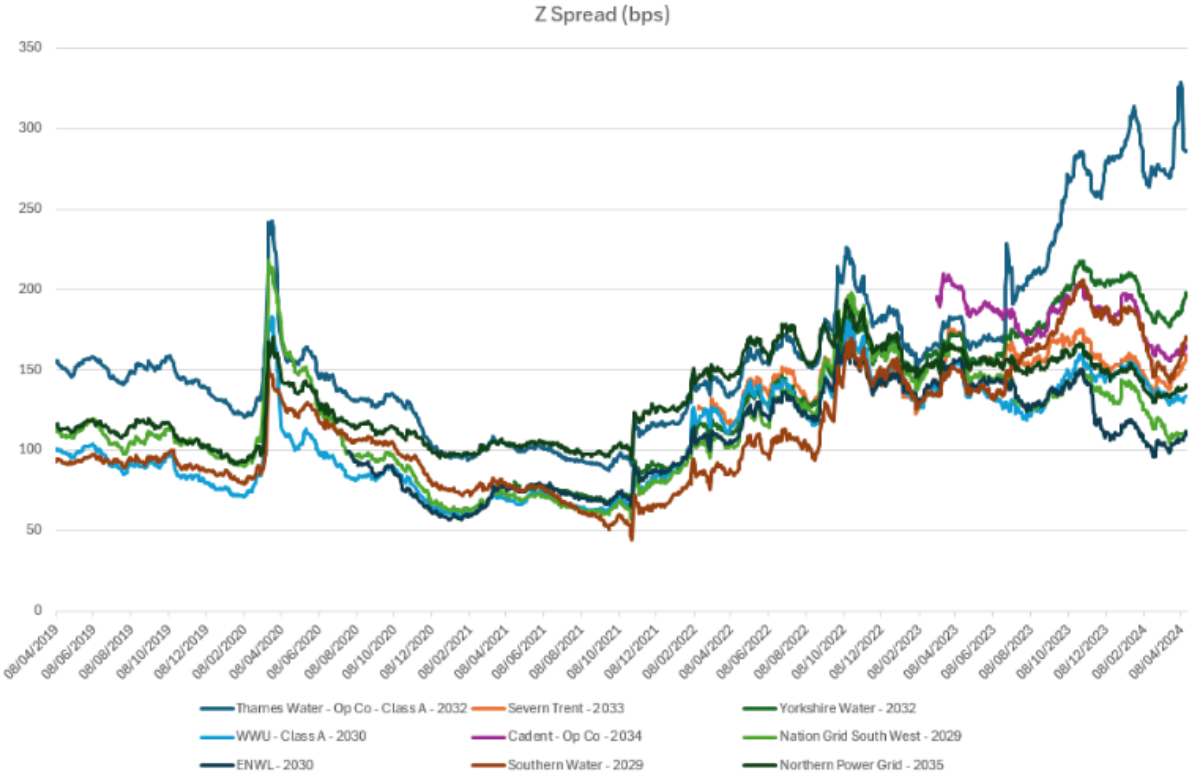
[111] Section 10.2 and under the Consumer Interest Framework, pg 19: Ofgem's multi-year strategy.
[112] Frontier Economics 2024, Equity investability in RIIO-3, A report prepared for the ENA.

from 'business as usual', as they strive to support decarbonisation. They are facing huge challenges, and materially heightened risk in the process."

6.23 Whilst we plan to largely mitigate any additional risks in RIIO-3, some respondents highlight the importance of understanding future risks and challenges as well as examining the past to set price control policy.

6.24 The water sector is viewed as an analogous sector when we consider the investor risk and returns. Thames Water Utilities Ltd ("Thames") has some well publicised financial challenges, which we don't intend to review in detail here, but which have resulted in the widening debt credit spreads for Thames compared to other water and energy companies, even within the investment grade rating parameters, which is not aligned with the consumers' interest. This dynamic is shown in Figure 12 below.

Figure 12: Thames bond Z Spread in bps vs comparators



Source: Ofgem analysis of Bloomberg data

6.25 We will look at any potential cost implications for the measures in detail in the review of responses in the individual measures. In general, we believe that the measures we have outlined are the minimum expectation in the market for GD&T companies, and therefore cost neutral, as: (i) all of the GD&T companies have two investment grade credit ratings with headroom to sub-investment grade; (ii) all of the licensees have gearing below 75%; (iii) where we see gearing

covenants that prevent distributions in licensee's public bond documentation, these are set at levels of 72.5% on a net debt basis and 77.5% on a gross debt basis; and (iv) there is a reasonable expectation that companies maintain a long term financing plan, at least for the full price control period, that includes reasonable assumptions around the availability of resources, as evidenced by investors' willingness to provide long-term debt (>10 years).

6.26 In relation to GDN feedback about Ofgem acting with "prudence" with regard to financial resilience measures, the commentary in paragraph 2.43 of the RIIO-2 Final Determinations regarding prudence is in relation to the cost of debt allowance and Ofgem not directing treasury strategy with the statement that "There is a licence obligation in place relating to rating and it is this that could be expected to protect consumers against imprudent or risky choices from networks.".[113] We see no inconsistency with this statement in reviewing and amending those obligations to ensure that our obligation to protect consumers is met.

6.27 Finally, whilst we welcome the protections afforded by the Companies Act 2006 and the development of accounting and audit standards, we note that these have not prevented the occurrence of financially stressed companies in regulated sectors, or corporate administrations and insolvencies across other public or private industries.

Measure 1

SSMC summary

6.28 In the SSMC we proposed:

- Measure 1: Amend the licence condition to "require" licensees to maintain more than one investment grade rating rather than "use reasonable endeavours" or "all appropriate steps".

6.29 There are two proposals contained within the above measure:

- (i) to amend the licence condition to "require" from "reasonable endeavours"; and
- (ii) to maintain "more than one rating" rather than just one.

[113] RIIO-2 Final Determination Finance Annex. RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)

Summary of consultation responses

6.30 Respondents had different responses on each proposal so we will outline those responses on each individual proposal starting with the requirement for an investment grade credit rating.

(i) to amend the licence condition to "require" from "reasonable endeavours"

6.31 The majority of network companies stated that a requirement for a credit rating is unfair as the rating decision is outside of their control, and a couple of respondents gave an example that a regulatory action could cause a downgrade in a way that the licensees could not influence or control.

6.32 Some network companies were neutral on including a requirement for a credit grade but highlighted the need for the financeability targets and funding arrangements to cover this increased obligation.

6.33 One respondent stated that Ofgem's current requirement for a financial resilience report after certain credit rating downgrade triggers are met, gives a view on a licensee's financial position and negates any asymmetric information risk.

6.34 One respondent was supportive of the requirement.

6.35 Some respondents argued that Ofgem should consider using the Fitch Senior Unsecured Rating, rather than the Issuer Default Rating as the credit metric for Fitch, as it is in line with the Moody's and S&P Issuer Credit Rating as it considers the potential debt recovery rather than just issuer default. This is in line with the Ofwat approach.

(ii) to maintain "more than one rating" rather than just one

6.36 Some of the network companies argued that one rating was sufficient and introducing a second rating requirement would introduce more cost.

6.37 Some of the network companies who argued against a requirement for a credit rating conditionally supported having two ratings, but stated that:

- The Financeability test should be expanded to incorporate more rating metrics
- There would be additional costs to the businesses.

6.38 Some network companies were neutral on having two credit ratings, stating that they already carry two investment grade credit ratings.

6.39 One GDN agreed with two ratings but stated that Ofgem should take the Class A senior rating, instead of the issuer credit rating, when there is no Class B debt.

SSMD decision and rationale

6.40 We have decided to proceed with Measure 1 such that each licensee must ensure that they have more than one investment grade issuer credit rating. Our rationale for following this approach is set out below.

6.41 We understand that the credit rating is not entirely within the control of the licence entity, with the potential for government or a regulator to influence the credit rating.

6.42 However, the licensee through its financial decisions and operational performance has the most direct control over the credit rating, and we can see through the historical performance that licensees have been the main influence on credit ratings rather than the regulator.

6.43 It is also important to note that any licence breach would lead to enforcement by Ofgem utilising Ofgem's enforcement guidelines.[114]

6.44 Under these guidelines: "Enforcement action may include issuing directions, making orders, or infringement decisions to bring an end to a breach; remedy the loss or harm caused by a breach; imposing financial penalties; or obtaining voluntary redress payments. It can also include accepting commitments or undertakings relating to future conduct or arrangements. Alternatively, the Authority may decide not to take further action."

6.45 Therefore, enforcement does not necessarily lead to a binary decision; but can lead to a range of different outcomes depending on the particular facts and circumstances associated with a case.

6.46 We agree with the request to include further credit metrics from rating agencies in the financeability test - please see Section 5 for further discussion on this.

6.47 We are not convinced that access to the financial resilience report negates any asymmetric information risks. The financial resilience report is a useful tool for Ofgem to understand the licensee's financial position, outlook and plans at a time of potential financial stress. However, despite the details of the report Ofgem does not have the information to challenge key aspects of the licensees' financial resilience plans - for example, what is a reasonable level of cost cutting of head office costs? What is the cost-effective way to manage a complex RPI-linked swap portfolio that is also in the consumer's interests? This again highlights the

[114] The Enforcement Guidelines | Ofgem

difficulties of understanding what it means for a company to be using "reasonable endeavours" to maintain an investment grade credit rating.

6.48 We were also not convinced by the requests to amend the definition of issuer credit rating to include the Fitch senior debt rating rather than the issuer default rating.

6.49 We understand the argument that respondents make that the Fitch senior debt rating takes into account debt recovery and therefore is equivalent to the S&P issuer credit rating or Moody's issuer rating. However, we believe that it is in the consumer's interest that they are protected from a regulated entity's risk of defaulting on its debt as a first priority.

6.50 A default on debt by a regulated entity could cause significant consumer harm: significant increase in the cost of debt; potential impact on debt and equity investment; spillover of debt and equity risk concerns into other regulated companies and sectors. Any recovery that the debt holders might get following a default is secondary. It is worth noting that this recovery is ultimately paid for by the consumer.

6.51 The difference between the rating agencies' analysis in fact highlights the difficulties in just relying on the rating agencies' analysis and outcomes to monitor and control financial resilience. The rating agencies are rating the companies based on the potential for default and in some cases debt recovery, whereas Ofgem requires analysis of financial resilience to protect consumer interests.

6.52 There is also no straight equivalence between the rating agencies and their analysis. So including/excluding recovery may have different rating impacts depending on the rating agency. As an example, S&P say that they "may assess terms…which could affect ultimate payment in the evert of default".[115] A may is not a do and demonstrates the subjectivity in the analysis.

6.53 We see no evidence of the increase in costs associated with these measures, either making it a requirement for an investment grade rating or having more than one rating.

6.54 We note in the water sector that Ofwat implemented an obligation that licensees "must ensure" they maintain an investment grade rating in 2019 and a requirement for two investment grade ratings in 2022 and we have seen no

[115] S&P website 05/04/24

evidence of impacts on their beta or cost of equity because of those licence conditions. We also note that all the licensees currently have two investment grade credit ratings.

Measure 2

SSMC Summary

6.55 In the SSMC we proposed:

- Measure 2: Amend the dividend lock-up trigger to be the earlier of reaching BBB- with a negative watch/outlook and 80% regulatory gearing.

Summary of consultation responses

6.56 Some network companies were neutral on the measure as it wouldn't have much impact on their business in practice.

6.57 Some network companies wanted further rationale for the measure, in particular stating that the 80% gearing level is not in line with the Moody's investment grade methodology.

6.58 Three network companies agreed in principle but wanted more detail and transparency on how the level will be set now and in the future for equity investors.

6.59 Two respondents were against the measure stating that there is no evidence of consumer harm in the market and in addition it will have no material impact on resilience and impact investor confidence. One network company argued that it is unfair as the credit rating level is outside of its control.

6.60 One respondent preferred the gearing cap to the rating requirements as it was simpler without creating additional costs.

SSMD decision and rationale

6.61 We have decided to proceed with an amended Measure 2 and change the dividend lock-up trigger to be the earlier of reaching BBB- with a negative watch/outlook and 75% net debt to regulatory asset value. Our rationale for following this approach is set out below.

6.62 Some of the respondents stated that these measures will have no material impact on their financing strategy and therefore on financial resilience. It is not our intention for this policy to have an impact on current leverage, but to help prevent the potential for excessive leverage and to put in place early warning measures to control that risk.

6.63 As there is no material impact on the companies from this measure we also do not see any additional costs arising.

6.64 Excessive leverage, principally represented by high levels of net debt to RAV, can pressure credit strength as well as impair the ability to raise capital efficiently, invest in the network and maintain shareholder value.

6.65 Setting the regulatory gearing level is a matter of regulatory judgement as there is no objective analytical framework that is consistently applied to define what might be considered as excessive leverage in this sector.

6.66 In deciding to move the dividend block level from 80% as outlined in the SSMC to 75% for the SSMD we took account of the following evidence:

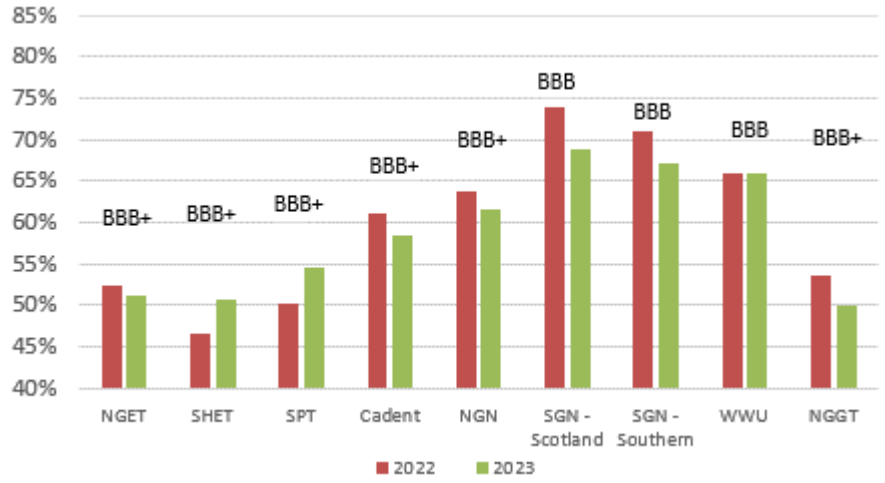
- (i) rating agency methodologies;
- (ii) debt market expectations; and
- (iii) analogous markets.

6.67 As highlighted by some of the consultation responses the 80% gearing level was not consistent with rating agency guidelines. The only evidence of a rating agency publishing the effect of gearing on their rating methodology we have is from Moody's. Moody's assign a weighting of 12.5% to gearing based on net debt/RAB on the following basis: "A" rating - 45% to 60%; "Baa" - 60% to 75%; and "Ba" - 75% to 90%. Due to the weighting, 12.5%, the broad categories, and also the fact that we are aware that Moody's use some judgement in their rating outlook (for example taking into account the ability of a company to de-lever within a certain timeframes), the gearing levels are not always equivalent to the final rating decision.

6.68 We reviewed evidence from the debt market as to expectations on the maximum gearing for GD&T companies. We reviewed seven of the latest public EMTN or bond prospectuses posted on the companies' websites. Where the companies had distribution blocking gearing covenants these were in the range of 72.5% on a net debt basis to 77.5% on a gross debt basis. Therefore 75% on a net debt basis provides for some headroom against current debt market expectations, with some companies already agreeing to block distributions below that level. We consider 80% to be too high compared to existing market precedents and we do not want to set any expectations that gearing could be higher than the existing market precedent.

6.69 This is also reflected in the existing gearing levels of the licensees, which sit below 75% on a net debt basis (including accretion):

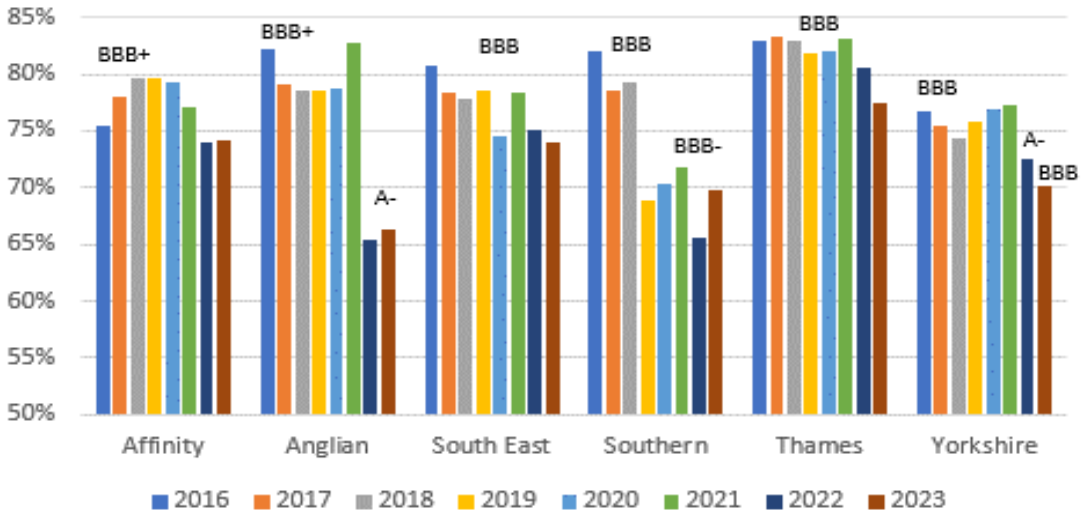
Figure 13: Gas Distribution, Gas & Electricity Transmission companies Net Debt to RAV and credit ratings[116]



Source: Ofgem analysis of PCFM data

6.70 The water sector is useful to review as a check of the gearing level against ratings as it shows the variability between gearing and credit rating but also that companies have sought to reduce their leverage below 75% in order to achieve an efficient debt cost and protect an investment grade rating:

Figure 14: Selected water companies net debt/RAV gearing[117]



Source: Ofwat monitoring financial resilience report

6.71 We consider the BBB- level with a negative watch/outlook for dividend lock-up trigger to be the very minimum level required for companies to retain cash and

[116] Ratings an Ofgem amalgamation of Moody's, S&P and Fitch. Note NGET and SGN Southern and Scotland provided no accretion for 2022, hence 2023 accretion was assumed.
[117] Ratings an Ofgem amalgamation of Moody's, S&P and Fitch ratings.

protect their investment grade ratings as they have an obligation to do under SSCA38, SLCB10, or SLC40 of the existing licences. We understand that the credit rating is not under the complete control of the licensee, however, as stated in 6.42 we believe that the licensee though its financial decisions and operational performance has the most direct control over the credit rating.

Measure 3

SSMC Summary

6.72 In the SSMC we proposed:

- Measure 3: Amend the Availability of Resources requirement for board certification to require that the licensee states that, based on the agreed assumptions, it has sufficient financial resources to cover the entire price control period or a minimum of three years ahead.

Summary of consultation responses

6.73 The majority of network companies were split between those who were conditionally supportive of the measure, as long as it did not lead to increased costs by forcing licensees to pre-fund for the period, and those who were against the measure as it would require licensees to pre-fund for the period.

6.74 Some respondents wanted more detail particularly around assumptions for future funding.

6.75 Some network companies stated that they did not see value in Ofgem having this information and that Ofwat did not require certification beyond 12 months.

SSMD decision and rationale

6.76 We have decided to proceed with Measure 3 and amend the Availability of Resources requirement for board certification to require that the licensee states that, based on the agreed assumptions, it has sufficient financial resources to cover the entire price control period or a minimum of three years ahead.

6.77 The intention of this condition is not to require licensees to pre-fund the entire price control period or for a minimum of three years ahead.

6.78 The intention is to retain the current requirement that the licensee certify that it will have sufficient financial resources and financial facilities to enable it to carry out its licensed activity for the next twelve months.

6.79 However, we propose to extend the certification from the period for 12 months to the later of the end of the price control period or three years, with the caveat that

for this period the licensee should set out any assumptions that the licensee has made in relation to the availability of financial markets for any financing or refinancing requirements, or assumptions around equity injections, in order to meet the licence obligations.

6.80 The information is useful for Ofgem and in the consumer's interest as it: (i) provides an early warning indicator in case the companies are using unrealistic or inappropriate assumptions in their medium-term forecasting to meet their licence obligations; and (ii) ensures that the directors are taking at a minimum a medium-term view of their financing requirements.

6.81 We anticipate that companies already budget to ensure that they have resources available, based on reasonable assumptions, for this time-period as part of their normal business planning cycles; therefore we see this requirement as a means to provide transparency on an existing process, rather than additional corporate actions for the licensees to make.

Protection against excessive leverage and financial risks

SSMC Summary

6.82 In the SSMC we asked:

- FQ16. Are there better ways to protect against excessive leverage and financial risks, in particular leverage via acquisition finance, by utilising existing powers rather than imposing new requirements in the licence?

Summary of consultation responses

6.83 Half of the respondents stated that the existing licence conditions and powers provide sufficient protections against those risks.

6.84 Some respondents stated that the existing licence conditions coupled with the new proposed measures will provide sufficient protections against those risks.

6.85 One respondent stated that companies should be required to look forward further than 12 months prior to declaring a dividend.

SSMD decision and rationale

6.86 The only new suggestion was to look beyond 12 months prior to dividend distributions; however we believe that the additional look forward added to the availability of resources certification should cover this requirement.

6.87 We will proceed with the new financial resilience measures as outlined above and based on current evidence believe that we should implement and test the sufficiency of those measures to counter the potential for excessive leverage and financial risks.

Leverage at the MidCo/HoldCo level

SSMC Summary

6.88 In the SSMC we asked:

- FQ17. For the SSMC we have not proposed dividend controls or dividend policy requirements. How should we think about protections to ensure that leverage at MidCo and/or HoldCo does not become disproportionately influential in decision making at the licensee with the potential for negative outcomes for consumers?

Summary of consultation responses

6.89 None of the respondents stated that Ofgem should propose dividend controls.

6.90 The majority of network companies stated that there was no need for transparency or reporting of MidCo/HoldCo financing to Ofgem as:

- (i) there is no risk/harm case for this requirement;
- (ii) it is outside of Ofgem's remit as they are not licensed entities; and
- (iii) these are legitimate methods for regulatory investment and implementing policy in this area would negatively impact investor sentiment.

6.91 One network company stated that the credit rating agencies will look beyond the immediate entity and at the overall strength of the group and provide investors in the immediate entity with a view of risk that takes into account leverage and structural finance of the group.

6.92 Two respondents supported transparency of these structures to support Ofgem's understanding of group risk and its impact on the licensee.

SSMD decision and rationale

6.93 We have taken forward increasing the reporting of MidCo/HoldCo financing structures through the RFPR RIGs consultation process.[118] Because of this action, we propose to take no further action in the RIIO-3 process.

6.94 We note the inconsistency in the responses that:

- (i) there is no harm to the licensee and by extension consumers from these financing structures and as they exist independently of the licensee and Ofgem has no remit; and
- (ii) that the credit rating agencies take into account these structures when assigning a credit rating to the licensee, indicating that the credit rating agencies consider they do influence the licensee's potential for default and the potential for debt recovery.

6.95 Ofgem agrees with the credit rating agencies: that leveraged financing structures at corporate levels above the licensee do have the potential to influence the financial resilience of the licensee. We could rely on the credit rating agencies to undertake the review of these structures as part of their process in assigning a credit rating. However, as noted above, the credit rating agencies are not doing analysis based on consumer interest or consumer harm, so there is a requirement for Ofgem to initially gather information on the financial structures in the sector to understand whether there is any potential for consumer harm.

Licensees stress testing

SSMC Summary

6.96 In the SSMC we asked:

- FQ18. Is there merit in amending the RFPR RIGs to include requirements for Licensees to undertake stress-testing, and to provide the results to Ofgem, as in the Retail sector and as the Prudential Regulatory Authority/Bank of England does for banks, to test for financial resilience?

Summary of consultation responses

6.97 The majority of respondents did not see any need for stress testing requirements. The reasons given were;

[118] Notice of proposed modifications to the Regulatory Financial Performance Reporting template and guidance for RIIO-2 (2024) | Ofgem

- increased costs; no demonstrable need as there was in the retail supply sector;
- rating agencies carry out this activity; and
- the existing financial resilience measures are sufficient.

6.98 Two network companies thought that there was insufficient information in the SSMC to respond.

6.99 Two respondents were open to stress testing in theory, with one suggesting it could be utilised if a company triggers a financial resilience review.

SSMD decision and rationale

6.100 We agree that compared to most of the retail supply sector, currently GD&T companies have more rigorous public analysis of their financial resilience and outlook by the bond market investors and credit rating agencies.

6.101 We agree that the financial resilience report provides a route for Ofgem to conduct an independent analysis of a company when certain financial resilience triggers are met.

6.102 We also believe that the new measures, extending the period of time for the availability of resources certificate, based on reasonable assumptions, should provide us with assurance and early warning indicators ahead of a companies' financial distress.

6.103 However, we believe that it may be in the consumer interest to be more explicit in the availability of resources certificate, where currently it is implicit, that the licensee has undertaken stress testing analysis prior to issuing the financial resources certificate.

6.104 Currently the certificate requires that "After making enquiries and having taken into account in particular (but without limitation) any dividend or other distribution… the licensee's directors have a reasonable expectation that the licensee will have sufficient financial resources…"

6.105 We propose amending the words to include "After making enquiries, including reviewing the results of any appropriate stress tests, and having taken into account…"

6.106 In terms of broader or regulated stress-testing, we do not see that the current market conditions and market evidence warrants this for this sector.

6.107 However, we will continue to monitor the market and companies' financial resilience and may revisit this decision through later consultations.

6.108 The information we will be monitoring and reviewing prior to revisiting this decision includes:

- licensees credit rating changes;
- the number of licensees providing financial resilience reports;
- the licensees gearing and debt interest cover;
- the licensees' group corporate gearing with reliance on the licensees distributions; and
- external economic and financial market shocks.

6.109 We will continue to consult on the need for stress testing requirements within the licence conditions.

7. Corporation Tax

Introduction

7.1 In RIIO-1 and RIIO-2, a financial model is used to calculate a tax allowance on the basis of an efficient company with a notional capital structure, as a proxy for efficient corporation tax costs,[119] for each of the relevant licensees ("Calculated Tax Allowance"). The tax allowance is supplemented by two specific uncertainty mechanisms:

- A tax trigger ("TTE") mechanism that reflects changes in tax rates, legislation and accounting standards; and
- A tax clawback ("TGIE") mechanism that claws back the tax benefit a licensee is assessed to have obtained as a result of gearing levels and interest costs that are higher than assumed.

7.2 In RIIO-2 and RIIO-ED2, we added an additional mechanism: a tax allowance adjustment ("TAXAt") mechanism that enables Ofgem to direct an adjustment to the Calculated Tax Allowance subject to a tax review and having consulted with the licensee. The purpose of this mechanism is to adjust a licensee's tax allowance to account for any unexplained material variances between a licensee's calculated tax allowance and actual tax liability, as part of an annual review and update of the Allowed Revenue (ARt) during the Annual Iteration Process (AIP). The mechanism serves in the best interest of the consumers and is in line with the principal statutory objectives of Ofgem, ensuring that licensees do not benefit from undue financial gains if there is an unexplained material variance between the actual tax liability and the notional tax allowance. As a supportive measure, two additional protections were introduced namely 'Tax reconciliation' and 'Board assurance statement' which required licensees to submit an annual tax reconciliation between the notional allowance and actual tax liability accompanied with an assurance from the board over the appropriateness of the values in the reconciliation, as an enabler for Ofgem to trigger a formal tax review as necessary.

7.3 For calculation of capital allowances in RIIO-2, we changed our RIIO-1 approach and made both the allocation rates and tax rates variable values to enable

[119] Out of the three options proposed and considered in RIIO-2 SSMD and Draft Determinations, we opted for "Option A - notional allowance with added protections", see RIIO-2 Sector Specific Methodology Decision – Finance (ofgem.gov.uk), draft_determinations_-_finance.pdf (ofgem.gov.uk

updates during the price control. Additionally for capital allowance opening balances, we established that licensees must roll forward RIIO-1 closing balances.

Notional Allowance with added protections

SSMC summary

7.4 In the SSMC, we proposed to maintain our overall corporation tax approach set in RIIO-2. We asked the following question:

- FQ19. Do you agree with our proposal to align the RIIO-3 tax approach with RIIO-2 and RIIO-ED2 including; to maintain Option A - notional allowance with added protections; the approach to capital allowances, and "glide path"?

Summary of consultation responses

7.5 In response to the FQ19 we received 11 responses. One respondent disagrees with option A, stating that licensees should be fully funded for their actual tax costs, and instead proposing that tax is transitioned to become a pass-through cost if licensees can demonstrate compliance with an accreditation standard, such as the Fair Tax Mark. However, ten respondents support maintaining the RIIO-2 tax approach for RIIO-3. Some respondents who agreed with the proposed approach provided additional comments.

7.6 One respondent commented that capital allowances should include first year allowances (FYAs) in addition to the writing down allowances (WDAs), after which the allocation rates can be used as variable values to accommodate changes during the price control period.

7.7 One respondent proposes to allow for updating of the tax pool allocation rates to reflect an actual allocation of expenditure included in the filed tax return. They commented that with permanent 'full expensing' tax regime and an enlarged investment programme, differences between estimated and actual allocation rates in tax returns could lead to significant tax variances. They also propose that the treatment of tax losses in the RIIO-3 PCFM is updated to reflect current tax loss legislation which restricts the utilisation of carried forward tax losses against profits to 50% above. The same respondent also proposed to remove the requirement of Board Assurance and commented that the tax reconciliation included in the RFPR already undergoes DAG assurance processes.

7.8 Three respondents proposed that 'full expensing' is integrated into the RIIO-ET3 PCFM calculations.

7.9 Two respondents seek clarification in reference to para 7.3 in SSMC that under the Tax Adjustment (TAXAt) mechanism, Ofgem would only conduct a tax review in cases of significant, unexplained differences between a licensee's calculated tax Allowance and actual corporate tax liability and want this explicitly mentioned in the SSMD. Additionally, one respondent suggests assessing tax reconciliation against a total materiality threshold for the price control period, rather than using a lower annual materiality threshold as done in RIIO-2.

SSMD decision and rationale

7.10 We have decided to retain the notional allowance with added protections methodology from RIIO-2 (referred to as Option A) (FQ19). The 'glide path' included in RIIO-2 will not be retained in RIIO-3. Additionally, changes to the PCFM will be required to reflect current tax loss legislation and Capital Allowances changes. Our rationale for following this approach is set out below.

7.11 In line with RIIO-2, the notional allowance remains the most appropriate basis of calculation for the tax allowance. We have not identified any clear evidence that a change to a pass-through would provide better value for the consumer and furthermore, we consider that it would introduce inconsistency in the calculation of the allowance, which may be to the advantage of some networks and the disadvantage of others. The existing approach to taxation is neutral to corporate structure.

7.12 Based on the most recent RIIO-2 PCFM, the majority of licensees across the various sectors will be at or within target gearing by the end of RIIO-2. Therefore, the excess gearing 'glide path' will not be featured within the RIIO-3 PCFM. This ensures that licensees who have taken action to fully comply with gearing limits during RIIO-2 are not prejudiced in favour of licensees who remain outside gearing limits.

7.13 Updates will be made to the PCFM to reflect SSMC responses at 7.7 above, which note that the RIIO-2 PCFM does not restrict carry-forward loss utilisation to 50% (in excess of the deduction allowance), and therefore does not currently reflect UK tax legislation. The tax clawback will continue to operate in an unrestricted manner, as restricting it in the same manner as trading losses would weaken the effect of the clawback, contrary to the intent of the measure.

7.14 The PCFM will be updated to reflect Full Expensing/First-year Allowances as noted at paragraph 7.8.

7.15 We note that permanent full expensing and increasing capex would result in larger estimation differences between the PCFM tax pool allocations and actual tax returns. The PCFM guidance will be updated to allow adjustments to tax pool allocations within the RIIO-3 price control period, with compensating adjustments to the tax allowance where appropriate.

7.16 We consider the board assurance statement to be necessary to ensure that material variances between the PCFM and tax filings are investigated and understood by the licensees. Licensees have not yet made their first board assurance statement submissions. Therefore, it is premature to consider modifying or removing this requirement. The board assurance statement will be retained in its present format.

7.17 The scope and application of the tax review within RIIO-3 will be unchanged from RIIO-2.

Tax clawback methodology

SSMC summary

7.18 In the SSMC, we proposed to make one amendment to the tax clawback methodology, to include the cumulative accretion, net of paydown, associated with inflation-linked derivatives within the definition of net debt. We asked the following question:

- FQ20. Do you agree with the proposed revision to tax clawback methodology?

Summary of consultation responses

7.19 Regarding FQ20, eight out of the 11 responses support inclusion of cumulative accretion, net of paydown, associated with inflation-linked derivatives within the definition of net debt for the purposes of the tax clawback.

7.20 One respondent commented that the proposed amendment better aligns the components of gearing but change will not be achieved just by tweaking the definition of net debt.

7.21 One respondent proposes that the tax clawback methodology should be reviewed by an Ofgem-ENA Tax working group.

7.22 One respondent agreed that in principle the definition of net debt should be amended so that the components of gearing, for the purpose of the 'Gearing Level test' be compared on a like for like basis to ensure that two identical

companies are compared on a consistent basis. Similarly, another respondent commented that the change would ensure that the networks are treated equally in the calculation, regardless of whether they have index-linked debt exposure through debt or derivatives. One respondent in full agreement of the new approach emphasizes the importance of factoring swap accretion into the debt calculations to maintain consistency with the credit rating methodologies.

7.23 Two respondents highlighted the need for Ofgem to apply consistency in all aspects of the framework. They emphasised that derivatives should be applied consistently, both in calibration of the 'cost of debt allowance' and the 'assessment of the actual company'. One company advocates the inclusion of derivatives used for managing inflation risk to be allowed across all aspects of the framework. Another suggests a comprehensive approach i.e. prescribing the inclusion of derivatives in all relevant policy and reporting areas for a fair and consistent finance policy.

7.24 One respondent disagrees and proposes to exclude derivatives from actual or tax deductible interest costs and adjusted net debt due to inconsistent treatment within the tax clawback contexts. Their argument revolves around the notion that excess interest should accurately reflect excess gearing which they think the current methodology falls short of achieving.

SSMD decision and rationale

7.25 We have decided to make the proposed revision to the Tax Clawback methodology, as outlined in the SSMC (FQ20), to include interest accretion net of paydown within the definition of net debt for the purposes of the tax clawback calculation. There will not be any change to the CoD allowance as a result of the amendment to the tax clawback mechanism. Our rationale for following this approach is set out below.

7.26 The RIIO-2 definition of net debt could enable a licensee to construct an instrument which is economically equivalent to index linked debt by utilising inflation swaps and non-index linked debt but report lower regulatory gearing than directly issuing index linked debt. This is because the RIIO-2 net debt definition does not explicitly include cumulative accretion, net of paydown, associated with inflation derivatives. We consider that this feature results in a risk of consumer detriment. Licensees could benefit from additional tax relief from gearing above the notional assumption by using these instruments, but still not be subject to the appropriate tax clawback as reported regulatory gearing would

be lower than actual gearing. This scenario would result in consumers bills being higher than strictly required.

7.27 We are also aware that some licensees are already including accretion within their calculations within RIIO-2. Updating the definition of Net Debt will provide clarity and a level playing field for all licensees. One respondent stated that as there were potentially other reasons for actual interest costs to exceed the allowable interest, beyond adopting gearing above the notional assumption, it would be appropriate to adopt a pro-rata allocation for the purposes of calculating the Tax Clawback. We do not consider the modification to pro-rata actual interest by the difference in gearing to be robust. Such a modification would not account for higher credit spread differentials caused by gearing exceeding the notional assumption. We also note that licensee's gearing may have been previously understated as the inclusion of accretion net of paydown on inflation swaps was not mandated previously.

7.28 The rationale for not explicitly including derivatives within the forecast of average efficient costs used to set the cost of debt allowance is described in section 2.13. We do not consider the approach presents an inconsistency with the tax clawback mechanism.

7.29 The tax clawback mechanism seeks to adjust the tax allowance for actual financing decisions which may generate a larger tax shield than assumed in setting the base tax allowance. The base tax allowance is set utilising notional assumptions. While we consider that the CoD allowance can be reasonably achieved using standard debt instruments, companies may choose to use derivatives at their own discretion. As the tax clawback is seeking to reconcile the notional and actual positions, it is right that the mechanism seeks to account comprehensively for all instruments entered into that could result in higher tax relief than that calculated in the base allowance. This is based on the principle that companies should not be given an allowance for tax which they do not pay.

7.30 Without the tax clawback operating in this way, companies would be incentivised to enter into certain derivative instruments to reduce their tax liability and capture the resultant difference between the allowance and tax actually paid. This excess allowance would result in consumer detriment, as consumers would be paying in excess of the fair cost.

8. Regulatory depreciation and economic asset lives

Introduction

8.1 Regulatory depreciation is a key building block of the revenue that network companies are allowed to make. Regulatory depreciation is comprised of an assumed asset life (or lives) and an assumption of the profile(s) of usage across the asset life (or lives). The regulatory depreciation assumptions determine the speed that RAV additions are paid for by consumers as part of the return of capital to investors. It is also commonly referred to as 'RAV depreciation' or 'allowed depreciation'. Our existing policy for RIIO-1 and RIIO-2 is to depreciate the RAV at a rate that broadly approximates the useful economic life of the network assets and incentivises investment efficiency.[120]

8.2 The key aims of this policy are to:

- allocate costs fairly between current and future consumers; and
- ensure that company revenues reflect the network company's need to make annual and economic investments.

8.3 It is therefore important that the regulatory depreciation assumptions on asset life and profile also reflect the economic life and use of the assets.

8.4 The key principle for intergenerational fairness is that the rate of depreciation should be set so that different generations and types of consumers pay network charges broadly in proportion to the value of network services they receive. If we assume the current network will continue to deliver useful service only over the next 50 years, then the RAV should be depreciated over 50 years. If there is evidence that network assets may cease to be useful sooner, then the RAV may need to be depreciated over a shorter period and/or at a faster rate.

8.5 Table 17 summarises the Final Determinations as published for RIIO-2.[121] GDNs and TOs did not propose depreciation policy changes for RIIO-2 in their business plan submissions and as such the approaches for these sectors were rolled over from RIIO-1. For RIIO-2 Ofgem also considered the economic and technical lives of GT assets and how they compared with those in the GD sector along with the latest Future Energy Scenarios (FES2019). Ofgem and other stakeholders found that there was a risk (falling mostly but not exclusively on consumers) that gas

[120] RIIO-2 Framework (ofgem.gov.uk)
[121] RIIO-2 Final Determinations – Finance Annex (REVISED) (ofgem.gov.uk)

volumes continue to fall. For this reason, Ofgem decided to align the depreciation and asset life policy for GD and GT sectors. Finally, it was noted that extra clarity, regarding volumes and government policies such as heat and net zero, would arise before RIIO-3 and benefit policy making for both sectors ahead of the next price control.[122]

Table 17: RIIO-2 final determinations

Sector	Asset type	Asset lives	Depreciation profile
GD (rollover)	Pre-2002 additions	56 years	Sum-of-digits
	Post-2002 additions	45 years	Sum-of-digits
GT	Pre-2002 additions	45 years	Straight line
	Post-2002 additions	45 years	Sum-of-digits
ET (rollover)	Pre-2013 additions	20 years	Straight line
	Post-2013 additions	45 years	Straight line

8.6 Table 17 does not necessarily reflect the true, real world depreciation schedule that network companies receive. Vesting has led to the creation of multiple different depreciation schedules. Full details of up-to-date depreciation schedules for all sectors can be found in the relevant Price Control Financial Models.[123,124,125]

8.7 There are two main policy decisions we will need to make for each sector in the RIIO-3 price controls; these are asset life assumptions and depreciation profile. As set out below, we see different issues facing the Gas and ET sectors.

SSMC summary

8.8 In the SSMC we did not lay out a preferred or an intended policy direction of travel for regulatory depreciation. Instead, we laid out the most pertinent issues facing each of the sectors, invited feedback on our analysis and asked the following consultation questions:

- FQ21: GD & GT: assuming re-openers are available and there is no adjustment to the allowed WACC, how should regulatory depreciation be

[122] draft_determinations_-_finance.pdf (ofgem.gov.uk)
[123] GD - GD2 Price Control Financial Model | Ofgem
[124] GT - GT2 Price Control Financial Model | Ofgem
[125] ET - ET2 Price Control Financial Model | Ofgem

used to address the uncertainty around the future path for gas and perceived asset stranding risk?

- FQ22: GD & GT: what long-term path should regulatory depreciation aim to follow between 2026 and the assumed de-energisation point to promote fairness for current and future consumers? What unit metrics should this be based on? Is this resilient to the various scenarios under FES 2023?
- FQ23: GD & GT: assuming there is a relevant gas re-opener for government policy, is there a need to reopen regulatory depreciation policy intra-period?
- FQ24: GD & GT: what considerations are raised by asset repurposing and how might these affect the decisions to be made on regulatory depreciation policy? What guidance is sought for the SSMD so that licensees have sufficient clarity for their business plans?
- FQ25: ET: do stakeholders consider there to be a need for amending the existing RIIO-ET2 asset life and/or profile assumptions, on either a company-specific or sector basis? If so, please set out your evidence base and potential consumer benefits and costs of changing the existing methodology.

8.9 In the following sections we assess the appropriate approach to take in the gas and ET sectors. As many of the responses from stakeholders covered multiple questions, below we present and analyse responses by topic rather than question.

Regulatory depreciation in GD and GT

The role of Ofgem, customer impact and the need for action in RIIO-3

SSMC summary

8.10 In the SSMC, we discussed two overarching issues that needed to be addressed as a result of the government's net zero target date, 2050. These were the perception of asset stranding risk and the need to manage the impact on both current and future consumer bills.

8.11 We explained that we were considering if and how re-openers could be used to mitigate the perceived asset stranding risk and welcomed stakeholder views on this.

8.12 We discussed that regulatory depreciation policy has a direct impact on consumer bills. Our modelling suggested that under current regulatory depreciation policy and future gas forecasts it was possible that we see a sharp and unsustainable

increase in gas consumer bills in the mid-2030s due to other consumers switching to electricity only.

8.13 We suggested that this forecast sharp increase in consumer charges created fairness issues between current and future consumers. We asked for stakeholder input on this.

Summary of consultation responses

8.14 Several stakeholders noted the important role that Ofgem has to play in reaching net zero, but also argued that we should continue to consult widely and actively explore options with government to avoid making hasty and uninformed policy decisions in relation to depreciation in the gas sectors. Most respondents recognised that Ofgem has an important role to play in managing the decarbonisation of the gas networks.

8.15 GDNs told us that our work with government should also cover issues such as decommissioning and the potential for asset transfers and cautioned that decisions on regulatory deprecation should take these issues into consideration to avoid unnecessary increases to consumer bills in RIIO-3. GDNs made several recommendations as to the approach that should be taken when assessing the suitability and value of assets to be transferred to alternative uses.

8.16 Several stakeholders also highlighted the importance of considering the impact on consumer bills during RIIO-3 and questioned current evidence on the net zero transition. Stakeholders argued that particular attention should be paid to the near-term impact on vulnerable consumers. Sustainability First cautioned against treating this issue in purely technical terms as this risked underappreciating the impact on certain consumer groups.

8.17 In relation to the timing of action, most GDNs argued that signalling a proposed pathway and depreciating the RAV to zero or otherwise acting spontaneously or prematurely could undermine the value of the assets for future use cases and send a negative signal to investors. GDNs noted that there may be value to waiting until policies on issues such as hydrogen for home heating are clearer, and argued that the current evidence on consumer behaviour does not match some of the FES scenarios used by Ofgem in its analysis.

8.18 There were mixed views expressed on the value of re-openers, with GDNs generally against the idea and an Independent Gas Transporter (IGT) in favour. One GDN noted that the criteria for any re-opener would need to be clearly defined in advance.

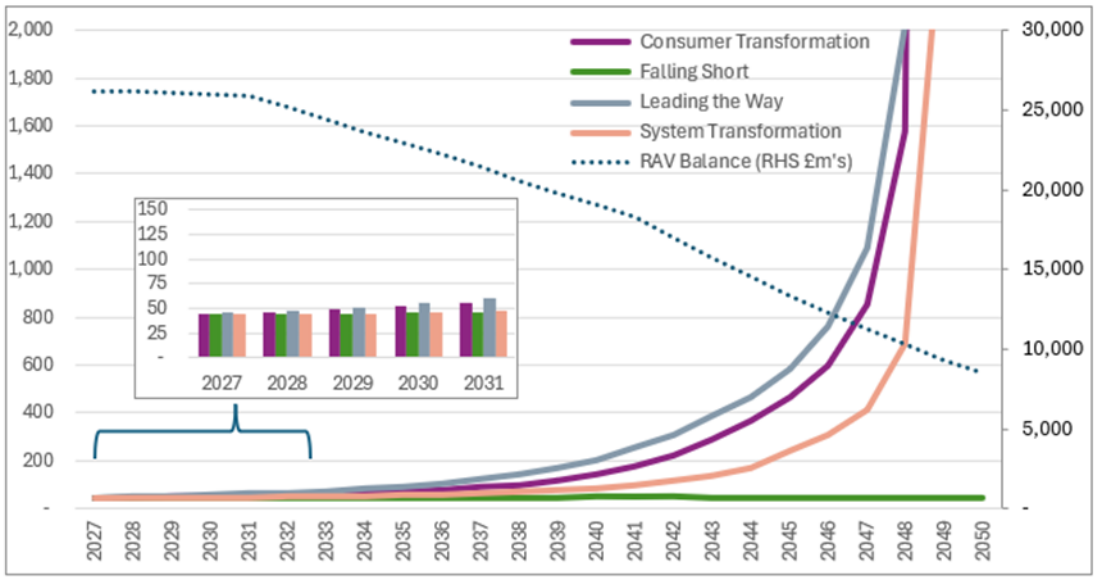
SSMD decision and rationale

8.19 We have decided that action is needed during RIIO-3 to accelerate depreciation for gas distribution and transmission companies during RIIO-3 beyond the existing 45-year sum of digits profile.

8.20 Our principal objective is to protect current and future consumers, which includes considering their interest with respect to net zero. In the gas sector, following this objective suggests that we should start to address future gas demand reduction and its potential impact on consumer bills. Whilst accelerating depreciation during RIIO-3 will increase the depreciation charge within current consumer bills, this is expected to be offset by a lower depreciation charge in the future than currently forecast, with a fairer intergenerational distribution of this element of the network costs. Delaying a decision on accelerating depreciation has the possibility to worsen the problem, as the consumer base left to pay for the largely fixed cost of past investment in the network decreases.

8.21 Following the SSMC we have undertaken further analysis of the possible impact on consumer bills and the perception of asset stranding risk if we do not act to accelerate depreciation within the GD sector.

Figure 15: Indicative analysis of the existing GD depreciation policy using the four FES 2023 scenarios



8.22 In the chart above the left-hand axis is the per annum cost to consumers of gas depreciation (in £, bar chart insert and solid lines), the right-hand axis is the RAV balance over time (in £m's, dotted line).

8.23 As part of this analysis, we have made several assumptions: (i) 70% of the depreciation allowance is paid for by domestic consumers; (ii) the number of households with a gas boiler under FES scenarios as a proxy for the number of households using the GD network; (iii) continued investment beyond 2026 based on rolling forward RIIO-2 totex to RIIO-3 and removing mandatory repex spend from RIIO-4 onwards; and (iv) real 2022/2023 price base for all prices.

8.24 This analysis indicates that there is the potential for significant increases in bills to cover depreciation under the existing depreciation policy, with the potential for an increased perception of asset stranding risk due to the unaffordability of bills and outstanding RAV by the government's net zero target date (2050).

8.25 Accelerating the depreciation rate, by increasing depreciation amounts during RIIO-3, will smooth the consumer bill payments over time for three of the four FES scenarios.

8.26 However, as well as accelerating the rate of depreciation we also recognise that we need to continue to work closely with government to consider some of the issues raised by stakeholders in response to this consultation.

8.27 We agree with respondents who suggested that the RAV would not necessarily need to be fully depreciated by a certain date if other solutions such as funding through taxation occur. Whilst this may be the case, implementing these solutions falls outside of Ofgem's remit and would require government intervention. We will continue to work with government to consider potential alternate approaches.

8.28 We note that some uncertainty around both consumer behaviour and future policy remains. However, based on the current forecasts for consumer bill impact, reflecting the current government policy, we believe that we must act in the RIIO-3 price control to accelerate depreciation beyond its current rate. We examine potential policy options on the methodology for accelerating depreciation later in the chapter. Our policy options consider the importance of adapting to changes in consumer gas usage forecasts and/or government policy at each price control period.

RAV Risk and the cost of capital

SSMC summary

8.29 We explained that a perception of asset stranding risk could materialise if a RAV balance remains beyond the point of decarbonisation of the energy network. We also reiterated that we continue to disagree with stakeholders who have

suggested that it is appropriate or necessary to increase the allowed returns on capital in compensation for the perceived increased risk to long-term value of the RAV.

8.30 We discussed that shorter asset lives and a more aggressively front-loaded depreciation profile may mitigate any perceived asset stranding risk. We also mentioned that one possible approach to our RIIO-3 regulatory depreciation policy could be adjusting asset lives such that the RAV was depreciated to zero by the government's 2050 net zero target date. We asked for stakeholder views on these and other potential approaches for mitigating perceived asset stranding risk.

Summary of consultation responses

8.31 All gas network companies said that the perceived risk of asset stranding should not sit with investors.

8.32 GDNs stated that depreciation policy alone cannot eliminate asset stranding risk, only mitigate it and that the risk of asset stranding was asymmetric to the downside. As such, many GDNs argued for an increase in the allowed return on capital as compensation for the perceived risk.

8.33 Multiple GDNs argued that a RAV guarantee or a RAV recovery framework would be required to fully eliminate the risk of asset stranding and the need for a subsequent uplift in the allowed return on capital. Some GDNs said a guarantee from Ofgem was enough whereas others argued for a government guarantee. One GDN noted that the stronger the commitment to a form of recovery mechanism, the weaker the need to front-load recovery of the RAV.

8.34 National Gas noted that the proportion of natural gas RAV at risk of stranding is reduced with repurposing. They also suggested Ofgem should leave the decision on asset lives open at the SSMD and commit to reassessing the evidence available at later stages of the price control setting.

8.35 One GDN thought that we have accepted the premise of asset stranding and asked us to confirm this in the SSMD. It also requested that we use "clearer" language in the SSMD by removing references to "perceived" or "perception of" asset stranding risk.

8.36 A consumer group agreed with us that it is a "perceived" risk of asset stranding and does not believe that an actual asset stranding risk exists. The consumer group deemed that the uncertainty is over what route will be taken to ensure that investors receive the return for which they had legitimate expectations.

8.37 Citizens Advice agreed that it is not appropriate or necessary to increase the allowed returns on capital in compensation for perception of increased risk to the long-term value of the RAV. It also stated that the CMA has been clear in this area, noting that this is a diversifiable risk, and that the CMA is "unpersuaded that the ability to recover the value of any stranded gas assets is likely to be materially related to the broader economic cycle".[126] The consumer group argued that increasing the allowed return on capital should be ruled out in the SSMD.

8.38 Citizens Advice also argued that if the RAV was to be fully depreciated to zero before repurposing then any benefits from asset transfers should accrue to consumers.

8.39 Centrica stated that ruling out requiring investors to bear the costs of asset stranding would prevent any need to consider uplifts to the cost of equity.

SSMC decision and rationale

8.40 For the GD sector we have decided to accelerate depreciation as detailed above and with a target of returning investment by the government's net zero target date, 2050. We believe that investors' concerns around the perception of asset stranding risk can be materially mitigated by these decisions, with the smoothing of customer payments reducing the risk of unaffordability and a repayment of investment in line with the governments net zero target date.

8.41 Rolling forward the existing asset life assumption for GD assets of 45 years is inconsistent with the government's net zero target date. Whilst the exact path to net zero and the impact on the gas distribution network is uncertain, aligning the repayment of investment in GD to the government's target net zero date provides the most certainty to investors and consumers that repayment of investments is aligned to current government policy for the sector.

8.42 We have retained a policy option to only apply the new asset life assumption to assets added to the RAV during RIIO-3 and onwards, rather than the applying it to the existing outstanding RAV, which we outline later in the chapter.

8.43 For the GT sector we believe that it is more likely that some assets will retain their use beyond the government's net zero target date as the network could support new net zero projects (gas-fired power stations with carbon capture technology) and benefit from a relatively high degree of repurposing (when

[126] CMA, Final Determination: Cost of equity, Para 5.452 https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf

compared to GD) for example, to CCUS and Hydrogen to support the decarbonisation of industry. In addition, the potential consumer bill impact of delaying a decision on accelerating GT depreciation to a new full repayment date is much smaller than for GD. Under the existing depreciation profile, the depreciation charge on domestic consumer bills for GT is forecast to range from £4 per consumer per annum[127] (under the Falling Short FES scenario) to £16 by 2040 (under Leading the Way), compared to between £48 per consumer per annum to £205 for GD under the same FES scenarios.[128] Because of this, whilst we have decided that we should accelerate the depreciation rate for GT we have decided against creating a new target RAV repayment date at this stage. National Gas should provide evidence in its Business Plan to understand where its network is most likely to be repurposed or retained beyond the government net zero target.

8.44 We discuss the impact of perceived asset stranding risk on the cost of equity in paragraph 3.307, including our proposal to capture any risks through the broadening of the beta cohort to more explicitly include gas network comparators. We continue to consider it appropriate to mitigate rather than compensate for these types of risks, and do not currently consider there to be evidence of further required uplifts to the assessed cost of capital. We also note the evidence from the CMA in the Citizens Advice response to the SSMC.

8.45 We note responses which stated that depreciating the RAV to zero could undermine the value of the assets for future use cases and send a negative signal to investors. We believe that aligning asset life assumptions to government policy provides certainty to investors, as it aligns repayment of investments with current government policy objectives. The RAV and economic value of the assets are two separate concepts (although linked). We discuss the different depreciation options we have available later in the chapter, and we have retained the option to adapt the depreciation schedule to future use cases well in advance of decarbonation of the GB energy system as well as to changing evidence and policy direction.

8.46 We agree that consumers should be protected both from any repurposing or asset transfers and with respect to any residual value of any remaining assets. If it becomes clear that there is a positive value associated with effective repurposing of the assets, then this needs to be appropriately balanced between consumers

[127] GT forecast a rollover of £2bn totex for RIIO-3, £1.5bn for RIIO-4 & RIIO-5; 20% depreciation charged to consumers.
[128] See Figure 15 above

and investors. As set out in Chapter 4 of the Overview Document, we are working with DESNZ to consider potential valuation options for the transfer of any repurposed assets between RIIO and the Hydrogen Transport Business Model.

Regulatory Depreciation methodology

SSMC summary

8.47 In the SSMC we began to investigate how to address the issues arising as a result of the government's net zero target using the tools we had available in regulatory depreciation policy. We sought stakeholder views on how regulatory depreciation asset life and profile assumptions could be used to address these issues.

8.48 We introduced the idea of a depreciation charge "smoothing" scenario. This involved setting a depreciation policy that would keep the depreciation charge fixed per some metric (e.g. consumer numbers or energy kWh). We sought stakeholder views as to the potential benefits and costs of implementing such a scenario. We were particularly interested in stakeholder views as to which metric we should choose to create a "smoothed" profile if this option was implemented.

Summary of consultation responses

8.49 Most GDNs argued that maintaining the current approach to regulatory depreciation policy is appropriate until greater clarity materialises. GDNs pointed to the lack of consumer uptake of heat pumps and the potential for the gas networks to have a longer-term role. GDNs told us that if we deemed that a change to regulatory depreciation policy was necessary, that these changes would be better off as simple changes to asset life assumptions or depreciation profiles. GDNs said that Ofgem should be cautious of the long-term financeability implications when considering changes to regulatory depreciation policy. GDNs noted that Ofgem should avoid any adverse impacts on incentives and underfunding in other areas of the price control as a result of changes to regulatory depreciation policy.

8.50 A GDN and a consultant report written for the GDNs made reference to international regulators and their corresponding regulatory depreciation policies for gas, suggesting Ofgem follow suit. A summary of relevant international regulatory precedent from the consultant report can be found in Table 18.

Table 18: Summary of international regulatory precedent from the consultant report

Regulatory instrument	**Examples of where this has been used**
Shortening of asset lives	Austria (wholesale changes); Belgium (Federal: GT assets fully depreciated by 2050); France (wholesale changes); Germany (network operators have the ability to set asset lives such that they come to an end in 2045); New Zealand
Front-loaded depreciation profile	Germany (declining balance profile); The Netherlands (variable declining balance); New Zealand ("custom" profiles available for specific licensee circumstances)

8.51 GDNs raised concerns over accelerated depreciation because of potential effects on risk, unintended consequences, upward pressure on bills and credit rating agency views. An independent energy consultant argued that accelerated depreciation could have a dramatic and immediate impact on the ability of gas network companies to raise finance and manage financial risks. It argued that this could potentially derail the entire financial model for the sector.

8.52 An IGT said that accelerating depreciation means that the transition to net zero can be managed in a proportionate way whilst providing network investors with an element of certainty of cost recovery. It also said that it was important that the solution is fit for purpose to flow through to the IGT networks.

8.53 The GDNs strongly objected to the indicative 'smoothing' scenario that was presented in the SSMC. and along with National Gas, generally opposed linking depreciation policy to demand forecast scenarios. It was argued that the FES do not provide a sufficient assessment of when de-energisation will occur. It was also stated that current FES 2023 scenarios are implausibly optimistic on the uptake of heat pumps to be considered a reasonable forecast. A stakeholder noted that the FES have no considerations for as to how the scenarios are impacted by transitional technologies such as hybrid boilers. They also stated that linking depreciation to these forecasts would create a complex policy that was uncertain. It was also suggested by a GDN that it would be difficult to decide how to apply smoothing to commercial and industrial consumers.

8.54 One GDN agreed with the principle of smoothing charges across years. It stated that this was sensible for intergenerational fairness. Multiple other stakeholders agreed. Citizens Advice stated that it thinks the per customer spike to gas network costs in the mid-2030s from maintaining the current depreciation policy

needs addressing and believes smoothing is worth further consideration. It did note, however, that the higher short term bill impact derived from a "smoothing" policy scenario needs to be taken into account.

8.55 Multiple GDNs suggested that it was too early to determine the unit metrics that fairness could be considered over, and one GDN suggested that doing so was inconsistent with international precedent. Multiple respondents suggested that if Ofgem decided that metrics needed to be chosen, that these should be based on customer numbers or connections/disconnections rather than volumetric data (such as energy MWh). A consumer group suggested that overall demand for natural gas should be used. A GDN suggested that Ofgem should consider the long-term reliability of the metric forecasts it chooses to use.

8.56 A GDN suggested that leading and lagging indicators be established to measure the pace of change in the gas sector. The GDN suggested a leading indicator based on the number of heat pumps (or other technologies) installed in homes with an existing gas connection. The proposed lagging indicator (to verify these figures) was the number of homes that have been disconnected from the gas network.

8.57 An IGT stated that the path for regulatory depreciation policy should be based on tracking the aggregate peak capacity of the gas network as it is closely aligned to how consumers pay, and networks are planned and funded.

8.58 Sustainability First suggested that Ofgem should consider the approach used by Ofwat in the water sector in which water companies are allowed to "run-off" (depreciate) their "RCV" (RAV) at a rate of their choosing (with evidence) under an upper limit set by Ofwat.

SSMD decision and rationale

8.59 We will continue to engage with stakeholders in developing regulatory depreciation methodology through to determinations next year. For GD and GT, we will set up working groups with stakeholders this calendar year to work through the details of the different depreciation policy options and our criteria for assessing those options.

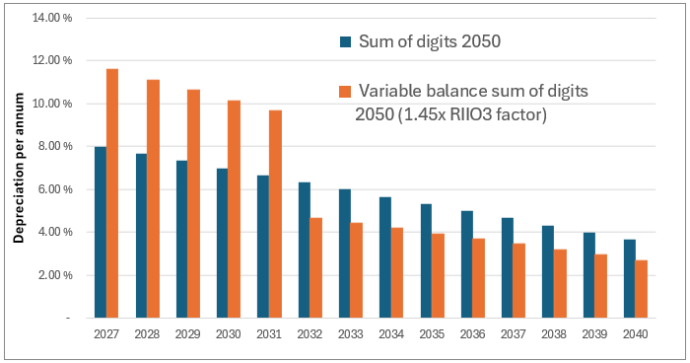
8.60 For GT, we will also work with National Gas and other stakeholders to assess the level of repurposing of the network that is likely to occur, any asset transfer considerations and potential policy options for accelerating the depreciation rate. We will make sure that any policy solutions can flow through the whole network, including commercial consumers, industrial consumers and IGTs.

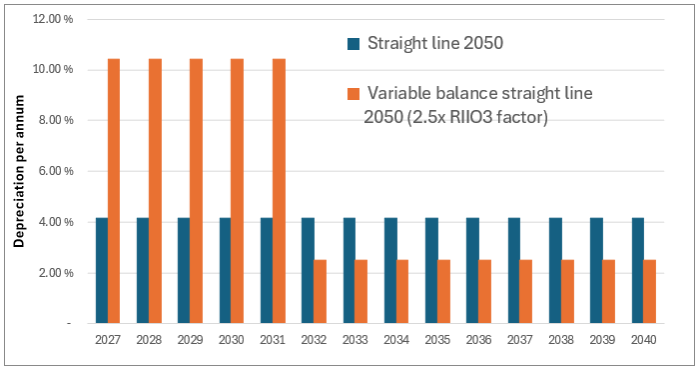
8.61 We outline in Table 20 below four potential depreciation options we are considering. All the options accelerate depreciation beyond retaining the existing policy to reflect the decisions made in 8.19 and 8.40 above. We intend to work with stakeholders to develop these further.

8.62 We understand the concerns raised by stakeholder including to keep options simple and easy to implement. We will fully examine these along with issues around financeability before a decision on a regulatory depreciation profile and asset life assumptions are made.

8.63 We broadly agree with respondents who voiced concern that the indicative smoothing scenario in the SSMC is not a suitable policy option for RIIO-3 and beyond. This includes concerns that the current forecasts on energy demand or usage may not be accurate or reliable enough to set one depreciation profile well into the future. We also agree that more work is needed before deciding upon the metric(s) used to smooth depreciation charges over.

Table 19: Potential GD regulatory depreciation policy options

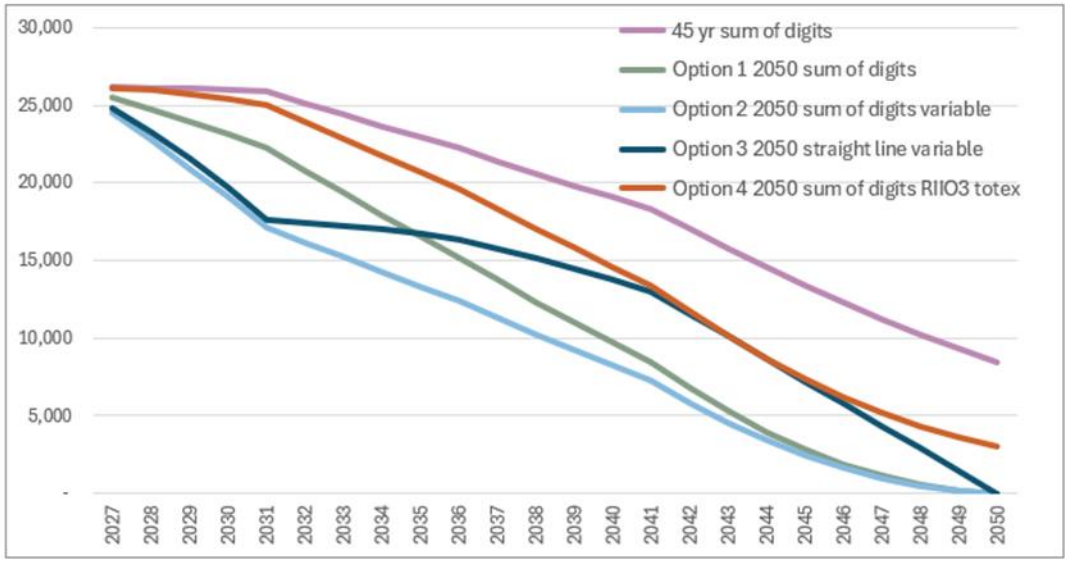
Option	Name	Description	Modelling methodology
1	Sum-of-digits with RAV returned by government's net zero target date, 2050.	A sum-of-digits profile with asset lives set such that the RAV is fully depreciated by the government net zero target date.	Depreciate the existing RAV using a sum-of-digits profile over 24 years from 2026. New additions depreciated using a sum of digits approach with asset lives set to end in 2050 (e.g. 24 years in 2026, 23 years in 2027 etc).
2	Sum-of-digits, variable declining balance with RAV returned by government's net zero target date, 2050.	As with option 1, but with an acceleration factor decided at each price control and applied to the depreciation amount for that period to accelerate payments as required. In setting the level of the acceleration factor we would take into account four metrics: RIIO3 consumer bills, future consumer bills, perceived asset stranding risk and financeability. The acceleration factor can therefore be set at each price control period to take into account government policies or consumer gas usage forecasts at that moment in time.	The sum of digits profile as described in option 1 is multiplied by a price control acceleration factor (e.g. 1.45x for RIIO-3). This will increase the depreciation payments on a per annum basis for the price control period. Any increase in depreciation during the previous price control(s) will be deducted from the depreciation rates for the remainder of the asset life. This deduction will be spread across the asset life, based on the sum of digits approach, in order that depreciation payments continue through to 2050. The chart below illustrates the effect of the acceleration factor compared with a standard sum of digits calculation. It shows the increase on the percentage depreciation rate with a 1.45x factor (in orange) for RIIO3. It assumes no acceleration factors are applied in price controls beyond RIIO-3. 

Option	Name	Description	Modelling methodology
3	Straight-line, variable declining balance profile with RAV returned by government's net zero target date, 2050.	As with option 2, but with a straight-line profile rather than sum-of-digits. The acceleration factor will be chosen based on the same metrics as option 2.	As with option 2, but with a straight-line profile underlying the depreciation profile rather than sum-of-digits. The chart below illustrates the effect of the acceleration factor compared with a standard straight line depreciation calculation. It shows the increase on the percentage depreciation rate with a 2.5x factor (in orange) for RIIO3. It assumes no acceleration factors are applied in RIIO4 or beyond. 
4	For existing assets: retaining the existing depreciation profile and asset life assumptions; for new investment, sum-of-digits with investment returned by government's net zero target date, 2050.	Leave depreciation policy for existing assets unchanged. Set a new policy for new additions to the RAV. This would be a sum-of-digits profile with asset lives set such that the new investment is fully depreciated by the government net zero target date.	Depreciate the existing RAV as per the current 45-year, sum-of-digits profile. New additions depreciated using a sum of digits approach with asset lives set to end in 2050 (e.g. 24 years in 2026, 23 years in 2027 etc).

8.64 Option 4 could be appropriate if we placed significant weight on there not being a case to change the depreciation treatment of assets already in place, and only to accelerate depreciate for investments made with today's knowledge about likely asset life. Currently we think this option is unlikely to be sufficient to address all the metrics we will use to assess the objective of accelerating depreciation.[129] Nevertheless, we will seek views from stakeholders as to whether it could be an appropriate transition.

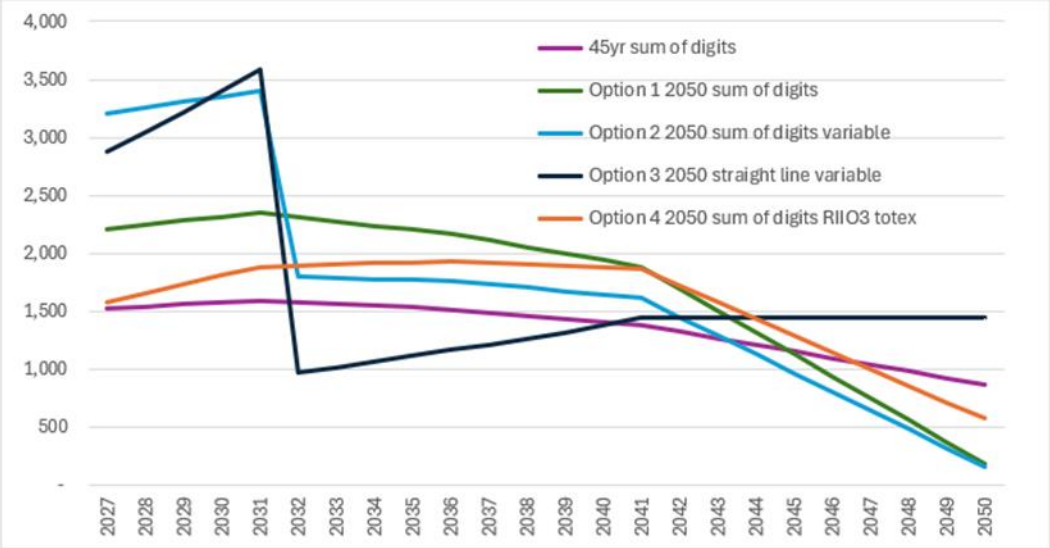
8.65 The two charts below are presented to illustrate the impact of the depreciation options on the RAV balance over time and on the annual depreciation payments, compared to the existing policy (45-year sum of digits). They are presented to help understanding of the effect of the different options over time.

Figure 16: Illustrative gas distribution RAV (£m) balance under the depreciation options[130]



[129] See 8.67
[130] 22/23 Real. Based on actual RIIO-2 totex and RIIO-3, 4 & 5 totex estimates. Option 2: 1.45x variable factor RIIO-3 only, Option 3: 2.5x variable factor RIIO-3 only.

Figure 17: Illustrative gas distribution per annum RAV depreciation payments (£m) under the depreciation options[131]



8.66 We recognise that the implementation of any of these potential depreciation policy options could have an impact on current and future consumer bills, the investors' perception of asset stranding risk and financeability.

8.67 Therefore, we plan to use those four metrics to assess the different policy options detailed in Table 19 to inform our final decision making on the depreciation policy:

- Consumer bills during RIIO-3: to consider any immediate increases in consumer bills due to accelerated depreciation in the context of expected trends in overall consumer bills during the period to ensure fairness for current consumers;
- Consumer bills over time: to ensure that we are not significantly impacting future consumer bills by that action or inaction with the aim of implementing a depreciation profile that smooths the depreciation payment per consumer over time;
- Perceived asset stranding risk: to consider the impact of the option on:
- forecast outstanding RAV balance at the point of minimal or no gas consumers; and/or

[131] 22/23 Real. Based on actual RIIO-2 totex and RIIO-3, 4 & 5 totex estimates. Option 2: 1.45x variable factor RIIO-3 only, Option 3: 2.5x variable factor RIIO-3 only.

- forecast gas consumer bills increasing to such a degree that they become unsustainable due to the impact of a smaller gas consumer base paying a fixed depreciation charge; and
- Financeability: to have regard to the need to secure that companies are able to finance the activities which are the subject of obligations imposed by or under the relevant legislation. This will consider the ability of gas networks to raise financing and the potential impact on credit rating metrics and the credit rating analysis which may impact the credit rating of the efficient licensee under the notional capital structure.

8.68 We do not consider that any of our proposed options for GD or GT fetter the government's ability to make future decisions relating to the long-term future of the gas networks or limit alternative approaches to dealing with residual gas assets. In considering the depreciation options with stakeholders we can also take into account and adapt to market changes (government policy, FES/gas usage scenarios, network business plans) through DD to a proposed decision.

Regulatory depreciation in ET

SSMC summary

8.69 In the SSMC, we asked for views and evidence as to whether and why asset lives had materially changed from the 45-year existing asset life assumption. We explained that absent evidence to the contrary, we would propose to continue to apply the depreciation profile and asset life policy used in RIIO-2.

8.70 If evidence was presented that proves actual asset lives differ materially from our current assumptions, then we proposed two alternative policy options. The first option was a wholesale change to asset lives across the sector so each licensee has the same new assumed asset life. The second option was bespoke approach to setting the assumed asset life where each licensee would have an individual assumed asset life that depreciation policy would be applied to.

8.71 We asked if stakeholders considered there was a need to amend the existing RIIO-ET2 asset life and profile assumptions. We asked that along with any evidence, stakeholders also laid out the potential consumer benefits and costs of changing the existing methodology.

Summary of consultation responses

8.72 One TO stated that asset lives should broadly reflect the statutory calculated economic asset life. A DNO agreed with Ofgem that the principle that regulatory

depreciation policy should reflect the average economic life of the assets it is associated with.

8.73 Two TOs expressed the view that actual asset lives under RIIO-3 are likely to be significantly shorter than current asset lives due to the increased use of offshore assets (HVDC submarine cables) and "intelligent" substations (with increased reliance on electric and digital components). One of those TOs stated that current asset lives under RIIO-2 were already shorter than the current 45-year asset life assumptions and were likely to reduce even further under RIIO-3.

8.74 NGET explicitly expressed a need to shorten asset lives and accelerate the "RAV differential" pot. It suggested a reduction in the "RAV differential" asset life to at least 10 years from the existing 34 years. It claimed that this would increase intergenerational fairness due to the current RAV differential not being recovered until 2061, nearly 70 years after its creation.

8.75 Two TOs reasoned that a shorter ET asset life would improve cashflows and financeability ratings such as FFO/Net debt. One also explained that shorter asset lives would help to drive down the level of debt funding from the sector and have a positive knock-on effect on the gearing ratio. It was suggested that this was especially beneficial due to the required increase in investment during RIIO-ET3 adding pressure to financeability assessments and investment grades.

8.76 One TO suggested that the regulated asset life could be set on a company specific basis and that rates could be submitted by companies with justifications as part of their business plan submission.

8.77 A DNO suggested that new asset additions to the RAV be considered in discrete groupings that have similar characteristics. It was then suggested that these discrete groupings could have specific depreciation profile and asset life assumptions applied to them to reflect the risk faced to each.

8.78 A DNO suggested that the current 45-year asset life assumption raises questions as to the long-term sustainability of RAVs and investability in the sector. It suggested that Ofgem should consider the effects of changing asset lives on financeability and other metrics.

8.79 A DNO warned that Ofgem should recognise and act on the additional financeability problems "being stored up for future stakeholders as a consequence of decisions being made now". The licensee explained that deferment of consumer funding over a longer period of time could compound the RIIO-ED2 financeability problem.

8.80 An energy company stated that it did not consider there to be a need to amend the existing RIIO-ET2 asset life and/or profile assumptions.

SSMD decision and rationale

8.81 Our existing 45-year asset life assumption is based on analysis from CEPA in 2010.[132] In 2010, CEPA estimated the weighted average technical life to be 54 years but recommended that Ofgem use a 45-year assumed life given some uncertainty about the longer-lived assets.

8.82 Following publication of our SSMC, we commissioned CEPA to provide updated analyses on the licensees' current asset lives. CEPA estimated the weighted average technical life of the current asset mix to be 55 years. The findings of the 2010 analysis therefore still appear to hold for the current asset mix.

8.83 We did not receive material evidence demonstrating that the profile of asset lives at ET companies has changed significantly since RIIO-2, although we note TO views that average asset lives may change in coming periods given the mix of future investment.

8.84 In their recent analysis, CEPA raised 3 areas that may require further consideration:

- There is potential evidence of extensions in the technical life of traditional network assets eg through continued improvements in asset management.
- Technologies which will be more widely deployed during RIIO-ET3 and beyond have a lower asset life than traditional network assets (eg subsea cables, digital substation equipment, HVDC converters)
- The average asset life may vary considerably across TOs due to changing proportions of different types of assets (e.g. the use of proportionally more subsea cables in Scotland). This may support consideration of different asset life assumptions across licensees.

8.85 The evidence provided in the updated CEPA report suggests that our RIIO-ET2 asset life assumption of 45 years remains appropriate for current assets. However, extra clarity on the average life of new assets to be built during RIIO-3 could materialise in the RIIO-ET3 business plan submissions.

8.86 On the basis of this assessment, we will continue with an asset life assumption of 45 years for RIIO-ET3. We will require ET network companies to supply evidence

[132] Microsoft Word - Ofgem economic lives of assets 15 Dec FINAL

as part of the RIIO-ET3 business plan submissions demonstrating how the average economic asset life of new assets built during RIIO-ET3 will evolve. We will consider whether this position remains appropriate following assessment of business plans.

Impact of changes to the calculation of the cost of debt

SSMC summary

8.87 In the SSMC, we asked the following consultation questions:

- FQ26: If a 'semi-nominal' cost of debt and WACC approach were to be adopted which results in an acceleration of cashflows, would this impact your responses to any of the questions above?

Summary of consultation responses

8.88 Most stakeholders who commented on this issue stated that a 'semi-nominal' cost of debt and WACC approach would not change their responses to any of the questions above.

8.89 Some of those respondents also noted that Ofgem should focus on the correct depreciation policy to mitigate asset stranding risk for gas and reflect actual asset lives for ET. Ofgem was advised that it should not mask risk issues with policy choices which appear to accelerate cashflows.

8.90 One DNO responded that a 'semi-nominal' cost of debt and WACC approach would reduce the need to pull the financeability levers as hard to support the significant investment programme that ET must deliver in ET3.

SSMD decision and rationale

8.91 As detailed in Chapter 2 in relation to the treatment of inflation, we have decided to implement option 1 and calculate the allowed return on debt assuming a nominal allowance for the fixed debt component of the notional capital structure.

8.92 We note that most respondents said that a 'semi-nominal' cost of debt and WACC approach would not change their responses to any of the questions posed in the SSMC on depreciation.

8.93 Whilst the decision on depreciation policy is not dependent on the debt indexation decision, we note that implementing option 1 will result in less upward pressure on the RAV (less indexation). This means that there will be less RAV to repay over time and so depreciation rates may need to change.

8.94 We will include the impact of changes to the calculation of allowed returns on debt, including any implementation periods, when determining the correct regulatory depreciation policy. We will continue to work closely with all relevant stakeholders in formulating regulatory depreciation policy. These considerations will form part of the further engagement that we plan for the GD and GT sectors as laid out in paragraphs 8.59 and 8.60 and will feed into the metrics that we are using to assess the different regulatory depreciation policy options for GD.

9. Return on Regulated Equity (RoRE) and Return Adjustment Mechanisms (RAMs)

Introduction

9.1 RoRE is a measure of returns earned by equity investors that includes the 'base' allowed return on equity, operational out or underperformance and financing out or underperformance. The purpose of RoRE is to allow effective comparison of earnings potential or outcome across companies that are very different in size. For RIIO-2 and ED2, we modelled and published potential RoRE ranges for companies to show the potential out and underperformance outcomes for a given set of sensitivities, before the application of any RAMs (see below). Annually, we ask companies to report on outturn RoRE with commentary on operational and financial drivers of out or underperformance as part of creating transparency around overall performance.

9.2 The purpose of RAMs is to provide protection to consumers and investors in the event that network investor returns (as measured by RoRE) are significantly higher or lower than anticipated at the time of setting the price control.

9.3 Consumers and investors benefit from RAMs as they will be protected against the possibility of unreasonably high or low returns in the RIIO-3 price controls. RAMs will help to ensure the fairness of RIIO-3 by protecting consumers and investors against ex post overall returns from network price controls deviating greatly from ex ante expectations.

Anticipated RoRE ranges for RIIO-3

9.4 For the GD and GT sectors, we are minded to keep an overall risk profile – and set a RoRE range – that is broadly in-line with that for RIIO-2, reflecting the stable policy environment we are seeking to maintain, including the potential further acceleration of RAV depreciation to mitigate any increase in asset stranding risk. In ET, we are minded to slightly increase the overall risk profile and RoRE range for RIIO-3, with the potential for a more pronounced increase for the subsequent price control (all else being equal). This is on the basis of:

- A stronger incentive package, driven by the introduction of delivery incentives for the Accelerated Strategic Transmission Investment (ASTI) programme. As the delivery dates will be back-ended in RIIO-3, with some falling beyond 2031, the impact on RIIO-3 RoRE ranges is expected to be modest, but potentially more pronounced in the following price control if

companies are out or underperforming. We note that we will introduce similar incentives for the delivery of CSNP projects, however, these are not likely to crystallise until after RIIO-3. To a lesser extent, this is also driven by a potential increase to the strength of the connections incentive/s (alongside amending its design) to highlight its importance in the context of the wider connections reform; and

- Intending to maintain a risk profile for totex that is broadly unchanged from RIIO-2, in the round, through our package of risk-mitigating load-related uncertainty mechanisms and our approach to setting the totex incentive mechanism (TIM).

9.5 Precise RoRE ranges will be published in our determinations in 2025 after review of business plans.

RAMs

SSMC Summary

9.6 In the SSMC, we considered rolling over the existing RAMs methodology from RIIO-2 because we currently have no evidence to suggest that a methodology change would be necessary or desirable.

9.7 We stated that we do not intend to make a decision on the adjustment rate or on threshold level at SSMD. Our reasoning being it would be preferable to set these parameters once we have a more complete picture of the overall price control package and in light of having reviewed business plans.

9.8 Under RIIO-3, there are likely to be programmes which form a considerable proportion of overall business plan spend and potential ODI outcomes (eg ASTI).[133] This then creates a risk that under/overspend and/or ODI reward/penalties for a specific programme trigger the threshold of RAMs and dilute or distort the incentive power of RAMs in respect of the 'BAU' business plan activities. We sought stakeholder views on how to best approach this.

9.9 We asked the following questions in the SSMC:

- FQ27. Do stakeholders have views or evidence as to why RAMs should or should not continue?

[133] Accelerated Strategic Transmission Investment (ASTI). The framework was introduced to both assess and fund large strategic onshore electricity transmission projects and incentivise the timely delivery of these projects. https://www.ofgem.gov.uk/publications/accelerated-strategic-transmission-investment-informal-licence-drafting-consultation

- FQ28. Do stakeholders have views or evidence as to whether the RAMs methodology should be amended, such as recalibrating the threshold or rates or including financial performance?
- FQ29. Do stakeholders have views or evidence as to whether there should be separate RAMs for 'BAU' parts of the business and specific programmes, such as ASTI?

9.10 In the following paragraphs we tackle the issues within these questions and the associated responses.

Should RAMs feature in RIIO-3

Summary of consultation responses

9.11 A small majority of respondents were in favour of retaining RAMs. Several stakeholders said they supported RAMs if appropriately calibrated and used. One stakeholder highlighted RAMs serve a purpose as there is no other mechanism proposed in RIIO-3 that protects against systemic out/under performance.

9.12 One GDN stated that their focus groups have shown public/customer confidence in the energy industry is low. They stated that RAMs can support customers' confidence in network companies delivering the infrastructure needed for the energy transition.

9.13 A minority of network companies argue RAMs are unnecessary in a properly calibrated price control. They stated that RAMs undermine or risk undermining the incentive mechanisms and can be harmful to consumers and investor confidence. They stated RAMs may even discourage laggard companies from 'catching up' as underperformance is also shared. One DNO highlighted it is not unfeasible for a network that is performing poorly operationally to be granted additional effective subsidisation from customers, while also being overfunded in respect of its debt costs. RAMs reduce the incentives to maximise efficiency and as a result, cause consumer harm in the longer term.

SSMD decision and rationale

9.14 We agree with stakeholders who see RAMs as a helpful mechanism that can improve confidence in the sector (for both consumers and investors). We also note the potential to undermine the incentive properties of the price control regime if RAMs are poorly calibrated.

9.15 On balance, we consider it appropriate to retain the RAMs. We do not consider there to be sufficient evidence that an alternative mechanism or method would be

more effective in achieving the aim of protecting investors and consumers from unreasonably high or low returns.

9.16 Any adjustments under RAMs will be made following the closeout of the RIIO-3 price controls and reflected in company revenues in the following price control. We believe this to be the simplest approach, which correctly measures the performance over RIIO-3.

Should the RAMs methodology be amended

Summary of consultation responses

9.17 Several network companies stated that the RAMs methodology should stay the same to allow for stability and simplicity. They argued that narrower thresholds would risk damaging the incentive properties of other parts of the regulatory framework as incentives are significantly reduced once a network triggers the RAM. They also stated that broader thresholds would offer less protection to consumers and investors. Several GDNs currently see no reason to deviate from the current thresholds that are in place until there is evidence to justify this. Network companies also saw a benefit in preventing potential unintended consequences on licensees and consumers by retaining the status quo.

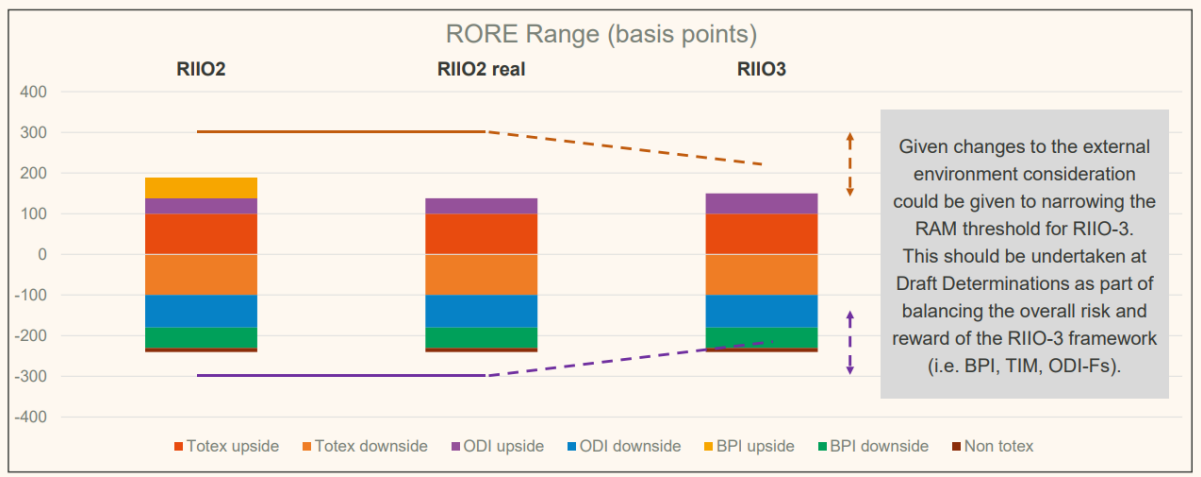
9.18 One TO considered it vital that any RAMs that exist should not reduce returns below the allowed Cost of Debt; otherwise, Licensees become at risk of being unable to meet their licence obligations and being unable to service debt interest payments.

9.19 One DNO said the definition of Output Delivery Incentive (ODI) performance included in the RAM assessment should include the impact of guaranteed standards payments.

9.20 Several network companies agreed with Ofgem's proposal to calibrate thresholds and rates at the draft determination stage in order to minimise negative effects, such as disincentives to drive performance forward. Network companies stated that the design of the overall price control package, and incentives within that, should be concluded before setting thresholds.

9.21 One GDN stated that thresholds and rates should be kept under review and set based on what the overall risks and opportunities are present within the price control. They recommend the RAM thresholds are reviewed in light of decisions around the wider framework and could be narrowed to ensure that customers and networks are insulated from the risks of miscalibration of the framework (Figure 18).

Figure 18: Adjusted RAMs thresholds



Source: Cadent

9.22 Citizens Advice stated company performance across the RIIO-2 price controls should be reviewed and argue that this will inform whether recalibration of RAM methodologies is required. Centrica stated that Ofgem should assess whether the thresholds are too far away from the allowed rate of return.

9.23 Citizens Advice said that RAMs should include financial performance. They argue that RAMs do not fulfil its purpose if financials are excluded. Two network companies shared a conceptually similar view, but argued that excluding financing and tax skews the results in favour of the customers.

9.24 One DNO said equity has to pick up the impact of financing and tax performance and therefore assessment of equity is incomplete without including these factors, but also stated that given RAMs have only just been introduced for RIIO-2, there is no evidence to suggest that recalibration of the thresholds is necessary or justified at this time. One GDN said excluding financing and tax limits the usefulness of RAMs, and makes it inconsistent with RFPR submissions on RoRE.

9.25 Several network companies argued against including financing and tax. One DNO said this would amount to a sharing factor on the cost of debt through the 'back door'. One GDN argued it will create material additional complexity and increase the risks of distorting incentives across the whole price control.

9.26 One TO stated that networks provide significant data on their debt book and cost of debt, and allowances for new debt costs are based on a relevant benchmark index. They argue this transparency means information asymmetry is not an issue in the context of financial performance, reducing the need to include it within the scope of a RAM. Furthermore, they stated that following the inflation decision issued by Ofgem, the use of a RAM type threshold to cap or share debt

outperformance/underperformance to address the leverage effect had already been ruled out. Accordingly, they argue it would create regulatory inconsistencies and confusion to change this decision so shortly after it was made.

SSMD decision and rationale

9.27 We broadly agree with respondents that it is likely to be preferable to set these parameters once we have a more complete picture of the overall price control package, the potential RoRE ranges and in light of having reviewed Business Plans. We will therefore consult on proposals for these parameters as part of our Draft Determinations. As part of setting the adjustment rates and threshold levels, we plan to review the performance of GD&T companies to date in RIIO-2.

9.28 We do not currently consider it to be in the interest of consumers to include financial performance when calculating RAMs. We will keep this position under consideration as we assess the implementation of our proposed changes to debt allowance methodologies, and will confirm our approach at DDs. Our rationale for following this approach is set out below.

9.29 We are aware of the delicate balance in setting the thresholds appropriately as to not undermine incentives for companies and by extension undermining investor confidence, whilst simultaneously protecting consumers. We note the differing views from stakeholder on whether we should include financial performance within RAMS.

9.30 RAMs are intended to serve as a protective mechanism when returns are significantly outside ex ante expectations. A material potential cause of unexpectedly high returns is information asymmetry between Ofgem and the network companies when setting totex levels and incentives. In contrast we rely on external, outturn indices for setting the cost of debt (and have expanded our requirements for reporting embedded debt). As such we do not see the same asymmetry around financial performance and therefore consider it more appropriate to use a pre-financing measure of profitability for our RAM calibration.

9.31 In addition, we use a notional structure when setting allowed returns on capital for network companies. This approach offers a key protection to consumers by ensuring that they are not exposed to the financing choice (and outcomes) of their suppliers. Rather, we consider the risks and rewards of these decisions should sit with company management alone. Our approach on this matter was considered in detail by the CMA in the appeal of RIIO-2. Here, the CMA stated that it agreed with GEMA that financing choices, and the risk and rewards that

come from those choses, sit most appropriately with companies and their owners.[134]

9.32 While including financial performance in RAM calculations may allow consumers to share in the benefits of network company outperformance, it would also expose them to higher costs if financing decisions lead to higher costs of capital than provided via our allowance. On balance, we do not consider exposing consumers to this risk to be in their interests.

9.33 We also note that the bulk of recent financial outperformance has been driven by the impact of the inflation leverage effect, which we are addressing at source (see Section 2).

Should there be separate RAMs for specific programmes

Summary of consultation responses

9.34 One GDN stated that if there is material re-opener/government policy change, such as on heat policy, then the impact of this re-opener could be included in a separate RAM. This is because it may have a different risk profile to the core totex.

9.35 Several network companies stated that large strategic programmes of work should be excluded from a BAU RAMs. These large value strategic programmes of work could have a disproportionate impact on the RAM and should include their own mechanisms to protect customers and companies from material deviations from expected spend.

9.36 One TO said they do not consider there to be evidence that suggests separate RAMs would be relevant to them. Another TO said the introduction of separate RAMs would make the price control more complex. Introducing separate RAMs should therefore only be considered if it will help to 'improve' the price control elsewhere.

9.37 Several network companies were against the introduction of separate RAMs for specific programmes. One DNO said a RAM takes a holistic view, and should remain as such, if this type of mechanism is to remain in place. They said it makes no sense to start applying RAM-type adjustments to individual policy components. Two GDNs said there is little merit in separating RAMs into BAU

[134] CMA (2021), GD&T Licensees vs the Gas and electricity Markets Authority, Final Determination – Volume 3: Individual Grounds, paragraph 14.145. Note: The CMA's findings on this issue are subject to ongoing legal proceedings. Our views here are subject to these proceedings.

activities and other specific programmes for GDNs, given ASTI only relates to Transmission. Furthermore, separate RAMs for separate activities would add additional complexity and further increase the risk of distorted incentives. One GDN also argue that incentives which have individual caps/collars already effectively have an incentive-specific RAM in place, meaning this additional proposal would also be duplicative.

9.38 Centrica stated it is unclear whether there should be separate RAMs for 'BAU' parts of the business and specific programmes. They recognised there may be a case to be made for separate RAMs that are tailored for the major projects regime since there may be a greater risk of systemic out performance given the 'light touch' ex ante cost assessment.

9.39 One DNO argued it is the overall level of operational RoRE performance that is important and there should be no need to split this into separate components if both individual incentives and the RAMs thresholds are appropriately calibrated.

9.40 One TO welcome clarity from Ofgem on the potential views/programmes available for specific ASTI RAMs given ASTI is already subject to a regulatory regime with applicable delivery penalties. In the absence of proposals, they did have a view to present on this on separate RAMs and invited clarity as to how this would minimise the potential risks to the BAU business plan incentives.

SSMD decision and rationale

9.41 We broadly agree with the view submitted by stakeholders in regard to RAMs for the GD and GT sectors. Absent large projects, there does not appear to be a compelling reason to introduce separate RAMs for these sectors. As a result, we have decided to roll over the existing methodology for RIIO-GD3 and GT3.

9.42 For ET, there does appear to be evidence supporting the introduction of separate RAMs, specifically a risk that major projects overwhelm the outcome and reduce the relative strength of the rest of the incentives package that represent 'BAU' operations. We will continue to work with stakeholders to assess the benefits and drawbacks of introducing a separate RAM for major projects and will confirm our approach for RIIO-ET3 at DDs in light of decisions made in relation to the structure and anticipated outcomes of major projects in the ET sector.

10. Other financial issues

Capitalisation rates

SSMC summary

10.1 Capitalisation rates are the proportion of costs added to the RAV and paid by consumers over time (slow money), rather than paid within the year incurred (fast money).

10.2 In general, the regulatory capitalisation rate broadly reflects the split of capital expenditure (capex) and operating expenditure (opex) expected over the price control, referred to as the "natural" rate. Setting this rate accurately ensures that charges over time are fair to both existing and future consumers.

10.3 In RIIO-2, Ofgem implemented two capitalisation rate "buckets": one for ex ante allowed totex and one for re-openers. This was because Ofgem anticipated a much larger proportion of totex to be allowed via re-openers than in RIIO-1 which would be mostly capex. These two buckets allow the overall capitalisation rate to change as additional re-opener funding is allowed.

10.4 Both buckets of expenditure have their capitalisation rate fixed ex ante for the duration of the price control.

10.5 In the SSMC, we asked the following questions:

- FQ30. Is there a case for altering the capitalisation rate modelling approach between sectors (eg removing the multiple bucket approach for GD)?
- FQ31. What are your views on retaining an ex ante capitalisation rate for allowed totex, but reporting an outturn capitalisation rate for the purpose of calculating the totex incentive mechanism?

Summary of consultation responses

10.6 In responses to FQ30, a majority of the 12 responses favoured retaining the existing approach. Network companies all agreed on the principle of aligning regulatory capitalisation rates to natural capitalisation rates, but there were different proposals on how to do this.

10.7 Six networks suggested no change to the RIIO-2 method, and two networks did not explicitly state a preference only emphasising the importance of aligning natural and regulatory rates.

10.8 Two networks proposed adding greater flexibility by allowing the re-opener bucket's capitalisation rate to be updated during the price control. This would

reduce mis-matches between the ex ante regulatory rate and the natural rate, in cases where the balance of capex and opex is different from the ex ante assumption.

10.9 One DNO, was in favour of a single overall capitalisation rate. However it recognised that the two bucket approach may be suitable for some sectors where significant levels of totex would be covered by re-openers and other uncertainty mechanisms.

10.10 Sustainability First, the only non-network respondent, argued that capitalisation rates could be used proactively to profile revenues over time in order to balance inter-generational equity against short-term cost of living pressures. It pointed to Ofwat's "Pay as you go" capitalisation methodology as a slightly more flexible approach.

10.11 In response to FQ31, nine of the 12 responses were opposed to the proposal of reporting an outturn capitalisation rate in order to calculate the totex incentive mechanism. Respondents argued that this could create a direct incentive for networks to direct activities towards RAV growth during the price control, which is an incentive that the totex approach is designed to eliminate.

10.12 Stakeholders also argued that this approach would not be appropriate in cases where the selected ex ante capitalisation rate intentionally differs from anticipated natural rates.

10.13 Two responses did not state a clear position on the question, and only one response favoured an ex post approach to reporting capitalisation rates. However, this response did not reference the retention of the ex ante target rate for applying the totex incentive mechanism, and requested further discussion of the proposal. As such it is not clear that this response favoured the proposed methodology as was presented in the example workings that we provided with the SSMC.

SSMD decision and rationale

10.14 We have decided to retain the RIIO-2 approach in RIIO-3. We believe that it provides a good balance between targeting the natural capitalisation rate, providing ex ante certainty, and allowing for a degree of flexibility for activities with uncertain levels of spend at the time of setting the price control.

10.15 We intend to set the bucket 1 and bucket 2 rates to reflect licensees' anticipated natural capitalisation rates during RIIO-3, whilst at the same time setting rates that are reasonably consistent within each sector.

10.16 We will devise a methodology for determining the capitalisation rates, based on detailed data that we will request from licensees. This will be carried out prior to Draft Determinations.

10.17 We have decided not to change to using outturn capitalisation rates as part of the calculation of the totex incentive mechanism. We believe that the benefits are not clear enough to justify a change to the current approach.

10.18 We note Sustainability First's point that capitalisation rates could be used to change the distribution of revenues over time in order to manage short-term pressure on consumers. However, we believe that setting the capitalisation rates in line with natural rates provides a fair distribution of costs across the operational lifetime of the investment. We discuss potential measures than can be used to manage cashflow issues further in Section 5 on Financeability.

Pension scheme established deficit funding

SSMC summary

10.19 Our current policy sets a commitment to consumer funding of deficits in defined benefit pension schemes, which were generally in existence before the energy network sector was privatised. To reflect this commitment, our price controls provide a form of pass-through funding by consumers of pension scheme established deficits (PSEDs) in respect of those attributable to service before certain specified cut-off dates. We last updated our policy on this in April 2017.[135]

10.20 The allowed revenue that network companies can recover under this policy is reviewed on a triennial basis as a 'reasonableness review'. We recently performed this review and set a new established deficit pension allowance effective from 1 April 2024.[136]

10.21 We also noted that most schemes are now over 90% funded, with some schemes in surplus. We flagged that we consider that this may be an appropriate time to carry out a review of the policy for funding PSEDs and who should bear the relevant risk in the future. Our review will be subject to a full consultation process. Any outcomes of a policy review would only be effective from 1 April 2027 at the earliest and we may also consult on the most appropriate date from which any policy changes should be effective.

[135] Decision on Ofgem's policy for funding Pension Scheme Established Deficits
[136] Revised pension allowance values and completion of 2023 reasonableness review

Summary of consultation responses

10.22 No stakeholder presented evidence on this issue.

SSMD decision and rationale

10.23 For the business plans, we expect network companies to assume pension allowances for the relevant portion of PSEDs during the RIIO-3 period that reflect the outcome of the recent triennial review effective 1 April 2024 and no change to the existing policy.

Directly renumerated services

Introduction

10.24 Directly Remunerated Services ("DRS") are specific activities of the network companies that are settled outside of the normal regulatory price control. Companies are allowed to charge their customers directly for certain services performed. For instance, a network company may enter into a commercial agreement with a third party such as a telecoms provider to lease out unused space on its grid infrastructure for the placement of satellite dishes or pylons. The telecoms provider would then pay a rental fee directly to the network company, according to the terms of that agreement. These services are "directly remunerated" by the customer rather than through Ordinary Transportation Charges.[137]

10.25 The policy intent across sectors is to avoid consumers paying for a service for which the network companies have already been remunerated. Costs associated with these services are paid for directly by the specific party (or parties) requiring the service. As such, these costs should not be factored into the network companies' cost allowances, to avoid double-counting.[138]

10.26 Ofgem will forecast the expected revenues and costs from the network company providing these services and reflect these when setting the allowances at the beginning of the price control. Where the actual revenue earned or cost incurred differs from original forecasts, in some cases, it may be appropriate to true-up this difference. The need for a true-up depends on the category of services and whether the costs and revenues are incentivised.

[137] https://www.ofgem.gov.uk/sites/default/files/docs/2018/12/riio-2_finance_annex.pdf pp.73

[138] https://www.ofgem.gov.uk/sites/default/files/docs/2018/12/riio-2_finance_annex.pdf pp.74

SSMC Summary

10.27 In the SSMC we proposed a continuation of the existing DRS policy and methodology for RIIO-3, and asked the following questions:

- FQ32: Are there any reasons why the RIIO-3 approach to directly remunerated services should differ from RIIO-2?
- FQ33: Do stakeholders have any reasons or evidence to suggest more directly remunerated service categories are necessary?

Summary of consultation responses

10.28 In response to FQ32, stakeholders were generally supportive of DRS. However, some stakeholders requested clarity and/or wanted Ofgem to consider changes.

10.29 One TO asked Ofgem to consider allowing networks to keep a proportion of profit for DRS services where there is no statutory obligation to complete the works. They argue the ability to share profits would give them and other licensees the incentive to participate further in these services and generate more revenue that can be shared with consumers.

10.30 One GDN said that due to the fast-changing environment regarding delivering net zero, it is timely for Ofgem to look at whether the current rules around directly remunerated services best support net zero delivery across the sector.

10.31 One TO proposed that TOs and Ofgem should take the opportunity to review the methodology for the capture and reporting of Connection Services activity, in relation to the presentation of connection asset funding to better demonstrate transparency of totex performance and calculation of RoRE. They suggest this collaboration can be a part of forthcoming Cost Assessment WGs.

10.32 One DNO company suggested a change in the use of DRS10 income and costs forecasts. They highlighted that for RIIO-ED2, forecasts were simply deducted from totex allowances as a post benchmarking adjustment. They argued that this creates an incentive for companies to include a low forecast as there would be no impact on the totex benchmarking results from doing so. They asked for Ofgem to make its policy intent clear regarding whether the totex incentive mechanism sharing factor will apply to the full value of any net income, or just the difference between actual and forecast values.

10.33 In relation to FQ33, a majority of respondents were in favour of continuing the current approach. Several network companies said that no further categories are necessary if 'miscellaneous' is continued.

10.34 One GDN said that given the downside risk and uncertainty facing GDN's, there may be value in conducting more consented or de minimis activity if utilisation of the network falls, but assets are still required. They believe it is in all stakeholders' interest to incentivise some incremental utilisation of assets and workforce.

10.35 Sustainability First say they expect disconnection costs to be a growing issue in GD3 and say there is currently a lack of clarity as to how these are treated. They request a wider policy debate more generally with DESNZ, Ofgem and other stakeholders as to whether, on fairness grounds, these costs should be socialised or directly remunerated. The lack of clarity on the appropriate treatment of disconnection services was also raised by network companies.

SSMD decision and rationale

10.36 We have decided to continue to use the DRS methodology in place in RIIO-2. We are currently satisfied with the operation of this mechanism. However, we welcome further evidence and information from stakeholders on considerations such as how DRS can support net zero and the benefit to consumers in allowing network companies to keep a portion of the profit for DRS services when they have no statutory duty to complete the work. We will engage further with stakeholders to collate views on how we can improve transparency of totex performance and calculation of RoRE.

10.37 The issue of the potentially increasing disconnection costs and how they should be treated was highlighted by several stakeholders. We are reviewing this area to determine whether regulatory change is needed to the current disconnections charging policy and Ofgem will be publishing an open letter in due course. For more information, please see GD annex.[139]

10.38 The suggested change of DRS10 highlighted in paragraph 10.32 is only relevant to the ED sector. Any change to the DRS10 methodology will therefore be made in the forthcoming ED price controls. However, "Value added services" are part overall totex allowances (ex ante) as well as reported actuals (ex post). The difference is shared via TIM.

[139] For more information on disconnection costs, please see GD annex, paragraph 4.234.

Disposal of assets

Introduction

10.39 Where network assets are no longer required, network operators may dispose of or relinquish operational control, subject to consent and where this is clearly in consumers' interests. They may also recover from third parties any costs in respect of damage to their network. Some of these transactions can include the disposal of land. Consumers should benefit from receiving a share of the proceeds from the sale of assets no longer required.

10.40 The financial impact of disposing of assets includes the following:

- cash proceeds of sale at an arm's length transaction to a third-party external to the licensee group;
- transfer at an arm's length fair market value of assets within the licensee group;
- cash proceeds of sale of assets as scrap; and
- amounts recovered from third parties, including insurance companies, in respect of damage to the network.

10.41 In RIIO-2, it was decided that where a company has disposed of an asset,[140] we would net the cash proceeds off against totex from the year in which the proceeds occur before it was subject to the TIM. This decision followed a consultation where all eight respondents were in favour of this policy change.[141]

10.42 In the RIIO-2 Final Determination[142] it was decided that where an asset is transferred to a company within the licensee group and then subsequently sold to a third party, we may review the final sale to ensure it was undertaken at a fair market price and in the best interests of consumers. Where there was a difference, we would consider whether a further adjustment to Totex was required. The licensee would be required to inform Ofgem promptly of any completed sale to a third party, setting out:

- the amount of the proceeds from the third party; and

[140] The sale of a gas holder site that is no longer operationally required is one example of an asset disposal.
[141] https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf pg.123, para 11.31
[142] https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf pg. 123, para. 11.32

- the factors which the licensee considers account for any difference between the transferred amount and the proceeds from the third party referring in particular to:
    - the general movement in market prices of similar assets; and
    - costs incurred by the company in improving or maintaining the asset between the date of transfer and the date of sale to the third party.

SSMC Summary

10.43 In the SSMC we said we are considering a general continuation of the existing disposal of assets policy and methodology for RIIO-3.

10.44 We said we would consider the case to treat all the incentivised net proceeds as fast money, 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.[143] On the other hand, doing so could result in a significant revenue and cashflow reduction in a subsequent year. This could have unintended adverse consequences for licensees' financial resilience with respect to their debt service coverage ratios for debt compliance and credit ratings purposes.

10.45 We said that to facilitate repurposing of assets, we will need to enable the transfer of assets between RIIO-3 and the Hydrogen Transport Business Model. We said we would explore what reporting information will be necessary to ensure objective identifiability of repurposed assets in advance of any transfer. This will also help to ensure the data for cost benchmarking remains appropriately like-for-like in a scenario where companies replace assets with new assets at a higher cost to ensure hydrogen capability or optionality.

10.46 In the SSMC, we asked the following questions:

- FQ34: Do stakeholders have views or evidence in support of or objection to treating all asset disposals as fast money?
- FQ35: Do stakeholders have views or evidence as to what reporting information should be provided to Ofgem (under the RPFRs or other forms) to ensure objective identifiability of repurposed assets and cost data remains appropriately like-for-like?

[143] https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf pg. 124, para. 11.35

Summary of consultation responses

10.47 In relation to FQ34, a majority of the respondents were in favour of retaining the current approach.

10.48 Several network companies said there is no evidence in support of a change to 100% fast money. They argued that a move away from the current approach might also raise concerns that the treatment would not be consistent with the assumptions embedded into the original allowances. Several network companies agreed with Ofgem on the potential downsides in changing the methodology to 100% fast money. Several GDNs said the intergenerational consumer case for change is not strong enough to justify a change.

10.49 One GDN highlighted that given the potential scale of such asset repurposing and the associated benefits to customers, the framework for doing so (both in terms of asset transfer values and incentivisation) will need careful thought. They welcomed the opportunity to discuss these issues at an early stage in a broader industry forum to maintain industry and investor confidence and avoid any unintended consequences.

10.50 One GDN suggest no change is necessary up to a certain threshold.

10.51 One TO supported the methodology change to treat all asset disposals as fast money. A few network companies said large asset disposals (eg for repurposing) might warrant different treatment and be subject to a re-opener provision with a proposal to treat slow/fast percentages under the circumstances at the time.

10.52 One TO argued that based on the level of past and current disposals, they would not expect the proposed change to cause any financial resilience issues. They asked for clarity from Ofgem on how it plans to deduct disposals from fast money in the PCFM as this could create additional complexity. The TO wanted to ensure that the calculation and treatment of disposal proceeds is included in the RIGs and stated that this is currently missing in RIIO-ET2, contrary to point 10.23 of the SSMC. They also stated that RRP needs updating to include a table to capture disposals.

10.53 One DNO stated that the consultation was silent on the treatment of forecast disposals proceeds in setting totex allowances. They stated that in RIIO-ED2, Ofgem deducted forecast disposals proceeds from totex allowances as a post benchmarking adjustment. They argued that the RIIO-ED2 approach therefore offers no incentive for companies to include their best forecasts of disposals proceeds. They questioned the need for any such deduction from allowances if

Ofgem's policy intent is to allow sharing of proceeds between customers and network operators but, if an adjustment is to be made, it should be made prior to benchmarking and Ofgem should make its policy intent clear.

10.54 One TO stated that for existing activities (disposal of assets that have been decommissioned), they see no significant drivers for changing the RIIO-2 approach to the former as existing customers should benefit from assets that are likely to have reached the end of their economic life and therefore have been paid for by natural gas customers. As such, they say it appears appropriate to return proceeds to consumers as quickly as possible for reasons of inter-generational fairness.

10.55 In response to FQ35, one TO stated that a distinction should be made between asset disposals in line with existing activities (ie disposal of assets that have been decommissioned) and asset disposals by the natural gas business that are more akin to transfers to other business models ie CCS and hydrogen. They are of the view that a mechanism should be established to appropriately value and transfer relevant assets to be repurposed to RAVs of the other businesses (CCS or hydrogen).

10.56 One TO stated that given the RAV is not akin to an asset register, a methodology will need to be agreed that applies an appropriate value to each asset transferred. Any related reporting will therefore need to cover as a minimum information that provides Ofgem technical data that clearly demonstrates which physical assets have been transferred and related operational detail, but also a clear demonstration of how the agreed valuation methodology has been applied to each asset. One GDN stated that the collection of information via the RFPR, or other mechanisms must be proportionate to the demonstrable benefit it has to future decision making. They stated that they would be supportive if changes to reporting meets this test.

10.57 One GDN stated that the task of identifying relevant information and the cost/benefit of this should be delegated to the cost assessment working groups. One GDN suggest FQ35 should be revisited post the UK Government's upcoming decision on the suitability of hydrogen for heating homes in 2026.

10.58 One GDN stated they do not anticipate any significant repurposing of gas distribution assets during the RIIO-GD3 period, as they will be required to serve the natural gas consumers. They also suggest revisiting the question later and welcome joining a working group to discuss how best to approach this in RIIO-3 with a view to its implementation in subsequent price controls.

10.59 One GDN stated that it did not see scope for material repurposing in GD3. They expect that any material repurposing projects emerging would be dealt with by re-opener applications. They suggest data requirements can be set as part of that process.

10.60 One company stated that given Ofgem's Net Zero Carbon duty, the repurposing process should be given a strong incentive impulse underpinned by efficient process.

SSMD decision and rationale

10.61 We note that a majority of stakeholders were in favour of retaining the current treatment of asset disposals. However, we consider the proposal to treat disposals of fully depreciated assets as fast money has merit due to intergenerational fairness.

10.62 We are not assured that the current approach does not create the potential for unfair outcomes for consumers. As a general principle, assets that have been fully depreciated have been 'paid for' by consumers, and consumers should benefit from any disposal proceeds.

10.63 We will further review what impact moving to an approach of 100% fast money would have on revenue and cashflow in years following an asset disposal. This will inform us of the potential impact of our proposed change on financial resilience with respect to debt service coverage ratios for debt compliance and credit ratings purposes. In addition, we are also reviewing how we can ascertain whether an asset has been fully depreciated. As one stakeholder highlighted, RAV is not akin to an asset register. Therefore, we will need to develop our thinking around how this can be achieved before progressing this issue.

10.64 We do agree with stakeholders that the UK Government's decision on the suitability of hydrogen for heating homes in 2026 will have a big impact on the question of objective identifiability of assets. We also acknowledge that repurposing will play an important part in reaching net zero.

10.65 We are considering potential options on these issues and will engage further with stakeholders on these points in the coming months.

10.66 In relation to the treatment of disposal proceeds is currently not included in the RIGs for ET2, we will review the RIGs and RRP and will pick up this issue in the relevant updating processes.

10.67 In relation to clarity on how forecasted disposal proceeds will be treated in RIIO-3, we expect to deploy the same approach used in RIIO-2 We will replace forecast

disposal net proceeds with out-turn figures as the price control progresses. This removes any misalignment of incentivisation resulting from quality of forecasts.

Transparency through RIIO-3 reporting

Introduction

10.68 We recognise that it is important that investors in the networks sector can achieve a reasonable return on their invested capital, and dividends are considered an important component of the equity return. As companies adapt to a variety of challenges over the coming years, most obviously the changes required to help meet net zero targets, maintaining best practice in corporate governance measures is likely to become increasingly important.

10.69 During the development of both RIIO-2[144] and RIIO-ED2[145] we identified several areas where we considered there could be improved transparency through reporting. These included:

- Executive pay/remuneration;
- Dividend policy; and
- Corporate governance and ownership.

10.70 Our focus on these issues reflected a recommendation to Ofgem from the January 2020 National Audit Office report on electricity networks.[146] This recommended that Ofgem should ensure network companies make it clear how much tax they pay; how executives are rewarded and how this links to quality of service for customers, and how dividend policies ensure companies remain sustainable. Several commentators (such as Citizens Advice) had also drawn attention to high levels of returns and made suggestions for reform.[147]

10.71 In our RIIO-2 Final Determinations[148] we introduced new reporting requirements for the disclosure of executive remuneration to a similar level to that required for UK-listed public limited companies and publication of sustainable dividend policies. These new reporting requirements were practically introduced via a new

[144] https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_finance.pdf
[145] https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/ed2_ssmc_annex_3_finance.pdf
[146] See paragraph 22d here: https://www.nao.org.uk/wp-content/uploads/2020/01/Electricity-networks.pdf#page=13
[147] https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/EnergyConsumersMissingBillions.pdf
[148] https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf

section on Corporate Governance, contained within the RIGs and RFPR template.[149]

10.72 In August 2022, the first round of the revised RFPR including the new corporate governance chapter was submitted by GD, GT and ET licensees. Levels of compliance and completeness against reporting requirements were noticeably variable.

10.73 Ofwat, in its Price Review 2024 (PR24) has asked companies to set out proposed dividend and performance-related executive pay policies for the period 2025-30.

10.74 Companies should commit in their dividend policies to clearly explain the payment of any dividend, including the base dividend yield, by reference to delivery of their obligations and commitments to customers, communities and the environment and long-term financial resilience. Based on an early view of allowed revenue in the final methodology, Ofwat considers 4% as a reasonable base dividend yield for the period 2025-30, although it notes certain circumstances where a lower base dividend yield may be appropriate (eg where companies must fund significant investment programmes, address pension funding concerns or operational issues, or improve financial resilience). In relation to the benefits that accrue to equity from the consequences of high inflation, Ofwat maintains the view that these should be retained or reinvested by companies and not distributed as outperformance, thus ensuring that customers benefit through improved supplier resilience and/or enhanced services.

10.75 Performance-related executive pay policies should clearly demonstrate that the criteria for awarding short and long-term performance related elements are substantially linked to stretching performance delivery for customers, communities and the environment. Policies should demonstrate how remuneration committees will take appropriate account of company performance overall, and wider compliance issues, as well as performance against specific metrics, when deciding on what, if any, award to make. Further, Ofwat is considering the introduction of a new end-of-period reconciliation mechanism which would allow adjustment of revenue allowances, so that customers no longer fund awards, if companies are unable to demonstrate their decisions reflect Ofwat expectations, including by reference to overall performance.

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

10.76 It is important that companies demonstrate with transparency how the decisions they make in declaring and paying distributions, and in awarding executive performance-related pay, take due account of matters that include long-term financial sustainability, delivering for customers and other stakeholder obligations. Fundamental to this is the principle that shareholder distributions and executive performance-related pay should fairly reflect performance, something which is key to helping ensure the legitimacy of the sector.

10.77 In this light, Ofgem has a clear expectation that the requirements of the RFPR corporate governance section are met in full and that remuneration and decision making in the interests of consumers and other stakeholders are an integral component of licensees annual reporting.

SSMC Summary

10.78 In the SSMC we asked the following questions:

- FQ36: Do you consider that the existing reporting requirements on executive pay/remuneration, dividends and corporate governance previously introduced for RIIO-2 price controls remain appropriate in helping demonstrate the legitimacy and transparency of company performance?
- FQ37: Do you have any other suggestions for clarifying or strengthening the reporting requirements with regard to executive pay/remuneration, dividends or corporate governance?

Summary of consultation responses

10.79 Eight stakeholders considered that the existing reporting requirements on executive pay/remuneration, dividends and corporate governance previously introduced for RIIO-2 price controls are sufficient and remain appropriate for RIIO-ED3.

10.80 Two stakeholders consider that existing reporting requirements in relation to executive pay/remuneration and dividends are excessive and that reporting in these areas should be limited to statutory related disclosure requirements.

SSMD decision and rationale

10.81 We have decided to retain the existing RIIO-2 requirements and we continue to have a clear expectation that the requirements of the RFPR corporate governance sections are met in full.

10.82 We do not believe that the existing RIIO-2 reporting requirements in relation to executive pay/remuneration are excessive. It is important that executive remuneration policies are well explained and that they demonstrate value for consumers. The purposes for disclosing executive remuneration and providing supporting commentary is so that the regulator and other stakeholders can see the link between executive pay and consumer deliverables and outcomes. Where directors' responsibilities are substantially focused on the regulated company and they receive remuneration for these responsibilities from elsewhere in the group, policies relating to this pay should be fully disclosed at the regulated company level.

10.83 We do not believe that the existing RIIO-2 reporting requirements in relation to dividends are excessive. Our key focus is that dividend policies are published and demonstrated to be sustainable and reflective of performance.

Annual iteration process (AIP) and financial modelling issues

Improving the price control model

SSMC summary

10.84 The AIP allows us to recalculate revenue allowances annually using an updated set of variables. This means changes to inputs, such as actual expenditure, can be reflected in the forthcoming AIP rather than waiting until the next price control.

10.85 At each price control we seek improvements to efficiency, simplicity, and flexibility of the AIP, recognising that these are trade-offs in some cases. To this end, we also propose to carry over procedural changes made in RIIO-ED2 into RIIO-3.

10.86 In the SSMC, we noted that we are open to suggestions for improving the PCFM along themes of:

- enhancing adaptability of the model;
- creating a consistent "core" of calculations that can be kept consistent between price controls;
- better documenting calculations and simplifying where possible; and
- considering whether modern data reporting demands a new approach to the PCFM. We are seeking feedback from broader stakeholders beyond the network companies who are the primary users of the PCFM.

10.87 In the SSMC, we asked the following question:

- FQ38. Do you have any suggestions on how to improve and future-proof the price control financial model, or use cases it could better support?

Summary of consultation responses

10.88 We received responses to this question from ten stakeholders, all network companies. Respondents were generally comfortable with the PCFM in its current form. Four respondents requested minimal changes to the model between RIIO-2 and RIIO-3, and there were no suggestions that the PCFM should move away from Excel as the basis of the model.

10.89 Two DNOs, made suggestions on changes to the broad structure of the model. One proposed that the PCFM's functionality should simply reflect the calculations required of it as a licence instrument, and that any additional functionality should be dealt with in a separate model. The other suggested that the PCFM should be allowed to become more complex in areas where it would provide greater accuracy and therefore fairer outcomes, for example in handling capitalisation rates and depreciation calculations.

10.90 Other responses made more specific recommendations or requests. These include:

- extending the PCFM timeline beyond that of the current price control;
- incorporating new tax allowance policies into the PCFM and truing up tax pool balances;
- splitting allowed revenue and its associated correction terms so that the constituent drivers of the true-ups are clear;
- reducing the sensitivity of the financeability metrics to specific inputs such as pass-through costs;
- modelling ASTI and similar distinct activity areas separately to the rest of totex, allowing for distinct depreciation, capitalisation and return parameters ; and
- address specific discrepancies in the price base of inputs required across the Regulatory Reporting Packs and the PCFM.

10.91 One GDN, proposed a change to the PCFM's annual correction term to allow it to be amortised over two years in order to reduce volatility in charges. It also suggested aligning charging years between GDNs and the National Transmission System to eliminate timing differences as a source of revenue volatility.

SSMD decision and rationale

10.92 Based on stakeholder responses, we have decided that the RIIO-3 PCFM will be based substantially on the RIIO-2 PCFM, with only modest incremental changes added. In the run-up to the RIIO-3 Draft Determinations we will continue to consider respondents' suggestions for improvements and will collaborate with licensees on implementing them via regular working group meetings.

Licensee self-publication of allowed revenue

SSMC summary

10.93 We proposed that licensees instead of Ofgem should be responsible to publish annually the model which provides the values that licensees must use in determining their allowed revenue (the licence term referred to as ADJR*). Ofgem would still be responsible for the PCFM and Price Control Financial Handbook (PCFH), the policies and methodologies for updating PCFM variable values, and the special licence conditions which define allowed revenue. Licensees would be required to follow these methodologies as set out in the PCFH and would then publish the PCFM on their websites with charging statements.

10.94 This proposal is a continuation of the decisions we made in the RIIO-GD&T to move away from a directed AIP. We think this process more clearly places the responsibility on the licensee, rather than Ofgem, to accurately estimate revenue as prescribed by their licence. We also hope it will make the process more agile by letting companies "hold the pen" instead of awaiting Ofgem to implement simple administrative changes.

In the SSMC we asked the following question:

- FQ39. 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?

Summary of consultation responses

10.95 11 stakeholders responded to this question, ten network companies and one energy supplier. Of the network companies, nine were in favour of the move to self-publication. Some of the conditions under which networks supported the proposal included: the timely provision of key inputs by Ofgem; provision of comprehensive guidance; that the PCFM remains a licence instrument and that Ofgem retain ownership and responsibility for making required policy or

methodological changes following changes to the licence; and that Ofgem continue to direct certain Variable Value terms.

10.96 Three networks also proposed changes to the timing of dry runs, the suggestion from National Gas that this would enable allowed revenue to be brought more up-to-date for charge setting purposes.

10.97 One TO was opposed to the proposal on the grounds that the current RIIO-2 approach already operates efficiently.

10.98 Centrica objected to the proposals on the grounds that it would increase uncertainty and volatility around charges for energy suppliers, leading to greater consumer detriment.

10.99 Centrica argued that a number of factors have contributed to an increased uncertainty around charges:

- poor quality forecasting by the ESO and network companies, and a lack of transparency about assumptions underpinning forecasts;
- the change for RIIO-2, to be continued to RIIO-3, that licensees are permitted to set tariffs based on forecast allowed revenues as opposed to ex ante revenues directed by Ofgem;
- the 2023 AIP changes that reduced two-year lags to one-year lags for adjustments to revenues due to over- and under-recovery, incentive performance, pass-through true-ups and actual expenditure; and
- the 2023 AIP changes that moved the AIP PCFM publication date from November to January.

10.100 The move to self-publication would, according to Centrica, exacerbate the above factors by reducing the transparency of the current AIP process, and removing the clear signals that the AIP PCFM provides, as a high-quality relatively early source of information on allowed revenue.

10.101 Centrica recommended that for self-publication to be workable without further consumer detriment, there should be a requirement for networks to publish no later than 30 November an early 'draft' version of the PCFM with obligations for networks to use 'best' views and with full transparency. Ofgem should provide common inputs such as inflation in order to ensure a rational calculation is produced and for consistency between networks.

SSMD decision and rationale

10.102 We have decided to proceed with the change to licensee self-publication of the model used to calculate allowed revenue. This will align RIIO-GD/T3 with RIIO-ED2, which we believe brings improvements in clarity of the process and of ultimate responsibilities.

10.103 We acknowledge the concerns raised by Centrica, though we do not consider that self-publication inherently exacerbates uncertainty around charges, provided the AIP timeline and dry-run process remains substantially the same. And whilst some of the issues raised are separate to the question of self-publication (for example the reduction in lags for revenue adjustments), we believe that measures such as timely provision of draft publications and improved transparency around assumptions can be addressed in future reporting working groups. These working groups can also be used to address other respondents' questions on the timing of dry runs.

Interest in prior year adjustments (time value of money)

SSMC summary

10.104 We proposed to use a single true-up mechanism with a uniform time-value of money (TVOM) for all types of prior year adjustments and true-ups, using nominal WACC as the rate.

10.105 This proposal would align RIIO-3 with RIIO-ED2, and would signify a change from the approach taken in RIIO-GD/T2 which applied two TVOM rates.

10.106 In the SSMC, we asked the following question:

- FQ40: What are your views on applying a single time value of money in the financial model to all prior year adjustments, based on nominal WACC?

Summary of consultation responses

10.107 Ten stakeholders responded to this question, all network companies. The respondents were divided with five being in favour and five being opposed to the proposal.

10.108 The five respondents in favour of the proposal argued that it is beneficial as a simplification of the price control and in order to align RIIO-GD&T with RIIO-ED2. Some respondents noted that the principles behind having two TVOM rates were still applicable, but that if we do apply a single TVOM then WACC is the correct rate. SSEN requested an explanation of why nominal WACC is used instead of real

WACC. NGET requested clarification on how Ofgem would apply caps, collars or other adjustments to forecasting penalties in light of changes to factors outside of Licensee control.

10.109 The five respondents opposed to the proposal all argued that the approach taken in RIIO-GD&T2 should be retained, reflecting the different risks and costs associated with the two forecasting errors. Two network companies referred to a paper by First Economics on the subject, which was first submitted to us for the RIIO-2 SSMC.

SSMD decision and rationale

10.110 We have decided to proceed with the change to a single true-up mechanism with a uniform TVOM using nominal WACC as the rate.

10.111 Whilst there are good arguments to support the retention of the current two rates, we believe that the change is a worthwhile simplification. Additionally with the move to licensees self-publishing their allowed revenue, this change eliminates a potential gaming risk when there are multiple rates for different sources of error.

10.112 We acknowledge that there are elements of forecasting for which a short-term cost of debt-based rate is appropriate, however we believe use of the nominal WACC is on balance the most appropriate rate to use as a single rate, given that many of the adjustments affect the size of the investor capital base. The First Economics report that was referenced by several network companies also emphasises the need to compensate at the full cost of capital level where the revenues being recovered are increasingly complex and variable.

10.113 Whilst the First Economics report principally argues that two rates are appropriate, it does not take into account the changes to the RIIO-ED2 Annual Iteration Process which we have decided to replicate in RIIO-GD/T3. We think this is a different circumstance that warrants standardising the true-up rates.

10.114 In response to SSEN's questioning of the use of nominal WACC instead of real WACC, there has been no change to the application of the WACC for determining the nominal adjustment term. In the current approach the real WACC is inflated to derive a nominal time value of money term. The same will be done under the new approach, and it is this nominal time value of money term that we have referred to as the nominal WACC.

10.115 NGET requested further details on the application of caps, collars or other adjustments to forecasting penalties. We will engage with licensees through

working groups and will provide further information at the Draft Determinations stage.