

Technical annex: Risk and return

Draft determination Annex 7





About the Utility Regulator

The Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs, Markets and Networks. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.



- and targeted.
- Be professional listening, explaining and acting with integrity.
- · Be a collaborative, co-operative and learning team.
- · Be motivated and empowered to make a difference.



Abstract

This sets out our proposals for risk and return. These are our proposals for remunerating equity capital and debt finance. This technical annex expands on the main body section 8 and relevant analysis relating to risk and return in business plan assessment annex 2.

Audience

This document will be of interest to SONI and potentially other stakeholders.

Consumer impact

SONI's TSO costs of running its business which we price control are typically around 2% of the NI consumers electricity bill. How it chooses to deploy the costs of running its business and performs its role has a larger impact on outcomes such decarbonisation, grid security and wider system costs (for example, system service, wholesale and transmission investment costs which make up part of the electricity bill for NI consumers); given the influence it has across the system. We incentivise SONI through the price control to deliver high quality service to contribute to these good outcomes.









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1. Introduction and overview of approach

Introduction

- 1.1 This document sets out and explains our draft determinations on the remuneration of equity capital and debt finance under the 2020-25 SONI price control. This includes our proposed WACC allowance and proposals for other elements of the overall allowed return.
- 1.2 It is in line with our broader approach to the SONI price control, which puts more accountability on SONI for the quality of its price control business plan than has been the case in the past. Our starting point for the review was SONI's proposals for different components of the overall remuneration of equity capital and debt finance, and the evidence and justification provided in support of these. We carried out a preliminary review of relevant aspects of SONI's business plan. This indicated that there was enough relevant evidence and consideration of issues behind SONI's proposals for it to be reasonable to take its business plan as a starting point.
- 1.3 On that basis, the primary question addressed by our targeted review is which specific aspects of SONI's proposals for the remuneration of equity capital and debt finance we should use for our draft determination and which aspects we should "intervene" on, to adopt an alternative approach or alternative figures.
- 1.4 In carrying out the targeted review of SONI's proposals, we have taken account of the following objectives:
 - Protection of customers against the risk of price control allowances for equity capital and debt finance being excessive (e.g. in relation to efficient costs of finance).
 - The aim that the price control allowances for equity capital and debt finance is not so low as to mean that a notional efficient TSO would not be able to finance the activities which are the subject of obligations under the regulatory framework.
 - Proportionality, for instance in terms of the level of staff/consultant resource and senior management time directed at the SONI price control review.
 - Prioritisation across the various different elements of work required to establish new price control arrangements for the SONI price control, including across different components of the work on remuneration of equity capital and debt finance and between this and other areas of the price control review (e.g. new evaluative performance framework).
 - The longer-term benefits to the quality of regulated companies' business plans, and to company accountability, from making use of evidence and proposals from business plans, where possible, in setting price controls.

1.5 In this context, a decision not to intervene on a particular aspect of SONI's business plan proposals is not necessarily a full endorsement of the approach used by SONI, or of the figure it had proposed. Our decision may reflect other considerations such as the need for prioritisation given the materiality of the issue and the availability of other sources of information.

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- 1.6 This section provides an overview of our approach to our review of different aspects of SONI's proposed remuneration for SONI's debt and equity finance through the SONI price control. We first recap on the regulatory approach we set out in March 2019, comment at a high level on the approach used in SONI's business plan, and then summarise the approach we have taken for different aspects of our draft determinations.
- 1.7 Throughout the assessment presented in this annex, we have been guided by our statutory duties, including (but not limited to) the duty to have regard to the need to secure that the TSO is able to finance the activities which are the subject of obligations imposed by or under Part II of the Electricity Order.¹
- 1.8 The data and analysis used for our draft determinations on the remuneration of debt and equity finance pre-dated the Covid-19 pandemic. We recognise that Covid-19 has affected, and will affect, financial markets, as well SONI's operations. As part of our draft determination consultation, we are seeking input from stakeholders on how specific aspects of SONI's cost of capital might be affected, and the potential implications for our final determination on specific elements of the remuneration of debt and equity finance through the SONI price control.

Our approach from March 2019

- 1.9 In our March 2019 regulatory approach, we summarised the main aspects of our proposed approach for the remuneration of equity capital and debt finance as part of the SONI price control. This drew on the outcome of SONI's appeal to the CMA in 2017. That document summarised key aspects of the approach as follows:
 - Remuneration to be determined for a notional efficient TSO licensee rather than the actual TSO licence (drawing on extensive regulatory precedent for this approach).
 - SONI's requirements for debt and equity finance to be linked to the various different services it provides and the activities it undertakes.
 - To build on the approach emerging from 2015-20 SONI price control and the CMA appeal so as to identify, and make allowance for, all layers of capital employed or needed to enable and support the notional TSO activities. This includes making use of different methods and sources of evidence to inform the determination of allowances for different layers of capital (e.g. WACC*RAB approach for some core activities plus margins approach for revenue collection activities).

¹ See Article 12(2)(b) of the Energy (Northern Ireland) Order 2003.



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- To recognise the role of equity within assumed capital structure in providing a buffer to enable SONI to accommodate the risks it faces under price control framework. This includes potential role of a parent company guarantee (PCG) in providing additional equity buffer beyond equity investment in RAB.
- Use of CAPM to provide estimates of the cost of equity, potentially drawing on adjustments for "operational gearing" (or similar) when applying data from other benchmark companies to the case of SONI.
- To consider case for adjustments to CAPM estimates for any asymmetric risk.
- To switch from RPI indexation to either CPI or CPIH indexation of the SONI RAB and revenue control for the 2020-25 period (without prejudice to what inflation measure is to be used for subsequent SONI price controls or for the price controls for other companies we regulate).
- To set remuneration of corporation tax liabilities through an approximate uplift on cost of capital allowances (e.g. pre-tax WACC approach) rather than use separate and detailed financial modelling of corporation tax liabilities.
- 1.10 We said that we would expect SONI's business plan to be consistent with the proposed approach set out above (and elaborated on in the Reckon LLP working paper published alongside the December 2018 regulatory approach consultation).

The approach from SONI's business plan

- 1.11 Our assessment is that, for the most part, SONI's business plan is well-aligned with the broad approach from the Approach decision document.
- 1.12 We discuss SONI's proposed approach in specific areas in more detail under the relevant topic areas in sections 2 to 14 of this appendix.
- 1.13 Some aspects of SONI's plan were less well-aligned. In particular, SONI made limited progress in linking its requirements for debt and equity finance to the various different services it provides and the activities it undertakes, and it did not present RoRE analysis of upside and downside scenarios to help inform on the risks faced by SONI.
- 1.14 We provide further comments from our review of SONI's business plan separately in Annex2.

Choice of price control inflation index

1.15 One preliminary issue concerns the choice of the inflation index to be used for the

2020-25 SONI price control. We cover this first as other elements, such as the allowed return on the RAB, need to be determined on a basis which is consistent with the approach to price control indexation.

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- 1.16 For our March 2019 regulatory approach, we took a decision, following stakeholder consultation, to switch from RPI indexation to either CPI or CPIH indexation of the SONI RAB and revenue control for the 2020-25 period (without prejudice to what inflation measure is to be used for subsequent SONI price controls or for the price controls for other companies we regulate).
- 1.17 In its business plan (appendix Q, pages 1-2) SONI said that it agreed with the rationale for the transition to CPI or CPIH, and considered CPIH to be the most appropriate index. SONI highlighted the following relating both to economy-wide factors and to recent UK regulatory precedent:
 - CPIH is recognised by the Office for National Statistics (ONS) as the most comprehensive measure of inflation and is used as its lead measure for inflation in the UK.
 - In April 2018, the UK government signalled its intention to transition away from RPI for indexation purposes, with an expectation that CPIH will be ultimately be the 'preferred index'.
 - In 2016, Ofwat amended company licences to confirm price controls from 2020 would be set by reference to CPIH or CPI. In 2017, Ofwat's methodology for the 2019 price review confirmed revenue allowances would be set by reference to CPIH. Ofwat also confirmed that indexation of the RCV would transition to CPIH.
 - In July 2018, Ofgem proposed to move away from RPI (for price controls) to CPIH. It decided to switch to CPIH rather than CPI on the basis that (1) CPIH is seen as the more comprehensive measure of inflation in the household sector and (2) Ofwat engagement with customers suggested a preference for CPIH.
- 1.18 Our view is that SONI has made a well-reasoned case for moving to CPIH indexation rather than CPI indexation. We have not identified a good reason to adopt a different position.
- 1.19 For the remainder of this annex, we proceed on the basis that for the 2020-25 TSO price control period both SONI allowed revenues and the RAB will be indexed to CPIH.
- 1.20 In its business plan (appendix Q, page 7) SONI said that it was critical that our decision on the cost of capital is consistently published in both nominal and real (CPIH-deflated) terms for the forthcoming price control period (2020-25) and for future control periods, to ensure that the WACC is estimated on a consistent basis over time and can be clearly compared on a like-for-like basis with the WACC determined for the current price control period (2015-20).

1.21 We did not consider that it was critical to present our decision on a nominal and CPIH-deflated basis. We considered that it was critical to be clear what indexation basis our allowances are determined with respect to; and we have sought to make clear where allowances are on a CPIH-stripped basis. Furthermore, in the individual sections explaining our approach to individual WACC parameters, we explain how CPIH inflation has been taken into consideration where relevant.

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- 1.22 In addition, to support comparability, our view is that a nominal WACC could be estimated by taking our allowed WACC on a CPIH-stripped basis and combining this with an estimate of CPIH inflation over the 2020-25 price control period.² We have not identified a good reason to make a formal decision on the *nominal* WACC.
- 1.23 For the assessment presented in this annex, where source data are on an RPIstripped basis, we have converted to a CPIH-stripped basis using an estimated "wedge" between the RPI inflation rate and the CPIH inflation rate of 1% (the RPI rate being higher). This is the same wedge as assumed by KPMG for its calculations for Appendix O to SONI's business plan. We consider this a reasonable approximation, although we recognise that at any specific point in time the difference between forecast RPI and forecast CPIH over the same period of time could differ from 1%.
- 1.24 In its business plan (appendix Q) SONI also proposed a way to implement the transition from RPI indexation to CPIH indexation in the calculation of the SONI RAB. We consider this separately in Annex 8 which addresses a number of issues concerning SONI's RAB.

Our remuneration channels for debt and equity finance

- 1.25 Based on our approach decision and SONI's business plan we can decompose the overall allowed return sought by SONI into four main components (leaving aside the element of return to investors achieved through CPIH indexation of SONI's RAB).
- 1.26 We propose that the overall remuneration for equity capital and debt finance within the TSO control ("total allowed return") is the sum of allowances from four remuneration channels (insofar as they are applicable): (a) allowed return on RAB; (b) allowed return on PCG; (c) adjustment to allowed return for asymmetric risk; and (d) allowed margin on revenue collection activities.
- 1.27 Figure 1 provides a high-level illustration of how the total allowed return is to be derived from these four remuneration channels. It shows, for instance, that the allowed return on the RAB is to be calculated by applying an allowed WACC (%) to the prevailing value of SONI's RAB. In addition to the allowed return to investors provided through these channels, which feed directly into the calculation of price control revenue allowances, equity investors also benefit from an element of return on capital through inflation indexation of the RAB (e.g. RPI or CPIH indexation), but

² In the financial modelling used for our draft determinations, for the purposes of making forecasts in nominal terms, we made assumptions on forecast CPIH inflation over the price control period, of 2%. This was the same assumption as used by SONI for business plan purposes and similar to inflation rates implied by recent OBR, HM Treasury and Bank of England forecasts.





this is not shown in the diagram for simplicity.



Figure 1: Overview of remuneration channels for debt and equity investors

- 1.28 The remuneration channels in Figure 1 are consistent with those from our March 2019 regulatory approach decision, and with SONI's business plan proposals.
- 1.29 The inclusion of the relationship between the allowed return and forecast return in Figure 1 is a descriptive/presentational enhancement, which builds on suggestions from the UKRN report³ on the benefits of drawing a distinction between the allowed return and the expected return, and does not change our approach. More specifically, Figure 1 highlights that the total forecast return to investors is the sum of the total allowed return and any forecast out-performance or under-performance of the SONI price control. For instance, if the allowed return was £1m per year and equity investors forecast SONI to receive a net financial gain of £250,000 per year from out-performance of price control incentive schemes (e.g. from under-spend of cost allowances subject to cost-sharing incentives), the forecast return to equity investors would be £1.25m per year (before corporation tax). Conversely, if the allowed return was £1m per year and equity investors forecast SONI to experience a net financial loss of £250,000 per year from price control under-performance (e.g. over-spend of price control allowances), the forecast return to equity investors would be £0.75m per year.
- 1.30 Ultimately, we need to set the SONI price control in such a way that the total forecast return to investors is reasonable, taking account of the requirements for debt and equity capital and of the risk borne by investors.
- 1.31 We summarise below the approach we have taken in our review of SONI's proposals under each of the four remuneration channels above, and how they fit

³ UKRN (2018) "Estimating the cost of capital for implementation of price controls by UK Regulators"





within the structure of this report. We then briefly describe some further analysis, on debt financeability analysis and RORE scenario analysis, which supports our overall assessment.

The WACC to be applied to the SONI RAB (sections 2 to 9)

- 1.32 Section 2 to 9 of this annex consider different elements feeding into the estimated WACC for the SONI price control.
- 1.33 SONI's business plan proposals are for a pre-tax WACC. In line with our March 2019 regulatory approach decision, SONI's proposals involve remuneration of the SONI's corporation tax liabilities through an approximate uplift on cost of capital allowances rather than using separate and detailed financial modelling of corporation tax liabilities. This approach is called a pre-tax WACC approach and is used for the 2015-20 SONI price control. In contrast a post-tax approach is used, for example, for the NIE Networks transmission and distribution price controls. We have also adopted the pre-tax WACC approach for our draft determinations.
- 1.34 SONI's proposed pre-tax WACC is built up using an established approach from UK price control regulation. Under this approach:
 - A notional gearing assumption is used to determine the mix of debt and equity assumed to be remunerated within the overall capital structure.
 - The CAPM approach is used to estimate the cost of equity for SONI on a post-tax basis, which is then converted to an estimate of the cost of equity on a pre-tax basis using an assumption on the corporate tax rate.
 - There is a separate assessment of the cost of debt for SONI.
- 1.35 We illustrate the main components of the WACC and how they are related in Figure 2 (e.g. the cost of equity on a pre-tax basis is calculated from the cost of equity on a post-tax basis, the corporation tax rate and the cost of debt). Figure 2 highlights which sections of this report address each of component of the pre-tax WACC.







- 1.36 The colour-coded boxes in Figure 2 show which components are specific to the SONI price control and which are common across UK RAB-based price controls. Our review placed less emphasis on CAPM parameters and other issues that are common across UK RAB-based price controls. Given the relatively small size of the SONI price control, and the overlap with other price control reviews, we did not consider that it is proportionate to seek to duplicate work that has been carried out by other regulators or other parties on issues that are just as relevant to other regulated companies as they are to SONI (e.g. latest market evidence to inform assumptions on the risk-free rate). And the SONI price control review does not seem well-suited to the exploration of new and alternative approaches for issues that are no more pressing for SONI than they are for other regulated companies. In these areas we give emphasis in our review to recent regulatory precedent rather than exploring new lines of quantitative analysis.
- 1.37 On this basis, we gave greater attention to the notional gearing assumption, the asset beta and the cost of debt.

Remuneration of a parent company guarantee (section 10)

1.38 Section 10 reviews SONI's proposals for remuneration of the parent company guarantee. This issue is closely linked to section 2, which considers the gearing assumption for the notional TSO. This is because the gearing assumption is part of broader question of the financial structure to assume for the notional TSO. In section 2 we consider what role there should be for a PCG within the capital structure for the notional TSO and in section 10 we consider how any PCG should be remunerated.

Remuneration of risk from revenue collection activity





(section 11)

- 1.39 Section 11 reviews SONI's proposals for remuneration of its revenue collection activity. Our approach to this aspect of SONI's proposals is to draw a distinction between:
 - SONI's revenue collection role; and
 - SONI's other TSO activities.
- 1.40 Under SONI's proposed approach, a margin would apply to qualifying revenues under the revenue collection role to provide remuneration for risk faced by SONI in performing that role. This approach is consistent with our Approach decision and with the remedies from the CMA appeal in 2017.
- 1.41 Our targeted review of the SONI's proposals for remuneration of its revenue collection activity considered the margin rate to be applied and the question of which revenues a margin should be applied to.
- 1.42 Under the distinction above, the margin allowed on revenue collection activities would be self-standing and it would not be linked to the allowed return provided for other SONI activities (e.g. the allowed WACC on the TSO RAB). This is consistent with the remedies from the CMA appeal in 2017, which addressed the margin for revenue collection as a separable matter of risk and return relating to revenue collection activities. On this basis, to bring internal consistency and avoid double counting, we consider that the allowed WACC and the PCG should be assessed for the notional TSO that does not carry out the revenue collection activities separated out above.

Debt financeability analysis (section 12)

- 1.43 In section 12, we present analysis of debt financeability metrics. We provide analysis of debt financeability metrics for the assumed notional TSO (covering both its core and revenue collection activities) under the UR's draft determinations.
- 1.44 The main role of this analysis is to help address the risk of internal inconsistency in our estimation of the cost of debt. For instance, a finding of weak forecast credit metrics might indicate that the notional TSO would not be able to sustain the quality/grade of debt assumed for the purposes of the cost of debt (section 9) based on its revenues and costs. More generally, analysis of debt financeability metrics is sometimes seen as a broader cross check on the cost of capital assessment.

Upside and downside scenarios for equity return (section 13)

1.45 In section 13 we present some analysis of the potential return to regulatory equity (RORE) under a number of different scenarios for the 2020-25 period (e.g. different scenarios for performance incentives or cost risk). We also present some comparisons of our estimated RORE risk exposure for SONI against that for the regulated water companies in England and Wales, drawing on Ofwat's recent



RORE analysis for its PR19 final determinations.

1.46 We used this analysis to help calibrate some of the financial incentives that form part of our proposed price control framework for the 2020-25 period: we wanted to check that our proposed approach would give meaningful financial incentives without creating undue financial risk for investors. We also drew on this analysis to inform the assessment of SONI asset beta in section 7.

Adjustment to allowed return for asymmetric risk (section 14)

- 1.47 In line with the CMA's determination in the SONI appeal, the TSO price control approach decision recognised the case for adjustments to CAPM estimates for significant asymmetric risk. The Reckon working paper published alongside the December 2018 regulatory approach consultation said that the assessment of asymmetric risk should take a broad and balanced view across the whole price control package.
- 1.48 Section 14 provides our review of SONI's proposals for an upward adjustment to the allowed return for asymmetric risk that it considers adverse to its investors. It also provides further consideration of potential sources of asymmetric risk from the proposed price control framework (which differs in some material ways from what SONI put forward in its business plan).

WACC build-up and sensitivity analysis (section 15)

- 1.49 In this final section, we bring together the different components of the pre-tax WACC from sections 3 to 9 to show how the overall WACC we propose for draft determinations is calculated.
- 1.50 We also provide some targeted sensitivity analysis to show how the calculated pretax WACC would vary if we used different estimates or assumptions for some of the WACC parameters (e.g. figures provided by SONI or used in recent regulatory precedent). This analysis helps to show which parameters are more influential on the calculated pre-tax WACC, and those that have a less significant influence.





2. Notional TSO's gearing and financial structure

- 2.1 In line with our March 2019 regulatory approach decision, we are interested in estimating the pre-tax WACC for a "notional efficient TSO licensee" rather than the for the actual TSO licensee. We refer to this as the "notional TSO" for short.
- 2.2 Regulatory principles and precedent support estimation for a notional efficient licensee. For instance, estimation on the basis of a notional efficient financial structure provides protection to customers against the costs of any inefficient financing arrangements that SONI may adopt (inefficient from a customer perspective), while allowing some flexibility for SONI to choose how it finances its functions.
- 2.3 The notional TSO should be realistic and justified. Information and evidence on the actual TSO may be helpful in coming to a reasonable position on the definition of the notional TSO, but it should not be determinative.
- 2.4 In this section we consider the financial structure to be assumed for the notional TSO, particularly in relation to gearing (the assumed mix of debt to equity in SONI's RAB) and the potential role, for the notional TSO, of a parent company guarantee (PCG) to provide additional equity support beyond the equity finance of the RAB. These issues are closely related. We consider some further issues for the definition of the notional TSO in section 10.

Summary of SONI / KPMG proposals on notional gearing

- 2.5 The approach adopted by KPMG to estimate the pre-tax WACC for SONI involves an assumption on the notional gearing, in line with the UR's expectations.
- 2.6 KPMG proposed a notional gearing for SONI of 55% and presented three sources of information in support of its proposal:
 - SONI's actual capital structure. The report states that SONI's actual gearing as of September 2019 is 73%. KPMG says that while SONI's actual gearing is "expected to remain broadly constant at the current level" over the 2021-25 price control period, it may not provide a robust basis for setting the notional gearing assumption. This is because SONI's capital requirements are volatile and unpredictable, and it may not be possible for SONI to adjust its borrowing levels every time there is a change in capital requirements.
 - SONI's target level of gearing. KPMG quotes SONI as having indicated that its policy is to target a gearing of 50%-60%. According to KPMG, this suggests that SONI's actual gearing will tend towards 50%-60%, and therefore this target provides a "particularly insightful" benchmark when setting notional gearing assumptions.
 - Precedent from other UK utility regulatory decisions. KPMG reports the



notional gearing assumptions made by other UK regulators in setting price controls between 2016 and 2019 (see details further below). According to KPMG, these figures support a notional gearing assumption of 55% for SONI.

- 2.7 In terms of regulatory precedent, KPMG reported regulatory precedent for notional gearing assumptions ranging from 60% (e.g. Ofwat's PR19 position for water companies in England and Wales) to 30% (Ofcom's assumption for BT Openreach's wholesale local access services in 2018)]
- 2.8 KPMG identified Ofcom's notional gearing assumption of 30% for BT Openreach as a "notable exception" and adopted the following position on the implications for the SONI price control:

"The risk exposure of [BT Openreach] WLA activities can be considered to be greater than a typical network activity, e.g., because they are subject to demand risk. This is reflected in the higher asset beta determination for Openreach relative to other network utility determinations. All else equal, higher risk is associated with lower "efficient" gearing, since higher risk increases the likelihood and expected costs of bankruptcy. SONI is likely to be subject to higher risk than network utilities, due in large part to its higher operational gearing. This would generally suggest that a lower notional gearing assumption would be appropriate for SONI than for network utilities. However, unlike other network utilities, SONI benefits from sources of contingent capital such as the PCG which serve to provide additional buffer against working capital requirements beyond retained earnings. In the presence of this protection, SONI's residual risk profile could be considered similar to the upper bound for network utility companies. This implies that a notional gearing level corresponding to the lower bound for network utilities could be a reasonable assumption."

- 2.9 KPMG also recognised that we had considered a notional gearing assumption of 0% (no debt, 100% equity) as part of SONI's price control for 2015-20. KPMG argued that a similar assumption would not be appropriate for the 2020-25 price control period for the following reasons:
 - It would lead to a higher pre-tax WACC, in part because the debt interest payments are tax deductible.
 - It assumes that the equity investors in SONI (EirGrid) would be willing to inject equity capital to cover unforeseen capital requirements. No account is taken of the costs of such equity issuance.
 - It may be interpreted as "making the strong assumption that the combined signalling, incentive and clientele effects associated with debt financing are insufficiently material to warrant any "efficient" debt financing". KPMG said



that the notional gearing structure should in principle represent a view of the "efficient" financing structure for the entity in question and that in order for a 100% equity financed structure to be considered "efficient", it would need to be assumed that the effects of gearing that result in lower cost of capital are entirely outweighed by the increased risk of bankruptcy for even minimal levels of gearing.

- SONI's actual gearing, both now and in the past, are higher than zero.
- An assumed notional gearing of zero is unprecedented in UK utility regulation.

Review of SONI / KPMG business plan proposals

- 2.10 We found that KPMG's report provided useful evidence and discussion on the notional gearing assumption. However, across that report and the remainder of SONI's business plan, we did not consider that there was sufficient explanation of the proposal for a 55% notional gearing assumption, nor sufficient consideration of alternative assumptions.
- 2.11 KPMG's assessment placed weight on SONI's target gearing. However, without further information on why this financial structure is efficient from the perspective of customers, it is difficult to accept that SONI's target gearing should be used for the assumed gearing of the notional TSO. There are several reasons for this:
 - On its own, simply reporting SONI's target level of gearing does not provide good evidence of what level of gearing would be efficient for a notional efficient TSO, especially in a context when its actual gearing is significantly different to that level.
 - In the context of a company, such as SONI, which is part of a wider corporate group (including the SEMO joint venture with EirGrid) the mix of debt and equity finance for individual companies within that group may not be a reliable indicator of what capital structure those companies would adopt if financed on a more standalone basis.
 - It is possible that SONI faces constraints on its capital structure that arise from ultimate ownership by the public sector in the Republic of Ireland. For instance, it is possible that it is more difficult for SONI to raise new equity finance compared to companies with private sector equity control, and this may influence its choice of financial structure. We consider that the notional TSO should not be seen as constrained by public sector ownership. In particular, this means that equity investment for the notional TSO should be forthcoming provided that the price control allowances for the cost of equity are reasonable. And it is a possible reason why there may be divergences between the actual or target gearing of SONI and a regulatory assumption on gearing for the notional TSO.
- 2.12 KPMG's assessment also placed weight on regulatory precedent. In doing so, it



discarded the notional gearing assumption used by Ofcom for BT Openreach of 30% and instead gave weight to the notional gearing assumptions for network utilities (taken to include water companies, energy network companies but not BT Openreach). KPMG recognised the argument that if SONI is seen as higher risk than network utilities this would generally suggest a lower notional gearing assumption than for network utilities. But KPMG argued that because of the additional protection offered by the PCG, which is not a typical feature of the notional financial structure assumed for network utilities, SONI's residual risk profile could be considered similar to the upper bound for network utility companies.

- 2.13 We agree that the inclusion of a PCG provides protection (e.g. to debt holders) but this seems insufficient to justify the position that the appropriate gearing for the notional TSO is around the upper end of what we see for regulated network utilities. This issue should be seen in the context of the strong emphasis that SONI has placed on its risk profile being very different to that for network utilities (e.g. during the 2017 CMA appeal). KPMG provided no evidence or reason why the extra protection offered by the £10m PCG means that SONI's residual risk profile would be similar to the upper bound for network utility companies.
- 2.14 Furthermore, KPMG's argument implied that the PCG is a substitute for a capital structure involving more equity finance and a lower level of gearing. This begs the question of whether it might be more efficient, and simpler, to remove the PCG and operate with a lower level of gearing.
- 2.15 KPMG also set out a range of arguments as to why a 0% notional gearing (100% equity) assumption, which was used as part of our determinations for the 2015-20 SONI price control, would not be appropriate for the 2020-25 SONI price control. We do not accept all of KPMG's arguments. For instance, the first point made by KPMG is an assertion that 0% gearing would result in a pre-tax WACC which is higher than under a 55% gearing assumption. But KPMG did not provide calculations to support this assertion and it does not seem to be borne out by the various figures and calculations used by KPMG to calculate the pre-tax WACC.
- 2.16 Nonetheless, we saw some merit in the comments made by KPMG that there are "signalling, incentive and clientele effects associated with debt financing". Although KPMG did not elaborate on the various issues it highlighted, the more general point is that there may be benefits from debt finance that are not captured directly in the estimation of the pre-tax cost of capital under alternative gearing assumptions. For instance, from the perspective of equity investors, having some debt finance in the overall financial structure might be seen to bring a valuable additional layer of scrutiny and governance on the company's management and its business plans.

Further consideration of notional gearing assumption

2.17 A fundamental deficiency of SONI's proposals on notional gearing is the lack of consideration of alternatives to the 55% gearing assumption and what they would mean for price control allowances and for the risk that the notional TSO could accommodate.



- 2.18 To help tackle this deficiency, we carried out some further analysis to compare SONI's proposed gearing against an alternative gearing assumption of 30% (and no PCG). This is not the only alternative financial structure that could be considered, but seemed particularly relevant for the following reasons:
 - It is approximately midway between the two scenarios for the notional gearing assumption for SONI used for the 2015-20 price control period (0% and 55%).

Utility Regulator

- There is some recent regulatory precedent for a 30% notional gearing assumption for UK regulated companies (e.g. CMA draft determinations for NERL and Ofcom BT Openreach).
- Unlike the 0% gearing assumption that KPMG argues against, a 30% gearing assumption would involve significant debt finance within the overall capital structure. This would help take account of the benefits of debt finance which may not be captured in calculations of the pre-tax WACC (e.g. contribution of debt holders to scrutiny of company management and business plans).
- Compared to SONI's proposal of 55% gearing, we estimated that a gearing assumption of 30% would provide for an additional £9m of equity capital finance for the TSO (on average over the 2020-25 period, based on forecast RAB of around £36m on average in nominal terms). This would increase the ability of the TSO to accommodate downside financial risk, in the absence of a £10m PCG. The overall equity capital identified in support of the SONI business would be similar.
- 2.19 On their own, these are not reasons why this alternative financial structure would necessarily be appropriate for SONI; but they are reasons to consider it. We carried out further analysis in three key areas to test the merits of this alternative structure.
- 2.20 First, we carried out some analysis of how upside and downside risk scenarios would affect the return on regulatory equity (RORE). We describe our broader approach to RORE analysis in section 13. For the scale of financial incentives for good/bad performance that SONI had proposed, and which we were considering, SONI's proposal of 55% gearing would imply impacts on RORE that seemed high relative to other UK regulated companies where RORE analysis has been used. For instance, based on an estimated RAB of £36m and 55% gearing, SONI's proposed maximum financial downside/penalty under its proposed benefits sharing mechanism would have a downside RORE impact of 8.5%, which is much higher than RORE impacts typically estimated for performance incentives applied to water companies in England and Welsh, and GB energy network companies. With a 30% gearing assumption, the higher amount of equity finance in the RAB provides a larger equity buffer in £m which, in turn, means that the impact on equity returns from downside scenarios would be lower, and more in line with that from other regulated sectors.
- 2.21 Second, we considered further the role of the PCG within an efficient capital

structure for the notional TSO. Our assessment is presented in section 10. The PCG was introduced in 2009 in a very different context, when SONI's RAB was much smaller than it is today. For the 2020-25 price control period, SONI's RAB is expected to grow further. Compared to the time that the PCG was introduced, it is possible to provide a greater amount of equity finance to support the business through conventional equity in the RAB, rather than through a separate PCG.

Utility Regulator

- 2.22 Third, we examined what the implications for the estimated pre-tax cost of capital would be from the alternative notional financial structure. We found no evidence that a 30% gearing would increase SONI's overall allowed return. While KPMG emphasised the tax benefits of financial structures with higher gearing, there are other factors that affect the pre-tax WACC. For instance, with a higher amount of equity finance compared to debt finance, the estimated equity beta would be lower which reduces the (post-tax) cost of equity (%). This is because the risk borne by equity investors would be spread across a larger amount of equity capital so the required return (%) on £1 of equity investment would be lower. In addition, the removal of the PCG would avoid the financing costs to customers associated with the PCG (see section 10 for further discussion of the PCG). We present some further analysis and discussion of the relationship between the notional gearing assumption and the pre-tax WACC in section 15.
- 2.23 We also note that the CMA, in its recent draft determinations in the price control appeal for NERL, used a notional gearing assumption of 30%. The CMA's reasoning for this gearing assumption reflects the context of that case, the nature of NERL's business and the listed airport companies used as comparators. We do not wish to place too much weight here on the CMA's gearing assumption. However, it is interesting to see recent CMA precedent for the gearing assumption for a regulated UK company subject to RAB-based price control being set well below the levels typically seen for network companies. Our view is not that the gearing assumption for NERL is necessarily an appropriate reference point for SONI, but that the CMA position indicates that the typical gearing assumptions for asset-heavy network utilities (e.g. 50%-60%) is not necessarily a reliable guide to an appropriate notional gearing assumption for non-network companies such as NERL and SONI.

Draft determination on notional capital structure

- 2.24 On the basis of our review of SONI's business plan proposals, and the further considerations described above, we propose to calculate the pre-tax WACC on the basis of a notional financial structure involving 30% gearing and no PCG.
- 2.25 We discuss the treatment of the PCG further in section 10.



3. Total market return

3.1 Under the approach used by SONI and KPMG, a view on the total market return is combined with a view on the risk-free rate to determine the equity risk premium, which is a parameter used in the CAPM formula for the cost of equity.

Summary of SONI / KPMG proposals on total market return

- 3.2 KPMG presented evidence on the total market return (TMR) from three different approaches. These are briefly summarised as follows:
 - Historical ex post approach. This approach relies on a dataset of returns to investors in the UK stock market over a very long historical period (1900-2016). The long-term dataset is used to determine the historical long-run average stock market return by first calculating the geometric mean of these returns over time, and then adjusting this figure for historical volatility to estimate the arithmetic mean over time. This estimate of the arithmetic mean is adjusted further for inflation (CPIH) to provide a range of 6% to 7% for the TMR.
 - Historical ex ante approach. This approach estimates the TMR based on historical investor expectations of future stock market returns. KPMG has derived an estimated range of 5.4%-5.9% by adding a 2017 estimate of the "real arithmetic risk premium for a globally diversified investor" of 4.5%-5% to the estimated real (CPI adjusted) arithmetic risk free rate for 1900-2016 of 0.9%.
 - Forward-looking approach. This approach produces estimates of the TMR from estimates of forward-looking investor expectations of stock market returns. KPMG reports an estimate of 8.0%, drawing on analysis from the Bank of England.
- 3.3 Having considered the different approaches and their results, KPMG proposed a range of 6% to 7% for the TMR on a CPIH-deflated basis, with a central estimate of 6.5%. KPMG said that this range is based on the historical ex-post approach, in line with the approach adopted by Ofgem in its RIIO2 sector-specific methodology decision paper. KPMG also provided a cross check of this range against recent regulatory precedent.

Targeted review of SONI / KPMG proposals

- 3.4 KPMG provided useful and relevant evidence, and its central estimate fits well with recent precedent from regulators such as Ofwat who have examined the TMR in detail.
- 3.5 Ofwat used a TMR of 6.50% for its PR19 Final Determinations, Ofgem has proposed a range of between 6.25% and 6.75%, and Ofcom used a value of 6.7% for BT Openreach.



3.6 The CMA's estimate of the total market return for its provisional determination in the NERL case (March 2020) was a range between 5% and 6% on an RPI-stripped basis.⁴ This is equivalent to around 6% to 7% on a CPIH-stripped basis, which is consistent with KPMG's proposal of 6.5%.

Utility Regulator

3.7 The approach eventually adopted by KPMG (described as historical ex-post approach) is consistent with the recommendations from the 2018 report for UKRN. However, we had some reservations about the weight placed on this approach. KPMG gave large weight to an average of the inflation-stripped TMR over a very long time period, and to an assumption of stability over time in the TMR even in the face of the extraordinary monetary policy seen in the UK and US since the global financial crisis (e.g. very low nominal interest rates). Furthermore, there are some estimation issues relating to the inflation adjustments. This is a complex and controversial topic, which is relevant across UK price control regulation in different sectors. However, the SONI price control review does not seem an appropriate process through which to investigate this matter more fully.

Draft determination on the total market return

3.8 We do not propose to intervene in this area and have used SONI's central estimate of 6.5% for the total market return. We consider this a proportionate approach for the SONI price control, taking account of the overall size of the SONI price control and the impact on customers, and of recent regulatory precedent.

⁴ Paragraph 12-17 of CMA (2020) NATS (En Route) PLC/CAA regulatory appeal – Provisional findings report





4. The risk-free rate

4.1 The risk-free rate (RFR) is a parameter used in the CAPM formula for the cost of equity. Under the approach used by KPMG and SONI, it is also combined with a view on the on the total market return to determine the equity risk premium.

Summary of SONI / KPMG proposals on the risk-free rate

4.2 KPMG proposed a risk-free rate of –0.60% (relative to CPIH). According to the KPMG report, the risk-free rate was estimated using data from May 2019, and was based on "the average forward rate for UK index-linked Gilts over the period 2020-2025. One-year averages of rates have been used to smooth the data". The report did not provide detailed information on the input data or on the methodology used to estimate the forward rates.

Targeted review of SONI / KPMG proposals

- 4.3 Ofwat's estimate of the RFR (-1.39%) is lower than KPMG's figure for SONI. The difference between the Ofwat and KPMG figures could be driven, at least in part, by differences in the timing of the data on yields. Ofwat's data are from September 2019 whereas KPMG used data from May 2019. In addition, Ofwat drew on yields for 15-year RPI-indexed gilts only, whereas KPMG used an average of 5- and 20-year RPI-indexed gilts.
- 4.4 Ofgem's estimate of RFR is -0.96%, which is also lower than KPMG's estimate of 0.60%. Again, the difference appears to be driven partly by timing (Ofgem's data are from March 2019) and partly by Ofgem using 20-year RPI-indexed gilts only.
- 4.5 The figures used by Ofcom for BT Openreach (-0.50%) and CAA for NERL (-1.70%, RPI-stripped) are much closer to KPMG's estimate for SONI.
- 4.6 KPMG justified taking the average of 5-year and 20-year maturity gilts on the basis that SONI's assets have an "average useful life" of 5 years and investors in regulated assets have a long investment horizon (hence the relevance of 20-year gilts).
- 4.7 The 2018 UKRN report to regulators on WACC parameters recommends that regulators use the "(zero coupon) yield on inflation-indexed gilts at their chosen horizon to derive an estimate of the risk-free rate at that horizon". The UKRN report also suggests that regulators could choose one of three different horizons, the very short term (e.g. monthly), the end of the price control period (i.e. 5 years for SONI) or a term that matches the maturity of company debt liabilities (which they approximate as half of the typical 40-year expected lives of physical assets, i.e. 20 years). According to the UKRN report, there are good arguments in favour of the first two, and there are no objections to using the third. However, the report recommended that a consistent horizon is used across all WACC parameters.
- 4.8 We think that there is merit to an approach that gives weight to short-term as well

as longer-term maturity gilts. However, we are not convinced that 20-year maturity gilts are particularly relevant to the notional TSO. The arguments used by Ofwat and Ofgem to justify looking at a longer investment horizon (i.e. alignment with useful asset lives) do not apply to the notional TSO, whose asset base consists of assets with much shorter asset lives.

Utility Regulator

- 4.9 Our initial review of data from the Bank of England on RPI-indexed gilts suggested that updating KPMG's analysis using the most recently available data (i.e. from December 2019) could lead to lower RFR estimates.
- 4.10 We also considered the CMA's view on the risk-free rate as part of its provisional findings in the NERL price control determination in March 2020.⁵ The CMA' risk-free rate equates to around –1.25% on a CPIH-stripped basis. This is lower than the risk-free rate proposed by SONI, and again we think the bulk the discrepancy is due to the CMA's use of more recent data, rather than the methodology or principles.
- 4.11 While the CMA NERL provisional decision, and other recent precedent, might point to setting a slightly lower risk-free, and in turn a slightly lower WACC, for the SONI draft determination we estimate the impact of the difference to be small: around 19 basis points or £63k per year if we used the figure of –1.25% implied by the CMA NERL provisional finding (see section 15 for further information on our sensitivity analysis).

Draft determination on the risk-free rate

- 4.12 KPMG provided relevant and useful evidence on the risk-free rate. Its proposed rate is consistent with some recent precedent, although it differs to estimates used by the CMA, Ofwat and Ofgem which are based on more recent data. These differences have a relatively small impact on the estimated pre-tax WACC.
- 4.13 For the purposes of our draft determinations, we have used SONI's proposed figure of -0.6% for the risk-free rate. The small differences to some of the more recent regulatory precedent did not seem sufficient reason to intervene at this stage, especially as we did not identify clear problems with SONI's methodology and because the relevant data could change again before our final determinations.
- 4.14 For our final determinations we plan to take account of more up-to-date data. We ask that, as part of its response to our draft determinations, SONI updates its own analysis of the risk-free rate using up-to-date data.

⁵ Paragraph 12.235 CMA (2020) "NATS (En Route) PIc/CAA Regulatory Appeal Provisional findings report".



5. The equity risk premium

5.1 Under the approach used by KPMG, and by UK regulators such as Ofwat and Ofgem, for the purposes of estimating the pre-tax WACC over the price control period, judgement is used to determine the total market return and risk-free rate, and the equity risk premium (ERP) is then calculated as the difference between the two.

Summary of SONI / KPMG proposals on equity risk premium

5.2 KPMG proposed a range for the equity risk premium of between 6.60% and 7.60%. This range is derived as the difference between the reported range for the TMR of 6.00% to 7.00% and the RFR of -0.60%.

Targeted review of SONI / KPMG proposals

5.3 KPMG's method for estimating the ERP is consistent with recent regulatory precedent. The figures reported by KPMG are different to those used recently by Ofwat and Ofgem, but these differences are entirely driven by differences in the assumed risk-free rate.

Our draft determination on the equity risk premium

5.4 We did not identify a reason to intervene to depart from SONI's approach of calculating the equity risk premium as the total market return minus the risk-free rate. We adopted this approach for the purposes of our draft determinations.





6. Debt beta for comparators and TSO

- 6.1 The debt beta is a parameter that features in a standard formula used in UK regulatory practice to move between estimates of the equity beta for a company (at an assumed level of gearing) and the asset beta for that company (which is the equity beta if gearing is assumed to be zero).⁶
- 6.2 The debt beta used to calculate an asset beta for listed comparator companies can be seen as a common factor across different price control determinations, at least to the extent that the listed comparators are common across those determinations. It would be possible in principle to use a separate TSO-specific debt beta to use to convert an asset beta for the notional efficient SO into an equity beta for the notional TSO, but this was not the approach adopted by KPMG which treats the debt beta parameter as the same for SONI and for listed comparators.

Summary of SONI / KPMG proposals on the debt beta

- 6.3 KPMG assumed a debt beta of 0.15. The only explanation we found for this was a statement that this was in line with the assumption applied by Ofgem in its RIIO2 decision document.
- 6.4 KPMG used this value in two different sets of calculations:
 - A debt beta of 0.15 is used for adjusting the asset beta of the listed comparator companies as part of the operational gearing adjustment.
 - The same value of debt beta (0.15) is used for re-levering the asset beta for the notional TSO to calculate the equity beta for the notional TSO to be used in the CAPM formula.

Review of SONI / KPMG proposals

- 6.5 KPMG's debt beta assumption of 0.15 did not appear to be well explained or justified. KPMG referred to an Ofgem document produced in the early stages of the RIIO2 process, which has since been superseded.
- 6.6 Ofwat used a figure of 0.125 for its PR19 Final Determination in December 2019. Ofgem proposed a range of 0.10 to 0.15 in its RIIO2 final methodology decision in 2019. Both the CAA (NERL) and Ofcom (BT Openreach) used a debt beta of 0.10 in recent determinations.
- 6.7 In its provisional findings in the NERL price control appeal, in March 2020, the CMA used a debt beta of 0.05 for NERL.⁷ The CMA also said that the evidence to support the debt beta was largely speculative. Some of the points it made in its discussion

⁶ The CMA referred to this formula as the Harris-Pringle formula in its NERL provisional findings. See footnote 460 at paragraph12.104 of CMA (2020) "NATS (En Route) Plc /CAA Regulatory Appeal Provisional findings report".

⁷ Paragraph 12.122 of CMA(2020) "NATS (En Route) PIc /CAA Regulatory Appeal Provisional findings report".



Utility Regulator

- 6.8 Overall, we found little support in recent regulatory precedent for KPMG's point estimate of 0.15 for the debt beta, which is at the top of Ofgem's range and higher than other precedent.
- 6.9 We carried out further analysis which indicated that the choice of debt beta assumption did not have a large impact on our calculation of the pre-tax WACC if we take the asset beta as given (see section 15). The debt beta assumption for comparator companies may also have an impact on some estimates of the SONI asset beta, but this varies across different sources of evidence for the asset beta.

Draft determination on the debt beta

- 6.10 SONI did not provide any explanation for the debt beta assumption underpinning its proposals on the pre-tax WACC being at the upper end of the figures cited in recent regulatory precedent.
- 6.11 In the absence of more detailed investigation of this issue, a figure of 0.125 seemed more suitable than SON's proposal. This is in the middle of the range from the recent UKRN report and was used by Ofwat for its PR19 final determination.
- 6.12 We used a debt beta of 0.125 for our draft determinations.
- 6.13 While the CMA recently used a lower debt beta assumption for its NERL provisional, it seemed to show little conviction in its assumption of 0.05. We did not see a good case, from what the CMA had said at the provisional findings stage for NERL, for departing from the range from the recent UKRN report and from the other recent precedent. Our proposed figures lies between the CMA's debt beta from NERL and SONI's proposed figure, and closer to the latter.



7. Asset beta for the notional TSO

Summary of SONI / KPMG proposals on TSO asset beta

- 7.1 SONI proposed a point estimate for the asset beta of 0.57, which in turn was based on a range estimated by KPMG of 0.54 to 0.61. The KPMG report (page 30) stated that the reported range was arrived at by taking estimates of the "unadjusted" asset beta derived from comparator companies and recent regulatory decisions, and then adjusting these for SONI's higher operational gearing using the method used by Reckon/UR during the 2017 CMA appeal process. KPMG's report set out the following sources of evidence for the unadjusted asset beta:
 - KPMG's analysis of recent regulatory decisions in the UK. For network utilities, the unadjusted asset beta is in the range of 0.3 to 0.4, and for Heathrow Airport it is 0.47.
 - KPMG's own estimates of asset betas for comparator companies, which lie in the range of 0.37 to 0.44. It is worth noting that these estimates are materially higher than the asset beta estimate of 0.36 that Ofwat used (based on very similar evidence). Part of the difference could be explained by the fact that KPMG used a debt beta of 0.15, whereas Ofwat used 0.125.
- 7.2 KPMG reported a range for the unadjusted asset beta of 0.40 to 0.45. To arrive at the lower end of its proposed range for the unadjusted asset beta, KPMG drew on the upper end of the range of the recent regulatory decisions for network utilities that it considers. To arrive at the upper end of the range, KPMG drew on the asset beta assumed by the CAA for Heathrow Airport.
- 7.3 KPMG's report said that applying its adjustment for operational gearing to the range for the unadjusted asset beta resulted in an adjusted asset beta for SONI between 0.55 and 0.61.
- 7.4 Following a query from the UR, SONI provided a spreadsheet that calculated its proposed adjusted asset beta. The spreadsheet did not seem to use the data on unadjusted asset betas for comparator companies as described in the KPMG report. Instead, this spreadsheet took the unadjusted asset beta range reported in the CMA decision for Bristol Water (0.30 0.34, with debt beta of zero) and then applied adjustments for operational gearing to arrive at asset beta estimates for SONI in the range of 0.49 to 0.62.
- 7.5 SONI's spreadsheet calculations can be summarised as follows:
 - An asset beta range is determined for companies that are perceived to be comparators for SONI, in the sense that they are utility companies in the UK that operate under an economic regulation framework that is comparable to SONI. As set out above, while the KPMG report considers a more up-to-date range of comparator companies and their asset betas (0.40 to 0.45, based on a debt beta of 0.15), SONI's spreadsheet draws on comparator data used in the UR/Reckon analysis for the CMA in 2017 (which in turn was based on



the CMA's analysis for Bristol Water in 2015) to estimate asset betas of 0.39 to 0.43 (based on a debt beta of 0.15).

- An operating cash flow measure is determined for the comparators. The operating cash flow measure is the ratio of the sum of allowed regulatory pre-tax return on capital and regulatory depreciation to total revenues. SONI's spreadsheet assumes an operating cash flow measure for comparators of 0.45, which is the figure that CMA assumed in its Bristol Water decision.
- Operating cash flow measures are determined for SONI, which range from 0.32 to 0.36. SONI's spreadsheet used two different approaches to estimate its operating cash flow measure:
 - The first approach estimates forecast allowed return excluding tax allowances (before an unadjusted asset beta) and regulatory depreciation, both applied to a sub-set of SONI's RAB (building and non-building only). The revenue measure is the sum of SONI's forecast operating expenditure, allowed return and depreciation (both on building and non-building RAB only). Separately, SONI included forecast incomes from the transfer of pre-construction assets to NIE in both the numerator and denominator. This approach results in an operating cash flow measure of 0.32 for SONI.
 - The second approach takes a forecast of allowed return (including tax allowances) and depreciation on SONI's total RAB (including special projects and pre-construction assets). The revenue measure is the difference between SONI's total forecast revenue (including pass-through items) and the forecast revenue from ancillary services (At and CAIRt). Again, SONI included forecast incomes from the transfer of pre-construction assets to NIE Networks in both the numerator and denominator. This approach results in an operating cash flow measure of 0.36 for SONI.
- A set of adjustment factors is calculated as the ratio of the operating cash flow measure for the comparator companies and the various measures estimated for SONI.
- The adjustment factors are applied to the unadjusted asset beta range from comparator companies (0.39 to 0.43) to provide estimates for asset beta for SONI of between 0.56 to 0.62 (using the first approach) and 0.49 to 0.54 (using the second approach).
- The KPMG report recommended a range for SONI's asset beta which used figures near the upper end of the estimated asset betas from both approaches (0.54 to 0.61).



Review of SONI / KPMG proposals

- 7.6 We agree with the rationale for considering evidence from a method that involves applying an operational gearing adjustment to move from estimates of asset beta derived from equity betas estimated for listed comparator companies to an estimate of the asset beta for SONI.
- 7.7 Our assessment is that, while KPMG/SONI's overall approach is mostly consistent with the CMA approach to the operational gearing adjustment, there are problems with the application of the approach in some significant respects, as set out below:
 - In the first approach used by KPMG/SONI, estimates of operating cash flow for SONI did not take account of allowed return and depreciation on "special projects" (i.e. investment relating to the I-SEM). KPMG's report explained this exclusion by saying that "*I-SEM is a one-off, special project requiring significant initial investment in assets with short-lived useful lives (leading to the saw-tooth profile of SONI's RAB). As such it, and consequently, the [adjustment] calculated on this basis is likely to distort the operational gearing and the measurement of the underlying operational risk of the business".*
 - KPMG/SONI have not included PCG remuneration in estimates of SONI's operating cash flow even though this remuneration is part of SONI's proposals for remuneration of capital.
 - There were significant differences between the revenue estimates used by SONI in the two approaches. The first approach used a revenue forecast of approximately £30.6m per year, whereas the second approach used a revenue forecast of approximately £41.7m per year. Neither SONI nor KPMG provided an explanation for the scale of difference between the two estimates of revenue, which have significant impacts on the results.
- 7.8 We were not persuaded that there is a good case for excluding forecast return and depreciation relating to special projects when estimating SONI's operating cash flow measure. This is for several reasons:
 - The allowed return from special projects is a core part of the overall package of remuneration of SONI, forms part of the SONI price control licence conditions, and is highly relevant to the comparison of operational gearing between SONI and comparator companies.
 - The operational gearing adjustment that was used by the CMA in the SONI appeal was based on analysis that included allowed return, and depreciation where applicable, in relation to both "special projects" and transmission preconstruction projects in the operational gearing calculation. SONI's proposed approach is inconsistent with the operational gearing calculation methodology used in the CMA appeal.
 - While SONI suggests that inclusion of I-SEM investment would be a



distortion, the fact remains that SONI has already received approval and funding for this investment under the Zt mechanism in the current licence, and there is a clear expectation of SONI earning a return and depreciation on this investment over the 2020-25 price control period.

- The short-lived nature of assets is not different from other non-building items in SONI's RAB. SONI's non-building RAB is also subject to regulatory depreciation that is consistent with a 5-year asset life assumption.
- 7.9 If SONI's overall remuneration package for the 2020-25 SONI price control period were to include an element related to its PCG, we do not see a good reason to exclude that remuneration from estimates of SONI's operating cash flow for that period. However, given our proposal in relation to the requirement for SONI to maintain a PCG (see section 10), this element of remuneration would no longer form part of the overall remuneration package. As such, SONI's omission of PCG remuneration is of no consequence to our draft determinations.
- 7.10 In relation to the disparity in revenue estimates used by SONI, we found that SONI had constructed its revenue measures using broadly similar approaches to those used in 2017 for our submission to the CMA. The two revenue measures (or estimates) used were:
 - SONI's total forecast revenue less forecast revenue relating to the At and CAIRt terms in SONI's licence. At reflects the amounts payable by SONI to the transmission asset owner (NIE), the market operator business and other parties for System Support Services. CAIRt is SONI's collection agency income requirement to be recovered from suppliers and paid to the Moyle interconnector operator. We estimated this to be £19.3m per year on average over the 2015-20 period.
 - SONI's ex ante allowed revenue covering its internal operating costs, regulatory depreciation and allowed return on its RAB (Bt). We estimated this to be £17.9m per year on average over the same period.
- 7.11 For the analysis submitted by us to the CMA in 2017, the estimates of revenue from the two approaches were not far apart, and we said that the differences were driven by the inclusion of forecast revenue from the DBC incentive mechanism and certain Dt schemes in the second measure of revenue. However, SONI's application of these two approaches for the 2020-25 period gave quite different figures for forecast revenue (£41.7m vs £30.6m). The size of this difference, and its impact on the results, raised a question about the appropriate revenue measure to use, but SONI did not address this in its business plan.
- 7.12 In light of these issues, we carried out our own analysis drawing on SONI's approach but addressing the concerns we had. This is explained in a separate section further below.





The asset beta used for SONI in the 2015-20 price control

- 7.13 It is helpful to consider comparisons with SONI price control for the 2015-20 period. We had used an asset beta assumption of 0.60 as part of the 2015-20 SONI price control determination, in part to reflect SONI's higher operational gearing compared to its comparator companies. In its final determination in the SONI appeal, the CMA found that we were not wrong to use this figure and that the figure of 0.60 was consistent with the available evidence.
- 7.14 During the CMA appeal process, we submitted quantitative analysis that used the CMA Bristol Water operational gearing adjustment method to estimate a range of asset betas for SONI, and demonstrated that its chosen asset beta of 0.60 was consistent with this range. The CMA gave weight to this analysis in reaching its conclusions.
- 7.15 SONI's business plan forecasts for the 2020-25 period indicated that its RAB is expected to significantly higher during the 2020-25 period compared to the 2015-20 period. The figure below tracks the growth of SONI's RAB (based on SONI's forecasts).



Figure 3: Evolution of SONI's RAB (based on SONI's forecasts)

- 7.16 According to SONI's forecasts, the average RAB over the 2020-25 period is expected to be more than twice as large as the average RAB over the 2015-20 period, leading to higher returns and depreciation. These forecasts imply that SONI will have substantially lower operational gearing over the 2020-25 period than it did in the 2015-20 period. However, SONI's proposal for the 2020-25 period of 0.57 does not seem consistent with such a large forecasted increase in its RAB.
- 7.17 Our own forecasts of SONI's RAB over the same period show a similar trend (see figure below).





Figure 4: Evolution of SONI's RAB (based on UR's forecasts)



7.18 To the extent that SONI's operational gearing is relevant to its asset beta, the growth in the size of SONI's RAB suggests that a smaller adjustment to marketbased estimates of asset beta would be needed to take account of differences between SONI's operational gearing and that of the comparator companies.

Other regulatory precedent on asset beta

- 7.19 We reviewed recent regulatory precedent from other sectors. Ofwat used an asset beta assumption of 0.36 (with a debt beta of 0.125), Ofgem proposed an asset beta range of 0.35 to 0.40 (with a debt beta range of 0.10 to 0.15), the CAA used an asset beta of 0.46 for NERL (with a debt beta of 0.10) and Ofcom used an asset beta of 0.55 for BT Openreach (with a debt beta of 0.10).
- 7.20 We consider that asset beta estimates for UK listed water companies are a relevant source of information for SONI (albeit with adjustments) which reflects the monopoly position for an essential service within a utility value chain and the nature of the price control framework (e.g. revenue control with incentives on costs and performance) which is more similar to the SONI framework than the frameworks for BT Openreach and NERL. If the risk exposure of SONI under the SONI price control framework were similar to the risk exposure of the listed water companies under Ofwat's price control framework, SONI could have a higher asset beta than the water companies due to higher operational gearing. The effects of operational gearing on asset beta were considered as part of the 2017 SONI appeal to the CMA, and this means that the water company asset beta estimates are relevant, but may require adjustments.
- 7.21 The CMA's provisional findings on the asset beta for NERL was a range of 0.52 to 0.62, drawing on asset beta estimates for listed airports which the CMA took to be


the most relevant comparators.⁸ There are significant reasons why NERL's asset beta could be higher than that for SONI (e.g. price control arrangements that directly exposure NERL to volume risk, which in turn is correlated with wider market and economic conditions). Given differences between NERL and SONI that are difficult to gauge or adjust for, we were reluctant to give substantial weight to the NERL asset beta in setting the asset beta for SONI.

Further analysis using the CMA operational gearing adjustment

- 7.22 We carried out further analysis of the potential asset beta estimate for the notional TSO. We applied an operational gearing adjustment for SONI, drawing heavily on and building upon the UR/Reckon used approach for the CMA in 2017, using data from recent regulatory decisions and data submitted by SONI as part of its business plan submission for the 2020-25 period.
- 7.23 We used two different approaches:
 - Approach A: This is the UR/Reckon approach and calculations for the CMA in 2017, applied using updated operating cash flow measures for SONI based on its forecast revenues for the 2020-25 period.
 - Approach B: This uses the same approach as Approach A, except that it also uses updated asset betas and operating cash flow measures for comparator companies, drawing on Ofwat's recent final determinations for the PR19 price control period, and it uses post-tax returns for SONI to be consistent with Ofwat's allowed return for the water companies (which does not include an uplift for corporation tax).
- 7.24 In each case, we calculated the operating cash flow measure for each year of the 2020-25 period for SONI as follows:

Operating cash flow (OCF) ratio = ([WACC return on all RAB elements] + [RAB depreciation on all RAB elements] + [Revenue from NIE transfers]) / ([Operating expenditure allowances] + [WACC return on all RAB elements] + [RAB depreciation on all RAB elements] + [Revenue from NIE transfers])

- 7.25 The WACC return was calculated by applying our proposed WACC to our forecasts of SONI's RAB (covering building, non-building, pre-construction assets and special projects). RAB depreciation was calculated by applying our proposed regulatory depreciation policy to each RAB element. We drew on SONI's forecasts for the revenue from the transfer of pre-construction assets to NIE Networks.
- 7.26 One further methodological issue we faced concerned the treatment of forecast income from NIE Networks for the transfer of pre-construction assets. SONI has provided forecasts of income from the transfer of such assets to NIE in each year

⁸ Table 12-17 of CMA(2020) "NATS (En Route) Plc CAA Regulatory Appeal Provisional findings report".

during the 2020-25 SONI price control. We have recognised that there is some uncertainty about the value and timing of this income. Furthermore, we were unsure how SONI would treat this income for accounting purposes, especially because it is yet to receive such income from NIE Networks: whether it would recognise the income in the profit and loss and also recognise the costs associated with that income at the same time; or whether it would just recognise the gain from the transfer over and above the costs it incurred. In this context, we did our modelling for two scenarios:

- Scenario based on SONI forecasts of income from transfers of preconstruction assets to NIE Networks, with the costs to SONI of these preconstruction assets recognised in its profit and loss statement in the same year as the income.
- Extreme scenario of no forecast income from transfers of pre-construction assets to NIE Networks.
- 7.27 We then applied the CMA Bristol Water (2015) method to determine adjusted asset betas for SONI as follows:
 - Under approach A, we compared SONI's OCF ratio to the OCF ratio used by the CMA in its 2015 Bristol Water determination, which was also 0.45. This implied a negligible adjustment to the comparator asset beta used by the CMA and resulted in an adjusted asset beta for SONI of 0.39 under the first scenario (including revenues from transfers to NIEN) and 0.51 under the second scenario (no revenues from transfers to NIEN).
 - Under approach B, we compared SONI's OCF ratio to our estimated OCF ratio for the three listed water companies in England (Severn Trent, United Utilities and South West Water), which is 0.51. This implied a small upward adjustment to the asset betas determined by Ofwat in its PR19 final determinations of 0.36. This approach resulted in an adjusted asset beta for SONI of 0.40 under the first scenario and 0.51 under the second scenario.
- 7.28 Our estimates of SONI's adjusted asset beta are lower than SONI's proposed figure of 0.57. This is partly explained by differences between forecasts of opex and capex allowances, the WACC and notional gearing assumptions. The table below provides further detail on these differences by taking each element of our approach in turn.

Aspect of approach	KPMG/SONI	UR (2020)	Rationale for our approach
Asset beta for comparator companies	Uses the <i>CMA</i> <i>Bristol Water (2015)</i> comparator asset beta	Approach A uses the <i>CMA Bristol Water</i> (2015) comparator asset beta Approach B uses more recent asset beta estimates from Ofwat	Under approach B we have taken the opportunity to update the analysis using more up-to-date estimates for the asset betas of listed

Table 1: Summary of differences between the UR and SONI in calculating the adjusted asset beta

Aspect of approach	KPMG/SONI	UR (2020)	Rationale for our approach		
		PR19 final determinations	comparator companies		
Debt beta for comparator companies	Uses an estimate of 0.15	Uses an estimate of 0.125	SONI did not justify its choice of 0.15 for the debt beta		
			A debt beta estimate of 0.125 is more consisten with recent regulatory precedent		
Operating cash flow measure for	Uses the figure reported in <i>CMA</i> <i>Bristol Water</i> (2015)	Approach A uses the figure reported in <i>CMA Bristol Water</i> (2015)	We have taken the opportunity to update the analysis using more		
comparator companies		Approach B uses updated estimates derived from Ofwat's PR19 final determinations	up-to-date data on comparator company operating cash flow measures		
Operating cash flow measure for SONI	Uses two different measures: The first measure includes in the numerator, forecasts of allowed return and depreciation on SONI's RAB (<i>excluding special</i> <i>projects</i>), and income from the transfer of pre- construction assets to NIE. For the denominator it includes forecasts of SONI's operating (internal) costs along with all the elements included in the numerator. The second measure includes forecasts of allowed return and depreciation on SONI's RAB (<i>including special</i> <i>projects</i>) and income from the transfer of pre- construction assets to NIE Networks. For the denominator it uses the difference between forecasts of SONI's	Uses forecasts of allowed return (approach A uses pre-tax WACC return and Approach B uses vanilla WACC return), depreciation on all of SONI's RAB, and SONI's forecasts of income from the transfer of pre- construction assets to NIE. We have repeated our calculation under a second scenario of zero income from the transfer of pre-construction assets to NIE. To calculate the denominator, forecasts of SONI's operating expenditure (plus pension deficit repair costs) are added to the numerator.	We think that SONI's operating cash flow measure should include return and depreciation on special projects as this is a core part of SONI's overall remuneration. It is also consistent with the approach taken in CMA <i>SONI</i> (2017) In the absence of a good explanation for the variation in the estimates of revenues between SONI's approaches, we opted for a single measure of revenues, built up by adding forecast revenues for operating costs to the operating cash flow (numerator).		

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Aspect of approach	KPMG/SONI	UR (2020)	Rationale for our approach
	minus forecasts of revenue relating to ancillary services.		
WACC measure used to calculate the allowed return element of SONI's operating cash flow measure.	Uses a WACC of 3.80% (pre-tax) to estimate allowed return, based on the following CAPM parameters: Gearing – 55% TMR – 6.50% ERP – 7.10% Asset beta – 0.425 Debt beta – 0.15 Cost of debt – 2.14%	We use a pre-tax WACC of 3.79% to estimate allowed return including tax allowances. This is based on the following CAPM parameters Gearing – 30% TMR – 6.50% ERP – 7.10% Asset beta – 0.5 Debt beta – 0.125 Cost of debt – 1.14%	The rationale is primarily internal consistency We opted for a notional gearing assumption of 30%, a debt beta of 0.125 and an asset beta of 0.5, which are in line with our draft determinations.

Utility Regulator

Evidence from comparisons of RORE risk scenarios

- 7.29 Although SONI's business plan submission focused on a version of the CMA operational gearing adjustment to estimate the asset beta for SONI, we were keen to consider other potential sources of quantitative evidence. The CMA operational gearing adjustment may not be an entirely accurate method for taking asset beta estimates for listed comparator companies and adjusting these for differences in operational gearing, or for taking account of a company's asset light nature. Furthermore, we would expect the asset beta of the notional TSO to be affected by features of the price control framework (e.g. the scale of financial incentives on costs and performance and the extent of protection against risk through uncertainty mechanisms), but these are not taken into account in the CMA operational gearing adjustment.
- 7.30 In this context, we considered that some further insight could be gained from efforts to compare the risk exposure of the notional TSO against the risk exposure of three listed water companies regulated by Ofwat. These three companies provide a key source of evidence for application of the CAPM approach to the estimation of the cost of equity for the purposes of UK RAB-based price control determinations.
- 7.31 In section 13 of this annex we present some analysis of the impacts of upside and downside risk scenarios on the return on regulatory equity, for the efficient TSO under our proposed price control framework. We made comparisons against the RORE upside and downside risk that Ofwat estimated for the three listed water companies covered by its PR19 final determinations. For the purposes of our comparisons, we left aside the asymmetric downside risk for transmission ne twork planning costs and SONI's revenue collection activity: both of these seemed less comparable to water companies and are to be remunerated separately from SONI's



cost of equity under its WACC*RAB allowances.

7.32 Although somewhat approximate, our analysis indicated that, under our proposed SONI price control framework for 2020-25, SONI would bear a similar degree of upside and downside RORE risk to the listed water companies under Ofwat's 2020-25 price control framework. This is illustrated in the figure below, which is explained further in section 13.



Figure 5: RoRE impact comparison: notional TSO vs listed water companies in England (PR19 average)

- 7.33 Ofwat's final determinations for the 2020-25 period allowed for a cost of equity of 4.2% on a CPIH-stripped basis (this was for the company as a whole). This cost of equity can be seen as Ofwat's assessment of the appropriate remuneration (aside from RCV/RAB indexation) for equity investors, in light of the financial risk that equity investors bear.
- 7.34 We then considered what the cost of equity allowance would be for SONI, on a post-tax basis that corresponds to Ofwat's cost of equity figures, under different assumptions for the SONI asset beta (taking as given our draft determinations for the notional gearing, risk-free rate, equity risk premium, and debt beta). We present results from this exercise in Table 2.

Table 2: Implied cost of equity for various asset beta assumptions

SONI asset beta assumption	0.35	0.40	0.45	0.50	0.55	0.6
Implied cost of equity (post tax)	2.6%	3.1%	3.6%	4.1%	4.6%	5.1%



Utility Regulator

- 7.36 Taken in isolation, the analysis of RORE and allowed equity return would point an asset beta assumption of around 0.5 for SONI: this would provide a similar allowance for the cost of equity as for the listed water companies for which our RoRE analysis indicated a similar extent of equity risk exposure. This is consistent with our estimated adjusted asset beta for SONI of 0.51 using the second scenario in the CMA Bristol Water methodology.
- 7.37 This analysis provides some tentative evidence for a SONI asset beta assumption around this level, at least on the assumption that Ofwat's PR19 cost of equity assessment for the listed water companies was broadly reasonable.
- 7.38 However, care is needed in the interpretation and application of these results because of significant limitations in the analysis. For example, the RoRE risk analysis we carried out is quite high-level and may overlook significant differences in risk exposure between the SONI price control framework and Ofwat's price control framework for the listed water companies; and similarities in the risk exposure as measured by RoRE may not translate into similarity in the exposure to non-diversifiable risk for which equity investors require a return under the CAPM model. Furthermore, Ofwat's PR19 final determinations have been referred to the CMA (though the three listed companies which are the focus of our comparison above did accept Ofwat's final determinations).
- 7.39 The figures in the table above reflect the gearing assumption we have made for the notional TSO. We assumed relatively low gearing, and a higher share of conventional equity capital, compared to SONI's proposal and that assumed by Ofwat for water companies. For a given downside risk exposure, the RORE impact is lower the lower is the gearing assumption, as the same financial hit in pounds is spread over a larger equity base. If we had used SONI's proposed gearing, the downside RORE impacts would have been significantly greater than Ofwat's analysis indicated for water companies at PR19. The combination of the cap on downside risk under cost and performance incentives (£1m) and our use of a 30% gearing assumption, helps to "normalise" the risk exposure to SONI equity investors so it is more comparable to that for other regulated companies for which asset beta estimated can be derived directly from historical share price data. This in turn





enables evidence on the cost of equity for listed comparators to inform on the asset beta for SONI, in a way that takes some account of differences in regulatory risk between SONI and comparators, differences in operational gearing (e.g. size of RAB relative to risk) and differences in the notional gearing assumption.

7.40 While there are limitations in the comparisons drawn above, we consider that this analysis provides a useful additional source of evidence on the asset beta for SONI.

Draft determinations on SONI asset beta

- 7.41 Determining an appropriate asset beta for SONI involves considerable regulatory judgement. There are no close comparators which are listed on stock markets for which an equity beta can be derived from CAPM analysis. The available evidence comes from equity beta estimates for comparators that differ in significant ways from SONI, and evidence on potential adjustments to move from asset beta estimates for comparators to asset beta estimates for SONI.
- 7.42 We considered the following factors to be particularly relevant to the determination of an appropriate asset beta for the notional TSO.
 - Recent regulatory precedent from the UK points to an asset beta of between 0.35 and 0.40 for UK network utilities subject to RAB-based price control regulation. While there are reasons to consider SONI to be higher risk than these network companies (e.g. the operational gearing issue which was prominent in the CMA appeal of the 2015-20 SONI price control) there are also some features of our proposed price control arrangements for SONI for the 2020-25 period that imply lower risk than for UK network utilities (e.g. we propose a relatively low incentive rate on overspends; more flexibility for the regulated company to seek additional allowances during the price control period; and an overall maximum on downside financial risk across both cost and performance incentives).
 - We applied an asset beta of 0.60 in our final determinations for the 2015-20 SONI price control, and this was accepted by the CMA as consistent with the evidence provided by us and SONI. The higher asset beta relative to UK network utilities subject to RAB-based price control regulation reflected SONI's higher operational gearing, and smaller RAB relative to the scale of its business, compared to those utility companies. SONI's RAB for the 2020-25 period is expected to be significantly higher (both based on SONI's forecasts and our proposed capex allowances) the average size of SONI's 2015-20 RAB (forecast at the time of the CMA review). The extent to which SONI is asset-light (in RAB terms) is expected to reduce in the 2020-25 period compared to the 2015-20 period.
 - The application of the CMA Bristol Water (2015) operational gearing adjustment method indicates a central estimate of the asset beta for the notional TSO of 0.40 (and an estimate of 0.51 if income from transfers of pre-construction assets is zero or discounted).



• Our comparisons of RoRE risk and cost of equity allowances for the listed water companies regulated by Ofwat would, if taken in isolation, suggest an asset beta for SONI of around 0.5.

Utility Regulator

- 7.43 We mention one further point. The asset betas estimated from our application of the CMA Bristol Water adjustment method might be affected by a specific issue raised by the CMA in its NERL provisional findings (March 2020), which concerns questions about the accuracy of the asset beta formula used in UK regulatory precedent (including by the CMA) to move from an equity beta estimate to an asset beta estimate (and vice versa). This is not an issue that we have sought to examine in detail for our draft determinations, and we do not necessarily endorse the CMA's views. But we do recognise that there is no guarantee of the accuracy of this formula (especially given the lack of good evidence on debt beta). A key point that we want to highlight is that this issue does not seem likely to affect significantly the asset beta for SONI derived from our analysis involving RORE risk and return comparisons against water companies. This is because we have not made any use of that formula for this analysis, and its influence on Ofwat's cost of equity estimates seems likely to be limited due to the similarity between the actual gearing and notional gearing for the listed water companies.
- 7.44 Taking all these factors into account, we propose an asset beta of 0.50 for the notional TSO.





8. Corporation tax rate and uncertainty mechanism

8.1 An estimate of the applicable corporation tax rate is needed to take an estimate of the (post-tax) cost of equity calculated using the CAPM formula and produce an estimate of the pre-tax cost of equity. Specifically, the pre-tax cost of equity for the notional TSO can be calculated as the post-tax cost of equity divided by one minus the applicable corporation tax rate.

Summary of SONI / KPMG proposals on corporation tax

- 8.2 KPMG proposed that, for the purposes of calculating the pre-tax WACC, the appropriate approach is to make a forward-looking estimate of the statutory tax rate. KPMG explained why it did not consider it appropriate to use estimates of the effective corporation tax rate over the 2020-25 period.
- 8.3 KPMG's estimate of the statutory corporation tax rate was 17% which it said was expected to apply over the forecast price control period following planned reductions by the UK government.
- 8.4 In its business plan test questions, the UR had told SONI that its business plan submissions in relation to corporation tax "[s]hould include consideration of potential role for a targeted and proportionate uncertainty mechanism in relation to uncertainty about future rates of corporation tax". SONI's business plan did not address this issue.

Review of SONI / KPMG proposals

- 8.5 KPMG's proposal to use the statutory corporation tax rate, rather than the effective corporation tax rate, seems reasonable and is in line with the approach in the 2015-20 SONI price control. This is the current approach. A switch of approach in the treatment of corporation tax from one price control period to the next would raise transition issues and there does not seem to be a need for a change of approach.
- 8.6 SONI's business plan seems to have ignored the question of whether the price control allowance for return on the RAB over the 2020-25 price control period should be hard-coded to use a forecast of the statutory corporation tax rate over that period of whether some form of uncertainty mechanism should apply which adjusts the allowance, mechanistically, according to the statutory corporation tax rate that applies over the price control period.
- 8.7 The UK corporation tax rate has changed significantly over time. It was 28% in 2010. It is currently 19% and while it was scheduled to reduce to 17% that planned decrease was cancelled in the Government's 2020 Budget.
- 8.8 The corporation tax rate is a political matter which is difficult to predict accurately over the 2020-25 period. In this context we see a strong case for an uncertainty mechanism targeted on the prevailing statutory corporate tax rate. This would

enable customers to benefit from any reductions in the rate that were not anticipated at the price control review, and it would provide protection to the TSO against unexpected increases in the rate. The application of such a mechanism is reasonably straightforward in terms of licence drafting and, because the corporation tax rate is clearly exogenous to SONI's actions, some of the concerns about incentive effects that can arise with uncertainty mechanisms do not apply.

8.9 The final determinations for the 2015-20 SONI price control included an uncertainty mechanism for corporation tax.⁹ There is wider regulatory precedent in Northern Ireland for the price control licence conditions to take account of the prevailing corporation tax, rather than forecasts, in determining maximum allowed revenues (e.g. see NIE Networks distribution licence).

Draft determination on the corporation tax rate

- 8.10 We propose to apply a mechanistic uncertainty mechanism as part of the SONI price control licence conditions so that the pre-tax WACC that applies in each year of the control is subject to adjustments to reflect the applicable statutory corporation tax rate in that financial year.
- 8.11 This means that what ultimately matters for SONI's revenue allowances would be the applicable statutory corporation tax rate rather than the assumption on the rate we make in our draft or final determinations.
- 8.12 For the purposes of the figures and forecasts presented in this appendix, and for our draft determinations, we used a working assumption of a corporation tax rate of 17% over the 2020-25 period, in line with SONI's proposals. This is consistent with SONI's assumption, which allows for more like-for-like comparisons. We will consider this assumption further for our final determinations.

⁹ Paragraph 362 (also 370) of NIAUR (2016) "Final determination Price Control 2015-2020 for the Electricity System Operator for Northern Ireland (SONI)





9. Cost of debt for notional TSO

Summary of SONI / KPMG proposals on the cost of debt

- 9.1 SONI's business plan proposed an allowance of 2.14% (CPIH-stripped) for the cost of debt, based on the figures reported by KPMG in its report. Further details of the derivation of this figure are provided in KPMG's report.
- 9.2 KPMG's estimate of the overall cost of debt of 2.14% (CPIH-stripped) is made up of three elements:
 - An estimate of the benchmark cost of debt of 1.14% (CPIH-stripped).
 - An uplift of 0.40% to the benchmark cost of debt to account for SONI's smaller size and higher operational gearing relative to comparators used to derive the benchmark cost of debt.
 - A separate uplift of 0.60% to cover debt issuance or arrangement costs.
- 9.3 The benchmark cost of debt of 1.14% (CPIH-stripped) was derived by KPMG using backward-looking estimates: five-year trailing averages, of the yields on 10-15-year comfortable investment grade (A-rated and BBB-rated) non-financial corporate bonds.
- 9.4 KPMG proposed an uplift of 0.4% to this benchmark cost of debt to take account of SONI's special characteristics, which may mean that it faces higher borrowing costs relative to the comparator companies used to construct the benchmark rate of 1.14%. In particular, it pointed to:
 - SONI's higher operational gearing and smaller size compared to traditional regulated utilities.
 - The fact that SONI is funded through bank lending rather than bond finance.
 - SONI does not benefit from a credit rating.
- 9.5 KPMG estimated that SONI's actual cost of borrowing was 1.55% (CPIH-stripped), which is higher than its estimate of the benchmark cost of debt. According to KPMG, SONI accessed borrowing through a floating interest rate product, and KPMG calculated an "equivalent fixed rate" to allow for comparison with the benchmark rate. KPMG said that SONI's actual cost of borrowing should be seen as the lower bound for the cost of debt allowance as it is based on a floating interest rate product, and therefore does not take account of the risks from exposure to a floating interest rate.
- 9.6 KPMG also quoted regulatory precedent from the water sector on small company premia on top of the benchmark for the cost of debt allowance:
 - In its PR14 price control determination, Ofwat had allowed two water-only companies (WoCs) an uplift of 25 basis points on the notional cost of debt



allowance to reflect their small size.

- In its 2015 determination on Bristol Water, the CMA included uplifts to its estimates of the benchmark cost of debt to reflect Bristol Water's smaller size. The CMA applied an uplift of 0.4% to reflect the difference between actual cost of WoC debt and the actual cost of water and sewerage companies (WaSC) debt, based on the observed difference between WOC actual debt cost and the WaSC actual debt costs.
- KPMG noted that Ofwat's PR14 advisers found that the spread between the "effective cost of Artesian loans [used by WoCs] and WaSC financing was estimated to be 26bps". Furthermore, the advisers found that "for small WoCs there were three instances in which the bond market had been accessed and the spread at issue was 30bps above WaSCs".
- 9.7 KPMG suggested an uplift of 0.60% for issuance and arrangement fees. KPMG pointed to recent regulatory precedent, which range from uplifts of 10 to 60 basis points. Specifically, KPMG quoted the following regulatory decisions:
 - The CAA (Heathrow), Ofwat PR19 and Ofcom (BT Openreach) each allowed an uplift of 0.10% for issuance costs.
 - We allowed an uplift of 0.20% for NIE Networks and 0.30%-0.60% in other recent decisions. KPMG referred, in particular, to the UR's price control decision in 2017 in relation to firmus energy, which allowed an uplift for issuance costs of 0.60%.
- 9.8 KPMG added that the actual arrangement fee for SONI's term loan of 0.75% also supports its estimate of 0.60%.

Review of SONI/ KPMG proposals and other precedent

- 9.9 This section sets out our view on each element of SONI's proposed allowance for the cost of debt.
- 9.10 SONI's estimates for the benchmark cost of debt of 1.14% are largely driven by analysis relating to historical estimates of interest rates that may apply to the embedded debt of the notional TSO (these are proxied by 5-year trailing average yields on A/BBB rated 10-15 year iBoxx corporate non-financial indices).
- 9.11 One potential concern is that this historical analysis could lead to overestimation of the average cost of debt for the notional TSO, in a context where interest rates on newly issued debt (i.e. debt issued during the 2020-25 period) are lower than on borrowings made in the past. This was a concern we would have in particular under SONI's proposed 55% notional gearing assumption, because of the greater role of debt that this implies for the overall WACC. Given our forecasts of the SONI RAB, a notional TSO operating at 55% gearing would issue a considerable amount of new debt either towards the end of the 2015-20 period or over the 2020-25 period. But the (lower) costs of recent and new debt, relative to debt raised earlier in the 2015-20 period, did not seem to be taken into account in SONI's proposals for the costs



of debt.

- 9.12 However, given our notional gearing assumption of 30% for the 2020-25 period, there is less of a concern about over-estimation of the cost of debt by not accounting for the costs of new debt relative to embedded debt, because the cost of debt finance would be less influential on the overall WACC. The emphasis that KPMG's analysis placed on historical yields did not seem a major concern under a 30% gearing assumption within the wider context of our draft determinations (though that is not to say that it could not be questioned).
- 9.13 We also considered the potential relevance of the CMA's cost of debt assessment for its provisional findings in the NERL case (March 2020).¹⁰ On a CPIH-stripped basis, the CMA's figures imply a cost of new debt for NERL of around 0.15%; a cost of embedded debt of around 3.38%; and an overall cost of debt of around 2.04%. The overall cost of debt of 2.04% is significantly higher than the benchmark rate of 1.14% for SONI above. However, the CMA's estimate for NERL's embedded debt reflected a specific NERL bond which reflects NERL-specific factors, using different evidence to that used by SONI for its benchmark rate, which we have drawn on. In particular, the NERL bond was issued around 2003 and reflects higher interest rates at the time – these historical interest rates do not seem relevant to SONI's debt finance, especially as much of the debt for the notional TSO would reflect relatively recent market rates (e.g. debt raised in the last few years for I-SEM implementation costs). We considered that the CMA's proposed overall cost of debt for NERL is not a good guide to SONI cost of debt, but that it does highlight the CMA's view of the relatively low costs for new debt, which is well below the KPMG benchmark rate for SONI.
- 9.14 We now turn to consider potential adjustments to the benchmark rate.
- 9.15 KPMG proposed an uplift of 0.4% based on its assessment that SONI would face higher borrowing costs than UK network utilities due to its smaller size and other characteristics, including its lower operational gearing. KPMG argued that: "An efficient licensee of SONI's size is likely to have access to less competitive and more limited sources of debt finance compared to traditional regulated utilities and that implied by the market benchmark".
- 9.16 KPMG's proposed uplift of 0.4% is at the upper end of the regulatory precedent on small company premia allowed in the water sector that it quoted in its report. We also note that Ofwat's final determinations for PR19 included a small company premium of 0.33% on the allowed cost of debt for four water-only companies in England.¹¹
- 9.17 In our final determination for the gas distribution price control (GD17), we allowed an explicit illiquidity premium of 0.4% as part of the allowance for the cost of new debt to take account of the possibility that the gas distribution companies (PNGL

¹⁰ Paragraphs 12.123 CMA (2020) "NATS (En Route) PIc/CAA Regulatory Appeal Provisional findings report".

¹¹ This is estimated by Ofwat as a weighted average of the premia for embedded debt (0.35%) and new debt (0.25%).

and FE) may have to pay a small premium in comparison to other borrowers, reflecting possible illiquidity of their bonds as compared to more actively traded GB utility debt. The size of the uplift was based on the observed premia in the pricing of PNGL's debt since the resolution of the 2012 Competition Commission inquiry.

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- 9.18 In our final determination for the gas transmission price control (GT17), we considered and rejected the need for an illiquidity premium. We said that an uplift would potentially be relevant if GNI (UK) were borrowing directly from private lenders and/or issuing bonds. However, we noted that GNI (UK) had entirely financed its licensed activities in Northern Ireland through an intercompany loan from its parent company and that the parent company had been able to secure debt finance at negative real interest rates.
- 9.19 We did not apply an illiquidity premium for NIE Networks as part of the RP6 price control decision.
- 9.20 We now comment further on KPMG's proposed uplift of 0.6% to the benchmark cost of debt to take account of debt issuance costs. According to KPMG, this uplift was required because the benchmark cost of debt "does not reflect the cost of raising debt finance or fees paid by the issuer, which need to be added to derive the [...] actual cost of debt financing to borrowers". KPMG added that "It is difficult to benchmark issuance costs and arrangement fees robustly as they vary depending on whether the sample includes private or public placements, the financial position of the business/market at that time and the type of debt, quantum issued etc".
- 9.21 We recognised that debt issuance costs may be affected by a number of factors, including the size and characteristics of the company, the amount of debt being raised, and the type of debt instrument used. However, KPMG's proposed uplift of 0.60% seemed significantly out of line with recent regulatory precedent, which have tended to cluster around the 0.10% mark.
- 9.22 In its final determination for the PR19 price controls, Ofwat allowed an uplift of 0.10% for "debt issuance and liquidity" costs. This was based on the recommendation of Ofwat's consultants, Europe Economics, which looked at the actual costs associated with all water company debt issuances between 1993 and 2017. Europe Economics' recommended overall uplift of 0.10% included an uplift of between 0.03% and 0.06% for issuance costs and an uplift of between 0.035% and 0.045% for costs associated with maintaining a revolving credit (liquidity) facility.
- 9.23 We also note that, as quoted by KPMG, CAA (Heathrow H7), Ofwat PR19 and Ofcom (BT Openreach) have each allowed an uplift of 0.10% for debt issuance costs.
- 9.24 KPMG quoted the UR's decision to allow an uplift of 0.60% for debt issuance costs for firmus energy as part of our gas distribution price controls. In our final determination for the gas distribution price controls, we had allowed an uplift of 0.60% for FE and 0.4% for PNGL to cover the transaction costs of re-financing existing debt in line with actual costs incurred by the companies' previous debt-raising exercises.



9.25 Neither SONI nor KPMG provided any evidence to support the view that the notional TSO would face debt issuance or arrangement costs of 0.6%. The KPMG report says that SONI's actual arrangement fee for a term loan (0.75%) "supports this estimate", but it does not explain how it does so or provide sufficient supporting information on these costs.

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Draft determination on the cost of debt

- 9.26 For our draft determinations, we decided to determine an allowance for the cost of debt by considering in turn the three elements of SONI's proposals for the cost of debt allowance: (i) an estimated benchmark rate of 1.14% (CPIH-stripped) derived from yields on corporate bonds; (ii) an uplift of 40 basis points take account of SONI's special characteristics and circumstances; and (iii) a further uplift of 60 basis points to cover debt issuance or arrangement costs.
- 9.27 On the basis of the considerations set out above, we decided not to intervene on the estimated benchmark rate of 1.14% (CPIH-stripped), at least if applied in conjunction with our notional gearing assumption of 30%.
- 9.28 We had concerns about applying a premium for SONI's special characteristics and circumstances. The summary of regulatory precedent above shows that while there is evidence of uplifts to the cost of debt being allowed for smaller companies, we have also taken into consideration the situation of a regulated company within its wider corporate group (GT17). As identified in the working paper on financial issues published alongside the consultation on our regulatory approach to the 2020-25 SONI price control,¹² there is a question to consider as to whether the notional TSO licensee, for which the allowed return element of the price control is to be calculated, is taken to be an entirely standalone independent company, or as a company which is part of a wider corporate group and which benefits from being part of that group (e.g. in terms of perceived creditworthiness).
- 9.29 We do not consider that SONI is sufficiently separate from EirGrid to be treated as a company qualifying for a small company premium on the cost of debt. EirGrid is a larger company, owned and backed by the Republic of Ireland state.
- 9.30 We do not consider it reasonable for the 2020-25 SONI price control to charge NI customers additional money on the basis that a hypothetical standalone NI TSO would have a higher cost of debt than a larger company, in a context where these customers are not served by a standalone TSO and do not receive the benefits that a standalone TSO would bring. And, without a greater degree of separation between the NI TSO and EirGrid, we have not identified a reason to fund SONI for costs that it would be expected to face in a hypothetical scenario of independence from EirGrid.
- 9.31 On the basis of SONI's current governance arrangements, and its relationship to EirGrid, we propose to determine a cost of debt allowance for a notional TSO that is

¹² Reckon (2018) *Northern Ireland TSO price control 2020-25: Working paper on financial issues*, page 17.

part of EirGrid. Given EirGrid's larger size and state ownership, and the lack of evidence from SONI on the case for a cost of debt premium for a notional TSO that enjoys this parent company arrangement, we propose no uplift for the TSO's special characteristics or circumstances under the current ownership and governance arrangements.

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- 9.32 However, we intend to publish a consultation on SONI's governance arrangements in July 2020. That consultation will include an assessment of whether, in consequence of any proposals on SONI's governance we make, a premium on the cost of debt under the 2020-25 SONI price control would be warranted, to allow for higher financing costs for SONI that is significantly closer to a hypothetical standalone, independent TSO.
- 9.33 We do not propose to accept SONI's proposal for an uplift of 60 basis points for cover debt issuance or arrangement costs. This scale of uplift seemed very high in relation to set of regulatory precedent presented by KPMG for SONI, and in comparison to the CMA's provisional findings in the NERL price control case, in which the CMA made an allowance of 0.1% for issuance costs and 0.05% for liquidity costs.
- 9.34 Furthermore, we were concerned about the risk of double counting. Debt issuance costs and arrangement fees may form part of SONI's operating costs, and there may well be an implicit allowance for these costs within the operating expenditure allowances we provide in our Annex 6, Cost allowances. In its business plan submission, SONI did not provide assurance that there would be no double counting if an uplift to benchmark debt costs were to be applied.
- 9.35 We also considered whether, subject to confirmation of no double counting, we might allow for an uplift of 10-15 basis points, in light of the other regulatory precedent above. We calculated that such an allowance would give an annual allowance of around £10,000 to £15,000. We did not consider this a material cost item for the SONI price control.
- 9.36 On the basis above, our draft determination for SONI cost of debt is an initial allowance of 1.14 (CPIH-stripped).





10. Remuneration of a parent company guarantee

10.1 This section reviews SONI's proposals for remuneration of the parent company guarantee. This issue is closely linked to section 2, which considers the gearing assumption for the notional TSO. This is because the position on the parent company guarantee is part of a broader question of the financial structure to assume for a notional TSO.

Summary of SONI's business plan proposals

- 10.2 SONI's business plan is presented on the basis that there will continue to be a £10m PCG to support SONI activities. The business plan (page 12-6) stated that the PCG "provides a necessary component of SONI's financial security, important to protect benefits to customers and avoid undue transfer of risk, that gives it access to efficient credit facilities and permits it to carry out the functions necessary for day-to-day system operations".
- 10.3 SONI's business plan proposed remuneration of this £10m PCG at the same rate as determined by CMA determination in the SONI appeal in 2017 (i.e. 1.75% nominal). SONI said that its estimate of the cost of provision of the PCG to SONI as SONI is premised on the continued remuneration of a PCG within the SEMO control at the current rate of 2.5% per annum.

Review of SONI's business plan proposals

- 10.4 Before considering the rate of remuneration of the PCG, there is a preliminary question of whether it makes sense to assume a role for a PCG in for the notional TSO over the 2020-25 period.
- 10.5 While SONI should be remunerated reasonably for the obligations it faces, including any PCG requirements, the implementation of the 2020-25 SONI price control will involve modifications to existing licence conditions and there seems no reason to assume that existing SONI obligations such as the PCG would need to be maintained.
- 10.6 We did not consider that SONI had provided a good justification for the position that the notional TSO would require a £10m PCG. SONI indicated that the PCG was a necessary component of its financial structure, but did not provide evidence for this. SONI did not explain why £10m was an appropriate amount for the PCG rather than a higher or lower amount. Furthermore, while KPMG recognised that the PCG was a substitute in some way for a structure involving a higher proportion of equity capital finance for the RAB, neither KPMG nor SONI showed any consideration of scenarios for the notional capital structure in which there was less debt, which might enable the PCG to be removed.
- 10.7 A PCG is unusual amongst the set of regulated companies that SONI and KPMG drew on for other parts of the assessment of the appropriate allowed return for the

SONI price control. In UK regulatory practice, the typical approach is to set the price control on the basis of a notional capital structure that would allow the company to be financed on a standalone basis, without assuming financial support from parent companies or other group companies.

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- 10.8 We consider it important to understand SONI's PCG within its historical context. The PCG was introduced around 2010, when SONI's RAB was expected to be much smaller. SONI's RAB is now significantly higher, partly due to the introduction of a RAB for transmission network pre-construction projects. Overall, SONI is expected to be more heavily capitalised in the 2020-25 period than it has been on average over the period from 2010 to 2020.
- 10.9 The increase in capitalisation raises the question of whether a PCG is still needed for SONI activities.
- 10.10 One role of a PCG is to provide contingency equity capital, beyond the conventional equity invested in the business, which provides additional protection to creditors (e.g. debt holders and suppliers) and to customers against the risks of SONI experiencing financial distress.
- 10.11 From the perspective of a notional TSO, the PCG would provide an additional equity buffer beyond the notional equity element of the RAB (the element of the RAB that is assumed not to be debt financed). On this basis, there will be less of a need for a PCG the higher is the notional equity element of the RAB, which depends on the size of the RAB and the gearing assumption.
- 10.12 During the period 2010-15, SONI's £10m PCG comprised a large element of the assumed capital structure for the SONI price control, due to two factors. First, the relatively low level of the RAB (around £16m on average) and, second, the regulatory gearing assumption that 55% of the RAB was funded through debt rather than equity. For this period, the total equity capital identified to support the business, comprising RAB equity and the PCG, was around £18m.
- 10.13 For the 2020-25 period, the overall RAB is forecast to be significantly higher (£36m on average based on our proposed capex allowances). Further, as discussed in section 2, there is a case for a 30% notional gearing assumption. Under these forecasts and a 30% gearing assumption, our forecasts of the total equity capital to support the business, excluding any PCG, would average around £23m, as shown in Figure 6.



Figure 6: Notional TSO equity under 30% gearing with no PCG

- 10.14 The need for a PCG will depend also on the scale of financial risk that SON faces, which is heavily influenced by the price control framework (e.g. any caps/collars on incentive schemes, cost-sharing arrangements and risk transfer arrangements). We have not identified any reason why the scale of risk in the 2020-25 period would be such that a PCG would be needed by a notional TSO in addition to the equity capital in the RAB under a 30% notional gearing assumption. Furthermore, we propose a lower-risk financial incentive framework than proposed by SONI, with a lower maximum financial penalty for the performance framework, which should reduce the level of equity capital needed to allow the business to accommodate financial risk.
- 10.15 In addition to the historical comparison above, we also compared the notional capital structure involving 30% gearing and no PCG against SONI's proposed notional capital structure, which is 55% gearing and a £10m PCG. SONI's proposals would imply a similar profile and scale of equity to support the business as the alternative above of a PCG but 30% gearing. This provides further support for the view that, at least with 30% gearing, it would be unnecessary to also include a £10m PCG within the notional capital structure.
- 10.16 Overall, we did not consider that SONI provided a good rationale for the inclusion of a £10m PCG within the notional capital structure. The case for a £10m PCG seemed especially weak under our proposed notional gearing assumption of 30%.
- 10.17 Given our position on the PCG, we did not consider it necessary to review whether SONI's proposed rate of remuneration for the PCG, based on the rate from the CMA determination in the SONI appeal from 2017, was appropriate for the 2020-25 control period.







Figure 7: Notional TSO equity under 55% gearing with PCG

Draft determinations on PCG remuneration

10.18 For the purpose of estimating the pre-tax WACC for the notional TSO, we propose a notional capital structure involving no PCG (assuming also the 30% gearing assumption discussed earlier). We have not identified a need for a PCG under our notional capital structure, and our draft determinations do not therefore involve remuneration of a PCG.

Proposed revisions to PCG obligations on SONI

- 10.19 There are some interactions between the notional capital structure and the regulatory obligations for a parent company guarantee imposed on SONI (e.g. through the TSO licence).
- 10.20 Given that we intend to assume a notional capital structure, for the purposes of setting the pre-tax WACC for the SONI price control, which does not involve a PCG we want to ensure that this is not inconsistent with the TSO licence obligations.
- 10.21 We propose to amend the TSO licence such that the PCG obligation in relation to SONI activities would not apply provided that SONI's actual level of debt is less than 40% of the prevailing level of its RAB (in the relevant price control financial year).
- 10.22 This arrangement to retain a PCG in circumstances in which SONI operates with higher gearing provides a safeguard to ensure that SONI does not operate in a way that provides significantly lower financial resilience to customers and the wider electricity system than funded through our price control allowances and assumptions on the notional TSO financial structure.
- 10.23 The 40% threshold would provide SONI with some flexibility above our notional



gearing assumption of 30%.

- 10.24 We considered whether, if SONI were to choose to operate with higher gearing than 40% (e.g. its proposed 55%), and if it was required to have a £10m PCG as a consequence of this choice, the price control framework should provide additional remuneration for the PCG in this specific situation. Our view is that additional remuneration from customers would not be appropriate.
- 10.25 A decision by SONI to adopt gearing above 40% would be a choice that SONI would be making to operate with a different capital structure to the notional capital structure.
- 10.26 Provided that the notional capital structure is reasonable, we do not consider it to be appropriate or consistent with UK regulatory practice for the price control framework to provide additional remuneration for any additional financing costs associated with divergences from the notional capital structure.
- 10.27 We have shown in section 13 that, under our notional capital structure, the estimated RoRE risk exposure for SONI is similar to that for listed water companies. This provides some high-level evidence that this is a reasonable and manageable level of risk exposure for a company subject to RAB-based price control regulation. Furthermore, under our proposed capital structure, the total equity invested in the business, and at risk, is similar to that under the notional capital structure in SONI's business plan.
- 10.28 Starting from the baseline of our notional capital structure, an increase in gearing would tend to decrease the financial resilience of SONI (all else equal), which could be detrimental to customers.
- 10.29 In this context, we considered an option in which we would seek to protect customers from decreases to the financial resilience of SONI by prohibiting SONI's gearing from being significantly above our notional gearing. However, we did not consider this a proportionate response, because a similar level outcome could be achieved through a more flexible approach: allowing for higher levels of gearing if accompanied by a PCG.
- 10.30 The inclusion of a PCG obligation in a high-gearing scenario offers mitigation to customers against the reduction in financial resilience that could otherwise arise from SONI choosing to operate with higher levels of debt (compared to the notional capital structure than customers have paid for).
- 10.31 It may be the case that 55% gearing, combined with a £10m PCG, is more convenient in some ways for SONI's investors than our notional capital structure. But if this capital structure is more costly to customers than our notional capital structure, without providing offsetting customer benefits, we have not identified a reason why customers should fund the higher-cost structure.
- 10.32 We also considered, as an alternative to a PCG, decreases to the scale of financial risk borne by SONI under the framework as a means to tackle any reductions in financial resilience arising from higher gearing (e.g. smaller maximum penalty under



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the performance framework). But calibrating financial incentives based on SONI's proposed gearing level would conflict with calibration of incentives for our notional gearing level. Furthermore, we were concerned that if the maximum financial penalty for very poor performance under the evaluative framework was set well below £1m, SONI's investors would have too little at stake (we have already reduced the maximum penalty compared to SONI's business plan proposals).

10.33 There is a question of whether the mitigation offered by the PCG is needed, even in a 55% (or higher) gearing scenario. It is possible that, despite the comparisons we have made with regulated water companies and SONI's business plan, there would be sufficient financial resilience at much higher levels of gearing than assumed for our notional capital structure, without any PCG. We would welcome evidence and analysis from stakeholders on this matter. We would be open to considering the full removal of the PCG obligation if there were grounds to be confident that, under our proposed price control framework, SONI could operate at high levels of gearing without exposing customers to inappropriate levels of financial resilience risk.





11. Remuneration of risk from revenue collection activity

11.1 This section reviews SONI's proposals for remuneration of its revenue collection activity. It considers both the scope of revenues that a margin should apply to and the margin rate to apply to qualifying revenues.

Summary of SONI proposals on remuneration of revenue collection risk

11.2 In its business plan (page 12-8) SONI provided an overview of what it sees as its revenue collection role and the risks arising from this:

"SONI manages a number of collection agent activities and is responsible for the handling of cashflow imbalances in respect of balancing costs, Transmission Use of System (TUoS) collection and payments in respect of system services.

Effectively the industry wide risk of the management of these imbalances is pooled in SONI and as a result industry wide costs, and ultimately costs to customers, are reduced.

However, SONI faces additional risks from managing the often volatile working capital requirements associated with the handling of these cashflow imbalances and in order to do so SONI must hold significant reserves of working and contingent capital. This is an essential service for delivering the benefits to consumers of a well-functioning electricity market"

- 11.3 SONI stated that the level of risk, and thus the associated cost, relates to the size of the revenues being handled, and that it is appropriate for the revenue requirement to be in the form of a margin on revenues. SONI said that the following revenues were relevant for the application of a margin (business plan page 12-9):
 - dispatch balancing costs (DBC) incurred by SEMO, variances in which are reimbursed by SONI (also known as imperfections charges);
 - TUoS Charges, remunerated through the At term in SONI's current SONI price control licence conditions; and
 - ancillary and other system services, also remunerated through the At term.
- 11.4 The current SONI price control provides a remuneration rate of 0.5% on these revenues, which was part of the remedies determined by the CMA during the SONI appeal in 2017. SONI's business plan for the 2020-25 period proposed a margin of 0.6%. It said that the level of risk of the cashflows concerned is expected to be somewhat greater in the 2020-25 period than on average over the course of the



current price control. SONI argued as follows (page 12-9):

"... the main factor dictating a change in the margin requirement is the company's exposure to risk arising from the introduction of the I-SEM.

In paragraph 12.144 of its final determination, the CMA identified this as an additional risk factor for the latter part of the 2015 20 control period, after 2018. Whilst the current margin of 0.5% applied across both the SEM and I-SEM periods within the current control, the higher level of relative risk in the I-SEM context would apply to the whole of the 2020-25 period."

Further consideration of the scope of the revenue qualifying for a margin

- 11.5 SONI's broad approach of seeking a margin on qualifying revenues associated with a revenue collection role is consistent with the CMA's determination in the SONI appeal in 2017 and with our March 2019 SONI price control regulatory approach decision.
- 11.6 Before reviewing SONI's proposals on the margin rate, we first consider the scope of the margin and, more specifically, whether we should take steps to de-risk SONI to reduce the need for customers to fund a margin.
- 11.7 We agree with the CMA position, from the 2017 SONI appeal, that the nature and degree of cash flow risk borne by SONI affects the need for a margin in relation to different elements of revenue collection that it is engaged in.
- 11.8 The CMA found that SONI should be remunerated for its revenue collection role in relation to imperfection charge (DBC) revenues; TUoS revenues, and system support services revenues, in view of non-negligible risks that SONI bears in relation to this revenue collection activity. However, the CMA also found that no margin was needed in relation to SONI's role in revenue collection for the Moyle interconnector, because the specific financial arrangements between Moyle and SONI had the effect of insulating SONI from risk. The CMA recognised that the risk profile for Moyle interconnector revenues was different to that for other revenue streams, since SONI only has to pay out what it has collected.
- 11.9 In the case of TUoS revenue collection, it seems a matter of choice, rather than necessity, as to whether SONI or NIE Networks bears cash flow risk relating to the timing of payments received in respect of TUoS tariffs. This raises the question of whether it is efficient, from a system-wide perspective, for SONI to bear cashflow risk in relation to TUoS revenue collection, especially when this comes at the cost of a 0.5% margin on TUoS revenues charged to customers. Despite its relevance, SONI did not engage with this question in its business plan.
- 11.10 We do not consider that SONI's business plan provides a sound basis for maintaining arrangements for the 2020-25 under which:



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- NIE Networks does not pay any charge for the cashflow management service provided to it by SONI, despite this service having an economic cost that is imposed on other parties in the electricity system.
- 11.11 As a larger company, with a larger balance sheet and higher profits, NIE Networks seems better placed than SONI to manage and potentially absorb any cash flow risk relating to TUoS revenue collection.
- 11.12 Subject to consultation, including with NIE Networks, we propose to make changes to SONI's financial arrangements for TUoS so that it is de-risked (with risk transferred to NIE), so that customers can avoid a funding margin on the TUoS element of SONI's revenue collection role.

Review of SONI proposals on the margin rate to be applied

- 11.13 We reviewed SONI's explanation of its case for a higher margin of 0.6% rather than the 0.5% determined by the CMA.
- 11.14 SONI said that relative risk in the management of cashflows in each of the three areas (revenue streams) was expected to increase in the forthcoming price control period, but that the main factor dictating a change in the margin requirement was its exposure to risk arising from the introduction of the I-SEM.
- 11.15 We did not consider that SONI has provided sufficient grounds to make an adjustment from the 0.5% margin set as part of the CMA determination in the SONI appeal.
- 11.16 SONI did not provide evidence to substantiate the view that the cashflow risk to SONI associated with I-SEM is greater in the 2020-25 period and that the increased this risk cannot be reasonably remunerated by the 0.5% margin provided for by the CMA. SONI did not provide evidence of changes in cashflow risk over time associated with I-SEM. And SONI did not consider how its ability to manage cashflow risk arising from I-SEM might develop over time, as it benefits from experience with the new arrangements.
- 11.17 Instead, SONI's argument focused on drawing inferences from the CMA's determination. SONI's argument for a higher margin seems to rest on the following:
 - A view that the CMA's position was that: (a) the 2015-20 period was characterised by a lower-risk part (early part of the period before I-SEM introduction) and a higher-risk part (once I-SEM was introduced); and (b) that the 0.5% margin was appropriate on average over this period but that a higher rate would be applicable for the higher-risk part.
 - 2. A view that the 2020-25 period will correspond more closely to the higherrisk part of the 2015-2020 period because it is a full I-SEM period and





therefore requires a higher margin than 0.5%

- 11.18 We did not consider that SONI has established support for either points (1) or (2) above. On point (1) we highlight the following:
 - Paragraph 12.144 of the CMA's final determination shows that the CMA considered that the revenues and associated costs were either likely to increase or be subject to greater risk following the introduction of the I-SEM in 2018. The CMA left open the question of which of these two possibilities would materialise.
 - To the extent that revenue-collection revenues (e.g. imperfection charge revenues) have increased as a consequence of I-SEM, SONI will automatically receive a higher remuneration for risk (in £) since the margin rate will be applied to a larger amount of revenue. There seems no reason to increase the margin rate simply because the revenues are expected to increase.
 - Paragraph 12.144 of the CMA's final determination does not demonstrate that the CMA was expecting the cashflow risk associated with a given amount of revenue collection activity (in £m) to increase with the introduction of I-SEM. We do not consider there to be a good basis to deduce that the CMA would have determined a higher rate than 0.5% for the period following introduction of I-SEM.
 - At paragraph 12.145 the CMA states that: "We can confirm that we have not set an allowance which is set at a level which assumes any particular change in risk following the introduction of the I-SEM". Our interpretation is that this runs counter to SONI's argument that the 0.5% was predicated on the expectation of higher-risk period following the introduction of I-SEM.
- 11.19 In relation to point (2) above, it is important to recognise that the CMA's focus was on the 2015-20 period and the CMA determination does not provide a good basis to draw conclusions about risks in the 2020-25 period. Even if the CMA had thought that the appropriate margin, for the period following I-SEM introduction to 31 September 2020, warranted a higher margin rate than 0.5% (which seems unsubstantiated) this would not necessarily imply that a rate higher than 0.5% is needed for the 2020-25 period. For instance, it seems quite possible that the cash-flow risk (per £m of revenue collection) would reduce to some degree as I-SEM becomes established, as market participants become more familiar with it, and as SONI develops ways to better manage the cash-flow risk arising from the new arrangements.
- 11.20 We considered whether the exclusion of TUoS revenues from the revenues qualifying for a margin, as discussed in the sub-section above, would affect the appropriate margin rate. It seems plausible that the cashflow risk faced associated with imperfections charges is greater than the cashflow risk as sociated with TUoS revenues (though we note that SONI told the CMA that revenue uncertainty was greater for TUoS than DBS revenues/imperfections charges). However, whether



this calls for an increase to the margin rate of 0.5% depends on how that margin rate was determined. If it were based on a detailed analysis of comparator information that was precisely calibrated for the cashflow risk for a package comprising imperfections charges, TUoS revenues and system support revenues, then we can see how changes to the composition of that package could affect the appropriate margin rate (at least if there is evidence of significant differences in risks associated with different revenue components). However, the CMA's figure of 0.5% was not based on analysis at this level of detail and the CMA referred to the challenges in coming to a point estimate for the appropriate level of the margin (paragraph 12.147).

- 11.21 There is also a potential double counting concern. SONI's remuneration for the risk of its revenue collection activities is primarily through the margin. However, some of SONI's capital assets (e.g. IT system, facilities) will be used for its revenue collection activities and SONI earns a WACC*RAB return on its RAB in respect of such capital assets. The lack of granularity in SONI's cost reporting at present means it is difficult to assess the materiality of this issue.
- 11.22 Finally, we considered that there is likely to be leeway within the 0.5% margin to accommodate somewhat greater risk should that materialise. The CMA explained that its figure of 0.5% was derived from a range of 0.25%–0.5% and that in selecting a margin rate of 0.5%, at the top of this range, it had "erred on the side of caution" (paragraph 12.152). For our draft determination for the 2020-25 period, we were unconvinced that there is a good basis to err one way or another in making a regulatory judgement on the margin rate to apply to SONI's revenue collection activities. This would suggest that 0.5% might be an over-estimate of the appropriate margin for the UR to set for the 2020-25 period, at least in the absence of evidence of an increase in risk compared to the 2020-25 period.

Draft determination on revenue collection risk

- 11.23 Based on the consideration above, we propose to retain the margin rate of 0.5% on qualifying revenues from the CMA determination, rather than adopting SONI's proposal of 0.6%.
- 11.24 We also propose changes to the financial arrangements between NIE Networks and SONI which would have the effect of de-risking SONI so that it is in a similar position with TUoS revenues as it is with Moyle interconnector revenues (e.g. so that SONI's obligations to make payments to NIE only relate to money that it has collected). Once TUoS revenues are de-risked in this way, we propose that no margin would apply to TUoS revenues.





12. Debt financeability analysis

12.1 This section sets out our approach to debt financeability analysis for the notional TSO. Our approach draws on SONI's own approach to the analysis of financeability as set out in Section 12.10 of its business plan.

Summary of SONI's approach

- 12.2 SONI's business plan presented its approach to assessing the financeability of the notional TSO under its assumptions and forecasts of costs and revenues during the 2020-25 price control period.
- 12.3 As part of its analysis, SONI looked at conventional debt financeability metrics as well as a profitability metric. In particular, the following metrics were considered in SONI's business plan:
 - Adjusted interest coverage ratio (AICR), which SONI also refers to as the post maintenance interest coverage ratio (PMICR). A threshold of 1.8 was proposed by KPMG.
 - Funds from operations (FFO) divided by net debt. A threshold of 12% was proposed by KPMG.
 - Net debt divided by RAB. A threshold of 55% (based on SONI's assumed notional gearing) was proposed by KPMG.
 - EBIT margin on total revenue (%). A threshold range of 1.5% 3% was proposed by KPMG.
- 12.4 The first three metrics are conventional metrics of debt financeability that have been used by other UK regulators as part of UK RAB-based price controls. SONI justified the inclusion of a profitability metric on the grounds that there is a "heightened role for equity in SONI's financial management, as with comparable asset-light businesses", and that "rating agency methodologies for asset-light businesses place weight on profitability metrics, principally EBIT margins, when assessing the overall credit rating.¹³
- 12.5 SONI did not put forward an explanation for its proposed threshold values for any of the debt financeability metrics.
- 12.6 SONI explained its proposed threshold for the EBIT margin metric by reference to its own analysis of EBIT margins for "regulated businesses with high pass-through activities, notably EirGrid in the Republic of Ireland, Ofwat's allowed margin for residential retail activities and DCC". SONI also said that "the CMA energy market investigation Appendix 9.13 refers to EBIT margins of 1.25 to 2%."
- 12.7 SONI's analysis of the debt financeability metrics suggests that, based on SONI's

¹³ SONI considered Moody's rating methodologies for the Business and Consumer Service industry and Diversified Technology industry.





own assumptions and forecasts of costs and revenues, these thresholds are comfortably met (in some cases, by a large margin). Its EBIT margin metric was met in four out of five years and on average over the 2020-25 period.

Our analysis of debt financeability

- 12.8 SONI's business plan said that it had developed a financial model to forecast its revenues and costs under the UR's proposed regulatory framework, and that it had used forecasts from this model to estimate its financeability metrics. In order to understand and review SONI's analysis, assumptions and forecasts, we had asked SONI to provide this financial model. However, SONI declined to share it with us.
- 12.9 We developed our own draft financial model. The purpose of our model is to:
 - Generate forecasts of notional TSO revenues and costs over the 2020-25 period, taking account of our draft proposals for various elements of the TSO remuneration under the price control framework.
 - Calculate debt financeability metrics for the notional TSO based on these forecasts of revenues and costs.
- 12.10 In order to populate our model, we drew on the following sources of information:
 - the current (post-CMA) TSO licence;
 - the (post-CMA) financial model used to calculate the RAB, depreciation and allowed return figures set out in the post-CMA TSO licence;
 - SONI's business plan data template submission (resubmitted version dated 10 February 2020);
 - our draft proposals for operating and capital expenditure allowances over the 2020-25 period;
 - our draft remuneration for SONI's equity capital and debt finance, as set out in this appendix; and
 - forecasts of revenues and costs, including those for pre-construction assets and special projects.
- 12.11 For the purposes of our modelling, we assumed that the notional TSO's actual expenditure in each year of the 2020-25 period is equal to the ex ante allowances where applicable (i.e. there are no under or overspends). This is consistent with our aim, in setting these allowances, that these represent a central estimate of the costs of the notional TSO.
- 12.12 We provide further information on how we specified the notional TSO for the purposes of our financial modelling in section 13: we used a consistent set of assumptions for the base case across both our debt financeability analysis and our analysis of RORE upside and downside risk.



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"debt financeability analysis for the notional company can be used to identify a specific error that might otherwise not be spotted, involving internal inconsistency between the assumed cost of debt and the other assumptions and policies that underpin the price control determination. The debt financeability analysis may reveal, in particular, that the assumed cost of debt is not tenable because it is based on an (explicit or implicit) assumption on the notional company's credit rating that is not compatible with other assumptions (e.g. notional gearing) and with the wider price control framework and policies and the company's activities and costs."

- 12.14 We consider that the debt financeability metrics proposed by SONI in its business plan provide a reasonable basis for our analysis and these have the potential to help highlight any errors or inconsistencies in our overall framework as set out above. We therefore estimated these metrics within our own financial model, relying on our forecasts of the notional TSO's costs and revenues.
- 12.15 In particular, we estimated the following metrics for the notional company:
 - Adjusted interest coverage ratio (AICR). This is estimated as earnings (excluding collection agent margins) before interest and taxation (EBIT) divided by notional interest costs.
 - FFO/net debt. This is estimated as earnings (excluding collection agent margins) before interest, taxation, depreciation and amortization (EBITDA) minus interest on notional debt minus notional tax liability divided by the notional debt element of the RAB.
 - Net debt/RAB. This is the ratio of the notional debt element of the RAB to the RAB. This is equal to the notional gearing assumption used to determine the WACC under the CAPM approach.
- 12.16 We thought that SONI's proposed thresholds were open to challenge. For instance, the threshold for AICR seemed high relative to regulatory precedent, without explanation. However, our results were sufficiently far from the thresholds that this was not an issue that seemed necessary to resolve for the purposes of our analysis and our draft determinations.
- 12.17 The results of our analysis are set out in the table below. The green cells show that the calculated ratios exceed the SONI thresholds in all cases.





Metric	SONI threshold	2020/21	2021/22	2022/23	2023/24	2024/25	Average 2020-25
AICR	1.8	4.77	4.77	4.82	5.03	5.53	4.98
FFO/net debt	12%	68%	72%	80%	102%	66%	78%
Net debt/RAB	55%	30%	30%	30%	30%	30%	30%

 Table 3: Analysis of debt financeability metrics

- 12.18 In line with the results from SONI's analysis, our own analysis of the debt financeability metrics suggests that SONI's proposed threshold values are forecast to be comfortably exceeded in all cases and in every year of the period.
- 12.19 We repeated the exercise above to consider (i) a version of the notional TSO that did include revenue collection margin; and (ii) a version of the notional TSO whose accounting depreciation in relation to historical capex was similar to our estimate of SONI's accounting depreciation. In both cases, figures for the various metrics were well above the SONI thresholds.
- 12.20 Our estimates differ from those reported by SONI in its business plan. While SONI did not provide the financial model that underpinned its calculations, it did provide some information in response to a query. By considering the effects of different assumptions in our model we were able to explore potential sources of the difference between our estimates and those of SONI. This analysis suggested that the differences between the two sets of estimates are largely explained by the following (there may be other differences that we are not aware of):
 - We used a gearing assumption of 30% for the notional TSO reflecting our view of the efficient financial structure of the notional TSO, whereas SONI used a gearing assumption of 55%.
 - We have applied our proposed allowed WACC and cost of debt to calculate allowed return and notional nominal debt interest liabilities and these differ significantly from those assumed by SONI.
- 12.21 In addition to these debt financeability metrics, we considered SONI's proposed profitability metrics using our financial model. In particular, we calculated an EBIT margin as the ratio between forecast EBIT and forecast revenues.
- 12.22 SONI's analysis of the EBIT margin used a concept of revenue that included:
 - price control allowances for operating expenditure;
 - allowances for RAB return and depreciation;
 - forecast revenues from System Support Services (SSS) charges, transmission use of system charges (TUoS), connections charges and



Interco (GTUoS) costs; and

- imperfections charge (DBC) revenue.
- 12.23 We did not understand SONI's rationale for including imperfections charge (DBC) revenue in revenues for the purposes of estimating the EBIT margin for the notional TSO. These are levied on an all-island basis by the SEMO JV. SONI is responsible for making up any shortfalls in DBC revenue, and it receives a separate collection agent margin for the risk that it is exposed to. Since we are setting a price control for the SONI TSO business, and not for the SEMO JV, we thought that a profit margin calculation should not include imperfections charge revenue. For the purposes of our completeness, we calculated two versions of the EBIT margin, one with DBC imperfections charge revenue and the other without.
- 12.24 We also found a lack of evidence for SONI's proposed threshold range for EBIT margins. SONI's business plan did not explain how it derived the range of 1.5% to 3% from the various sources that it identified in its business plan. Our own review of the CMA energy market investigation report (which SONI quoted prominently in its business plan), suggests that the CMA found that EBIT margins in GB regulatory determinations have been between 0.5% to 1.5% (reflecting some regulatory protection against revenue risks). The CMA also found that the EBIT margin for a "relatively asset light" energy supplier operating in a competitive market based on its ROCE analysis was around 1.25%.
- 12.25 The results of our analysis of the EBIT margin for the notional TSO are set out below.

Metric	SONI threshold	2020/21	2021/22	2022/23	2023/24	2024/25	Average 2020-25
EBIT margin with DBC	1.5%- 3%	1.43%	1.37%	1.29%	1.08%	0.90%	1.21%
EBIT margin excluding DBC	1.5%- 3%	2.09%	1.94%	1.82%	1.49%	1.26%	1.72%

Table 4: Analysis of SONI's profitability metric for the notional TSO

12.26 Our analysis shows that the EBIT margin for the notional TSO is higher (on average) than SONI's proposed threshold when DBC revenues are excluded. When DBC revenues are included, our analysis shows that the EBIT margin is forecast to fall below SONI's threshold in all years.

Findings from draft determination assessment

12.27 Analysis of debt financeability metrics for the notional TSO is a useful and important exercise as part of the determination of the SONI price control (at least if the notional gearing assumption includes some debt rather than being 100% equity).

This analysis did not indicate any problem with our draft determinations for the various elements of the SONI allowed return.

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- 12.28 Indeed, the analysis presented above indicates that the metrics on debt financeability for the notional TSO are healthy. While these metrics do not provide an overall test of the financeability of our draft determinations, they support our view that our determinations are financeable. We had further two points to highlight on this:
 - The figures indicate that these financial metrics would still be comfortable for a notional capital structure involving higher levels of debt finance (i.e. higher gearing). However, we did not treat this as a reason to assume higher debt finance in our notional capital structure, for two main reasons. First, our notional capital structure has the benefit of exposing SONI to a broadly similar degree of RoRE risk as regulated water companies (see section 13); higher gearing would imply higher RoRE risk for SONI. Second, as shown in section 15, we did not identify a significant benefit to customers from assuming a higher level of gearing, yet higher levels of debt could have drawbacks to customers in terms of lower financial resilience.
 - At our assumed notional gearing, the healthy debt financeability metrics might be a factor that enables the notional TSO to be able to raise debt finance at more attractive (i.e. lower) rates than the benchmark rate for the cost of debt estimated by SONI. This is not something that we sought to explore further for our draft determinations.
- 12.29 We presented some estimated EBIT margin figures above for completeness, given the prominent role SONI gave them in its submission on financeability. We did not consider that it would be appropriate to place weight on these figures and, in any event, they do not indicate a problem with our draft determinations for the various elements of SONI's allowed return. As set out above, the CMA found that GB regulated companies have been allowed lower EBIT margins in previous price control determinations (0.5% - 1.5%). Moreover, it also found that GB energy suppliers operating in a competitive market have an EBIT margin of 1.25%.
- 12.30 More generally, we were concerned about the existence of significant unexplained differences in the EBIT margins across different comparator companies and sectors, the potential for these comparators to differ from SONI in important ways and, in turn, the difficulty of drawing implications for the SONI price control determination from these figures. We do not accept SONI's threshold of 1.5% to 3% proposed by SONI to be sufficiently well justified or relevant to our draft determinations.





13. Upside and downside scenarios for equity return

13.1 This section sets out our analysis of the potential impacts on the equity return of the notional TSO under hypothetical upside and downside scenarios for the SONI's performance and costs during the 2020-25 price control period.

Return on regulatory equity (RoRE)

- 13.2 Our analysis considers the impact of hypothetical scenarios for the costs and performance of the notional TSO on its return on regulatory equity (RoRE) relative to our assumed baseline SONI performance. The use of RoRE as a metric for analysing upside and downside risk is well-established in UK price control regulation, and has been used in the past by Ofgem and Ofwat.
- 13.3 We used the following definition of RoRE:

RoRE = [Notional TSO profit after tax] / ([1 – notional gearing] * [TSO RAB])

- 13.4 We calculated RoRE for a notional TSO, based on estimates of notional TSO profit after tax. We derived estimates of profit by modelling the revenue allowances arising from our draft determinations proposals and deducting estimates of the costs of the notional TSO. Modelled revenue allowances include forecasts of revenue from our proposed allowance for asymmetric risk, but it does not include forecasts of revenue from our proposed margin on qualifying revenues.
- 13.5 Our baseline assumption is that, for costs subject to conditional cost-sharing incentives, the notional TSO would incur the same operating and capital expenditure as our ex ante price control allowances for the 2020-25 period. We also assumed in our baseline that the depreciation charges for the notional TSO in each year of the 2020-25 period, treated as a cost in the calculation of notional TSO profit, matched our estimated allowances for regulatory depreciation under our price control proposals (i.e. depreciation using price control rules on RAB additions and depreciation policy, and historical capex in line with the additions in the SONI RAB).
- 13.6 SONI's business plan data template had forecast no expenditure under the capital expenditure subject to caps (i.e. special projects) mechanism during the 2020-25 SONI price control. The price control framework allows SONI to request approval for expenditure through this mechanism during the 2020-25 period. We think SONI's forecast of zero is likely to be an underestimate of actual capital expenditure over the period. We note that, over the 2015-20 period, over 56% of SONI capital expenditure was funded through this mechanism. Separately, we note that SONI has proposed a fixed asymmetric risk allowance of £220,000/year in relation to costs subject to a cap, which at a risk remuneration rate of 3% implies forecast expenditure of £7.3m a year. However, we think that might be an overestimate. Our own forecasts are that the expenditure on special projects is likely to be approximately £0.2m a year, and we have used this forecast in our RoRE base case.



13.7 One area where our estimated costs for the notional TSO did deviate from our price control allowances concerns the costs incurred by the notional TSO for debt finance. Our proposed price control allowances for the cost of debt are on a CPIH-stripped basis, but we assume that the notional TSO would pay nominal interest rates on debt, rather than being financed by RPI-indexed or CPIH-indexed debt. We considered this to be a more realistic assumption for the purposes of modelling the notional TSO's liabilities.

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- 13.8 We assumed in our base case that the notional TSO would not receive any financial reward or penalty under the evaluative performance framework.
- 13.9 We set out a fuller list of our assumptions on the specification of the notional TSO in the table below, together with comments on the reasoning for each.

Aspect	Our assumption for notional TSO	Comment
Gearing	30% of RAB	See section 2
RAB	Our estimates of historical TSO RAB and central forecasts of RAB over 2020-25 period	See Appendix 7 for further explanation of our approach to the TSO RAB and RAB forecasts
Parent company guarantee	No PCG	See sections 2 and 10
Level of operating expenditure and capital expenditure incurred in relation to TSO cost categories subject to conditional cost-sharing approach	Central forecasts of notional TSO costs equal central forecast of ex ante expenditure allowances in respect of those costs No under- or over-spend	Central forecasts take account of the ex ante allowances proposed as part of our draft determinations (see Appendix 5) and high-level forecasts of additional ex ante allowances to be approved during the price control period
Level of expenditure subject	Central forecasts	
to remuneration up to approved cap approach	No spend in excess of approved cap	
Level of costs incurred by TSO on system support / ancillary services	Central forecasts based on forecasts provided by SONI	TSO assumed to be fully remunerated through pass- through arrangements
Value of TUoS and Moyle revenues falling under revenue collection role	Central forecasts based on forecasts provided by SONI	TSO assumed to be fully remunerated through pass- through arrangements
Pension deficit repair	Equal to our proposed allowances for pension deficit repair	See Appendix 5

Table 5: Specification of notional TSO: base case

Aspect	Our assumption for notional TSO	Comment
Interest costs on debt	Nominal interest rate applies on proportion of RAB assumed to be debt- financed under gearing assumption Interest rate calculated as our cost of debt allowance (CPIH-stripped) from section 10 plus forecast annual CPIH inflation of 2%	Reasonable assumption that notional TSO has no RPI- or CPIH-indexed debt
Effective rate of corporation tax paid by notional TSO	17% on modelled pre-tax profit	In line with our assumption used for main calculation of pre-tax WACC and in line with SONI business plan assumption
Financial incentive under new evaluative performance framework	Zero	Assumed zero for base case; we consider alternative outcomes as part of impact analysis
Expenditure found by the UR to be demonstrably inefficient and wasteful	Zero	Assumed expectation value of zero for notional TSO
Opening K factor position at 1 October 2020	Zero	Notional TSO assumed to have no over- or under- recovery of price control allowances at end of 2015- 20 price control period

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Risk scenarios

- 13.10 We considered the impact on the notional TSO RoRE of a number of downside and upside scenarios involving:
 - Scenarios where the notional TSO faces different levels of financial incentive rewards and penalties under our proposed evaluative performance framework.
 - Scenarios where the notional TSO over- or under-spends against its operating expenditure allowances.
 - Scenarios where the notional TSO over- or underspends against its capital expenditure allowances.
 - Scenarios where the notional TSO faces higher interest rates on its debt finance than we had assumed for the purposes of setting the overall WACC for the 2020-25 price control (after conversion from CPIH-stripped to nominal rates).
 - Scenarios where the notional TSO faces a disallowance against


transmission network preconstruction project expenditure already incurred.

- 13.11 Our proposed evaluative performance framework includes potential rewards or penalties for the notional TSO. The maximum reward under this framework in any one year is £1m, and similarly the maximum penalty in any one year is £1m. As set out above, we have considered scenarios that involve the notional TSO being subject to different levels of reward and penalty, including extreme ones where the maximum reward or penalty in any year is applied.
- 13.12 We considered scenarios where the notional TSO under- or overspends against its operating expenditure allowances. We have modelled scenarios that involve relatively extreme under- and overspends in each year of the price control period of 20% of allowances, and more moderate scenarios that involve under- and overspends in each year of 10% of allowances.
- 13.13 We have also considered scenarios where the notional TSO under- or overspends against its capital expenditure allowances. We have modelled scenarios that involve relatively high under- and overspends of 30% of allowances in year 1, and more moderate scenarios that involve under- and overspends of 15% of allowances, also in year 1.
- 13.14 While it is possible for the notional TSO to perform better or worse than our modelled range for under- or overspends against operating and capital expenditure allowances, we think our scenarios represent relatively extreme circumstances. The maximum reward and penalty under our proposed evaluative performance framework applies to under or over-spends against expenditure allowances as well as any incentive rewards or penalties. This means that the aggregate downside impact of any overspends and any penalties applied under other (non-cost) aspects of the performance evaluative framework cannot exceed the maximum penalty (and similarly for upside impacts).¹⁴
- 13.15 We note that SONI's own modelling of downside risk scenarios used a maximum downside scenario of £1.5m, which was consistent with SONI's proposed maximum penalty under the evaluative performance framework.
- 13.16 As part of its PR19 final determination, Ofwat considered the impact on water company RoRE of various upside and downside scenarios. In relation to over- and underspends against expenditure allowances, Ofwat analysed data on past performance by companies regulated by it since 2000. Ofwat's calculations showed that, since 2000, and excluding the 10% most extreme values at either end, water company performance lay between 12.49% underspend and 5.68% overspend.
- 13.17 We also consider scenarios where the notional TSO's borrowing costs are higher or lower than the cost of debt assumptions used to calculate the WACC applied to the notional TSO's RAB. We considered two scenarios each for downside and upside risks: a relatively extreme scenario where the cost of borrowing is higher/lower by

¹⁴ As an illustration of this point, the maximum penalty of £1m under our evaluative performance framework is approximately equivalent in RoRE terms to an over spend of 30% against our proposed operating expenditure allowances.



200 basis points, and a moderate scenario where the cost of borrowing is higher/lower by 100 basis points. SONI did not include consideration of downside risk scenarios relating to higher than assumed debt interests in its business plan submission. In its PR19 final determination, Ofwat considered a downside scenario of 25 basis points and an upside scenario of 100 basis points (for companies receiving a small company premium a range of 50 basis points on the downside and 75 basis points on the upside was considered).

- 13.18 We consider scenarios where the notional TSO faces a disallowance against transmission network preconstruction project (TNPP) expenditure that it has incurred above the agreed cap for that project. We think that such scenarios are extremely unlikely because SONI is able to request approval for changes to preconstruction project expenditure before any overspends are incurred and to take account of our decisions before it incurs any expenditure. Nevertheless, it is possible that the notional TSO faces a disallowance, and we have considered two scenarios: an extreme scenario of 5% overspend and subsequent disallowance and a lower but still relatively extreme scenario of 2.5% overspend and subsequent disallowance. The expenditure allowance framework for Special Projects is similar to that for TNPP, and therefore we consider that our downside scenario assumptions for TNPP adequately takes account of the combined downside risks from TNPP and Special Projects. We note that SONI's analysis of downside risk scenarios in its business plan did not explicitly include consideration of disallowances relating to TNPPs or Special Projects.¹⁵
- 13.19 For any of these scenarios it would be possible to conceive of different assumptions for the scale of impact (e.g. the scale of an over-spend on operating expenditure). For each area of risk, we defined two upside scenarios and two downside scenarios. We used judgement to identify scenarios that would provide useful insight.
- 13.20 We set out in the table below the specific scenarios we used.

Risk area	Scenarios considered	Comment
SONI performance on the performance evaluation incentive	Downside scenarios	Our proposed incentive penalty/reward cap is +/- £1m.
	£1m	For the purposes of our analysis,
	* Moderate incentive penalty of £0.5m	we have considered maximum upside and downside ranges, noting that the maximum includes any financial penalties/rewards
	Upside scenarios	relating to SONI's performance
	* Large incentive penalty of £1m	against expenditure allowances.
	* Moderate incentive	

Table 6: Upside and downside risk scenarios considered

¹⁵ SONI told us in a response to a subsequent UR clarification query (Ref: UR-2) that it had considered a downside risk scenario of 10% overspend and disallowance in relation to Special Projects (including TNPPs). SONI did not include RoRE impacts from this scenario its business plan submission.



	penalty of £0.5m	
SONI performance on operating expenditure	Downside scenarios * Large overspend of 20% of allowance * Moderate overspend of 10% of allowance Upside scenarios * Large underspend of 20% of allowance * Moderate underspend of 10% of allowance	We consider that the range of scenarios we have modelled represents relatively extreme outcomes on both the downside and upside. Under our proposed evaluative performance framework, the financial rewards/penalties on notional TSO's performance on operating expenditure are included within the overall reward/penalty cap. This means that the effective maximum overspend/underspend that the notional TSO is exposed to cannot exceed 26% (based on current opex forecasts).
SONI performance on capital expenditure	Downside scenarios: * Large overspend of 30% of allowance in year 1 * Moderate overspend of 15% of allowance in year 1 Upside scenarios: * Large underspend of 30% of allowance in year 1 * Moderate underspend of 15% of allowance in year 1 In all cases we assume that the financial incentives are applied in full to the over- or underspend	We think that our assumed range represents relatively extreme circumstances. As set out earlier, the maximum penalties/rewards under our evaluative performance framework includes financial penalties/rewards against expenditure allowances.
Out-turn debt interest rates for the notional TSO	Downside scenarios: * Interest rate higher by 2% * Interest rate higher by 1% Upside scenarios: * Interest rate lower by 2% * Interest rate lower by 1%	We think our scenarios represent relatively extreme circumstances. We note that our maximum downside scenario is significantly worse than that assumed by Ofwat in its PR19 determination. Moreover, we note that the notional TSO's debt is assumed to fall over the 2020-25 period. SONI did not include scenarios relating to higher interest rates in its business plan submission.
Disallowances on overspends against TNPP (or Special Projects) expenditure caps	Downside scenarios: * Extreme scenario of a disallowance on expenditure overspend of 5% of project caps in year 1 (with revenue impacts in year 3).	We think our scenarios represent relatively extreme circumstances. SONI did not reference downside scenarios relating to Special Projects or TNPP in its business plan submission and did not include estimates of its impact,

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	* Less extreme scenario of a disallowance on expenditure overspend of 2.5% of project caps in year 1 (with revenue impacts in year 3).	but it later told us that it had considered a downside scenario of 10% of project caps in developing its proposals for the incentive cap and collar.
Combined downside risk scenario	Combination of: * Large incentive penalty of £1m * Interest rate higher by 2% * Extreme scenario of a disallowance on expenditure overspend of 5% of project caps in year 1 (with revenue impacts in year 3).	Under our proposed approach a global cap of £1m applies to the performance evaluation incentive and conditional cost sharing.

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Estimates of RoRE impacts under risk scenarios

13.21 The table below sets out the results of our analysis of the RoRE of the notional TSO under downside scenarios as set out above. The results for the corresponding upside scenarios are symmetric so we do not reproduce them here.

Table 1: TSO RoRE impacts under downside scenarios relative to base case

	2020/21	2021/22	2022/23	2023/24	2024/25	Average 2020-25
Evaluative performance incentive						
£1m penalty	-2.84%	-2.79%	-2.92%	-3.60%	-5.23%	-3.48%
£0.5m penalty	-1.42%	-1.39%	-1.46%	-1.80%	-2.62%	-1.74%
Opex performance						
20% overspend	-1.92%	-1.94%	-2.14%	-2.80%	-3.74%	-2.51%
10% overspend	-0.96%	-0.97%	-1.07%	-1.40%	-1.87%	-1.25%
Capex performance						
30% overspend in Y1	-0.12%	-0.12%	-0.13%	-0.16%	-0.24%	-0.15%
15% overspend in Y1	-0.06%	-0.06%	0.06%	-0.08%	-0.12%	-0.08%
Debt interest						

2% higher	-0.71%	-0.71%	0.71%	0.71%	0.71%	0.71%
1% higher	-0.36%	-0.36%	-0.36%	-0.36%	-0.36%	-0.36%
TNPP/Special Projects						
5% disallow ance	-	-	-0.96%	-	-	N/A
2.5% disallow ance	-	-	-0.48%	-	-	N/A
Combined dow nside risk scenario	-3.55%	-3.50%	-4.59%	-4.31%	-5.94%	-5.14%

- 13.22 Note that the impacts across different scenario are not additive. In particular, the cap on total financial rewards/penalties under our evaluative performance framework applies to the combined effect of performance incentives as well as our conditional cost-sharing incentives (which cover operating and capital expenditure).
- 13.23 The impacts in the final year are calculated to be higher than for other years. This is because, on our forecasts, SONI's RAB would be lower at the end of the price control period and effects of the same scale in £m would have a higher percentage impact on RORE when the RAB is lower.

Comparison with RORE risk for regulated water companies

- 13.24 We compared our estimates of the RoRE impact of upside and downside risks for the notional TSO against the RoRE figures estimated by Ofwat for water companies in England and Wales as part of the PR19 Final Determinations. In particular, we looked at RoRE ranges for maximum upside and downside risk scenarios reported by Ofwat for the three listed companies regulated by Ofwat (Severn Trent, South West Water and United Utilities).¹⁶ These companies are particularly relevant because estimates of the equity beta for these companies derived from stock market data provide a key source of information on asset beta for other companies subject to RAB-based incentive regulation in the UK (including SONI).
- 13.25 For this exercise, we did not include the downside risk for the notional TSO from disallowances on overspends against TNPP or Special Projects expenditure caps. We consider that this specific downside risk is to be remunerated for separately through an asymmetric risk allowance (see section 14), rather than through the WACC*RAB remuneration channel. Excluding it from consideration in these charts enables more like-for-like comparisons between SONI and the water companies, which did not receive any asymmetric risk allowance.

¹⁶ Ofwat provided us with the data that was used for Chart 3.11 on Page 35 of its "Aligning Risk and Return" appendix to its PR19 Final Determinations (updated April 2020).



13.26 Figure 8 below shows that our estimated RoRE risk range for the notional TSO is similar to that reported by Ofwat for the listed companies.

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Figure 8: Comparison of estimated RORE risk for TSO and water companies

13.27 See section 7 for further discussion of the implications we have drawn from these comparisons, and some comments on the limitations on the comparisons made.

Findings from draft determination assessment

- 13.28 As we developed our draft determinations, we used our emerging RoRE analysis of upside and downside risk to help guide the design of financial incentives for the price control framework. In particular, we considered RoRE impacts for different options for the calibration of the evaluative performance framework, the incentive rate for the conditional cost-sharing incentives and the cap on maximum financial rewards and penalties. We also considered how RoRE impacts were affected by alternative gearing assumptions for the notional TSO, which we took into account in section 2 above.
- 13.29 The estimated RoRE impacts above reflect the design and calibration of financial incentives that we propose for our draft determinations, and our assumed capital structure for the notional TSO. In light of the analysis we have presented above, our view is as follows:
 - The financial incentives under the evaluative performance framework would provide significant and meaningful financial incentives for SONI, from the perspective of equity investors.



- Under our conditional cost-sharing incentives, the financial incentives on operating expenditure at a 25% incentive rate would provide significant and meaningful financial incentives for SONI, from the perspective of equity investors. While estimated RoRE impacts are much lower for capital expenditure than for operating expenditure, this reflects two factors: (i) the TSO's operating expenditure is estimated to be much higher than its capital expenditure, so a given proportionate impact would have a larger financial effect for operating expenditure; (ii) we assume that the RoRE impact for capital expenditure is spread over a number of years, since capital expenditure would be amortised for the calculation of SONI profit, so the impact in any one year would be less than for operating expenditure. We had no reason to doubt that the financial incentives on capital expenditure under our conditional cost-sharing incentives would not be significant or meaningful.
- The overall downside risk faced by the notional TSO does not seem excessive, or to present an undue threat to its longer-term financial viability. For instance, while equity investors would take a significant financial hit in the downside scenarios, they would still receive a positive return on regulatory equity in all but the most extreme downside scenarios. Furthermore, the RoRE downside risk we estimate for the notional TSO seems to be of similar scale to that estimated by Ofwat for listed water companies.





14. Adjustment to allowed return for asymmetric risk

14.1 In this section we review SONI's proposals for an upward adjustment to the allowed return for asymmetric risk that it considers adverse to its investors. We also consider potential sources of asymmetric risk from the proposed price control framework that we propose (which differs in some material ways from what SONI put forward in its business plan).

SONI proposals for an adjustment for asymmetric risk

- 14.2 SONI's business plan (page 12-7) referred to the CMA's final determination from the SONI appeal in 2017 which made an additional revenue allowance to remunerate SONI for what the CMA had found to be asymmetric risk in relation to specific SONI costs remunerated through the Dt or TNPP (transmission network preconstruction projects) price control arrangements.
- 14.3 SONI recognised that the CMA had acknowledged that the size of the adjustment for this risk was a matter of judgement. SONI said that because it is challenging to estimate probabilities and impacts on an ex ante basis, it had taken the CMA's judgement of 3% as the appropriate benchmark.
- 14.4 On that basis, SONI proposed an allowance of 3% applied to Dt and TNPP costs.
- 14.5 SONI's business plan did not clarify whether the allowance would be set by applying the 3% to a forecast of these costs (the approach taken by the CMA) or by applying 3% to outturn costs. Its business plan data submission included forecasts of £586,000 per year for Dt costs, £3.46m per year for TNPP costs and no expenditure on Special Projects for the 2020-25 period.

Review of SONI proposals

- 14.6 In line with the CMA's determination in the SONI appeal, our March 2019 regulatory approach decision recognised the case for adjustments to CAPM estimates for any asymmetric risk. SONI's proposal for an adjustment for asymmetric risk fits in principle within this approach. The key issues to consider in reviewing SONI's proposals are its assessment of the asymmetric risk that would arise under the 2020-25 SONI price control framework and the level of remuneration for that risk.
- 14.7 The Reckon working paper published alongside our approach consultation in December 2018 said that if equity investors are expected to face significant asymmetric risk, the approach to the remuneration of the equity capital of the notional TSO licensee should allow for an adjustment to the estimated cost of equity derived from CAPM analysis. We said that the assessment of asymmetric risk should take a broad and balanced view across the whole price control package.

"Our view is that what matters is the overall direction and significance of any asymmetry faced by notional equity investors in the TSO licensee. Any



assessment of asymmetry should take a broad and balanced view across the whole price control package.

Our proposed approach reflects a broader principle that the price control should be set in a way that aligns the ex ante expected returns to the (hypothetical) investors in the notional efficient TSO licensee under the price control, with the estimated costs (required returns) for that equity finance. This recognises that the expected returns to investors arise not just from the price control allowances for equity capital and debt finance (e.g. WACC*RAB) but are also affected by other factors, such as: (a) expectations of any net overor under-spend against ex ante cost allowances that investors are financially exposed to; and (b) expectations of any net out-performance or underperformance against any financial incentive arrangements relating to service quality, outputs or other aspects of performance."

- 14.8 Our view is that SONI's business plan proposals on asymmetric risk suffer from an unduly narrow focus on some specific sources of asymmetric risk, without taking a broad and balanced view across the whole price control package.
- 14.9 A key element of SONI's business plan is a new benefits-sharing incentive framework in which SONI would face, each year, a maximum financial downside of a £1.5m penalty and a maximum financial upside of a £3.0m reward. This seems highly asymmetric to the benefit of SONI. But SONI's business plan fails to make any mention of this incentive arrangement in presenting proposals on asymmetric risk. This is a major oversight in the context of SONI's business plan, which calls into question SONI's desire to provide value for money through its business plan proposals.
- 14.10 Nonetheless, for the purposes of determining an allowance for asymmetric risk for our draft determinations, what matters most is the nature of risk in our proposed price control framework, which differs in some important ways from the arrangements proposed in SONI's business plan.

Further consideration of potential sources of asymmetric risk

- 14.11 In terms of potential sources of asymmetric risk, under the proposed price control framework for the 2020-25 period, we considered the following:
 - For those costs that are to be subject to remuneration up to approved caps (e.g. transmission network planning costs) we do not propose to dispute the CMA position that there is asymmetric risk to the detriment of SONI.
 - For those costs that are subject to what we have called conditional costsharing incentives (see our Annex 5, Cost remuneration and managing uncertainty) we did not identify good grounds to expect significant asymmetric risk in either direction. The ex ante baselines are intended to



represent central estimates of efficient costs. In contrast to conventional cost-sharing incentives, these arrangements would require SONI to provide evidence to the UR to demonstrate that it should earn financial rewards in the case of under-spend, but the UR would be expected to behave reasonably in its assessment of that evidence. Furthermore, in contrast to conventional cost-sharing incentives, these arrangements would provide an opportunity for SONI to be fully remunerated, rather than facing a financial penalty, in cases where it can show that an over-spend was due to the efficient costs of justified improvements in performance relative to desired outcomes.

- For the evaluative performance framework, we propose that the financial incentive structure be symmetric, with a maximum annual downside penalty of £1m and a maximum upside reward of £1m.
- There seems to be a significant asymmetry in SONI's favour arising from the existence of the CMA appeal process. Setting price controls involves a considerable amount of estimation and judgement in a context of imperfect information and a need for proportionality in resource allocation. The CMA appeal process provides an opportunity for our final determinations to be reviewed in greater detail and for errors found by the CMA to be remedied. However, it seems more likely that the CMA process would be used to address errors that give SONI too little money than errors that give SONI too much money. This is because of the greater likelihood of SONI, as opposed to customers, customer representatives or suppliers, triggering a CMA appeal of the SONI price control. This in turn reflects both the legal basis for appeals and the relative scale of expected costs and benefits to different parties from an appeal.
- 14.12 In terms of the adjustment for costs subject to remuneration up to approved caps, if these are taken in isolation, SONI's proposal for the percentage rate to apply to the relevant costs is in line with the CMA's adjustment (3%).

Draft determination on asymmetric risk

- 14.13 We do not propose to intervene on SONI's proposal for a 3% adjustment, in SONI's favour, for asymmetric risk in respect of costs subject to remuneration up to approved caps (e.g. transmission network planning costs).
- 14.14 We propose that, as for the CMA remedies, the adjustment is applied to exante forecasts of qualifying costs, rather than to SONI's actual spend during the price control period. SONI could have perverse incentives to incur costs unnecessarily (at least up to approved caps) if it is entitled to a return of WACC plus 3% for every £1 that it spends.
- 14.15 Our central forecast of annual expenditure subject to remuneration up to approved caps is £4.4m. SONI's business plan had forecast zero expenditure on special projects, but we think this is likely to be an underestimate. We have replaced SONI's forecasts for special projects with our own central forecasts. We propose to





include an asymmetric risk allowance of £132,000 a year, which is 3% of our forecast of eligible annual expenditure.

14.16 We do not propose any other adjustments for asymmetric risk. Leaving aside the costs to be subject to remuneration up to approved caps, the high-level review above suggests that the remainder of the framework is, if anything, asymmetric to the benefit of SONI. However, without significant further analysis it would be difficult to determine an appropriate adjustment for this asymmetry and doing so was not a priority for our draft determinations.





15. WACC build-up and sensitivity analysis

15.1 In this final section, we bring together the different components of the pre-tax WACC to show how the overall WACC we propose for draft determinations is calculated. We also show some sensitivity analysis for certain WACC parameters.

WACC build-up for draft determinations

15.2 We set out our calculation of the pre-tax WACC in the table below.

 Table 8: Summary of WACC build-up for draft determinations (all figures on CPIH-stripped basis, post governance changes

Element of pre-tax WACC for notional TSO	Proposed value for DD	Comment
1. Notional gearing assumption	30%	Assumption / estimate
2. Total market return	6.50%	Assumption / estimate
3. Risk-free rate (CPIH-stripped)	-0.60%	Assumption / estimate
4. Equity risk premium	7.10%	= (2) – (3)
5. Asset beta	0.50	Assumption / estimate
6. Debt beta	0.125	Assumption / estimate
7. Equity beta	0.66	= [(5) – [(1) * (6)]] / [1 – (1)]
8. Post-tax cost of equity	4.09%	= (3) + (4) * (7)
9. Corporation tax rate	17%	Assumption / estimate Subject to uncertainty mechanism
10 Pre-tax cost of equity	4.93%	= (8) / [1 – (9)]
11. Cost of debt: benchmark rate	1.14%	Assumption / estimate
12. Cost of debt: small company	0.00%	Assumption / estimate
premium		Potential increase in the future subject to governance changes
13. Cost of debt: issuance and arrangement costs	0.00%	Assumption / estimate
14. Overall cost of debt	1.14%	= (11) + (12) + (13)
15. Vanilla WACC	3.21%	= (1) * (14) + [1 - (1)] * (8)
16. Pre-tax WACC	3.79%	= (1) * (14) + [1 – (1)] * (10)

15.3 As indicated in the table above, these figures for the pre-tax WACC are made under an assumption of a statutory corporation tax rate of 17% during the price control period. We are proposing an uncertainty mechanism to adjust the pre-tax WACC used to calculate the TSO revenue control according to the applicable rate of



corporation tax, so what matters for SONI's revenue allowances would be the applicable statutory corporation tax rate, rather than the assumption we make in our draft or final determinations. Our assumption is consistent with SONI's assumption of 17% from its business plan, which allows for a direction comparison with SONI's proposed pre-tax WACC. However, government policy on corporation tax has changed and the planned reduction from 19% to 17% has not been implemented. If we assumed 19% rather than 17% for the corporation tax rate, the pre-tax WACC would be 3.88%.

- 15.4 As shown above, we provide point estimates, which are intended to be central estimates, for each parameter and calculate the pre-tax WACC to allow in our draft determinations on the basis of these point estimates.
- 15.5 We decided against an approach of presenting our draft determinations for WACC in the form of ranges for each parameter, calculating an overall implied range for WACC from these ranges, and then deciding what value of WACC from within that range to use.
- 15.6 One difficulty of such an approach is that of knowing what the upper and lower figures are intended to represent conceptually. Are they maximum/minimum plausible figures? Are they maximum/minimum reasonable figures? Are they intended to lie within a defined statistical confidence interval (e.g. P90/P10 figures)? There may be some theoretical merit in using a range for parameters feeding into WACC if we had good evidence to determine a consistent and well-specified lower value and upper value for each parameter; but we did not have such evidence and the upper and lower values could represent somewhat arbitrary and inconsistent departures from the central estimate.
- 15.7 We were also concerned that a focus on ranges for each parameter could risk losing sight of the balance of evidence for choosing specific values within the range, and push our judgement towards the middle of the available estimates for each parameter even if the weight of evidence pointed to a different figure.
- 15.8 There may be a role for ranges in some other circumstances. For instance:
 - Where the task is to review the reasonableness of a WACC figure made by another party (e.g. the CMA reviewing whether a WACC determined by a sector regulator was within a reasonable range) rather than to make a fresh assessment of WACC, there may be more merit in a range.
 - Where there is a reason to choose a WACC that is higher than the central estimate (e.g. "aiming up" arguments, or as an alternative means to adjust for asymmetric risk) there may be more merit in a range.
- 15.9 As things stand, we did not consider that either of these applied and, more widely, we did not identify a good basis for presenting our WACC build-up through ranges for each parameter.
- 15.10 Although we have not presented ranges, we have recognised throughout our assessment that there is substantial uncertainty, and limitations in the available



evidence. Ultimately our draft determination on the pre-tax WACC for SONI represents a judgement on the best estimate in light of the available evidence and within the wider context of the SONI price control review. Furthermore, we carried out targeted sensitivity analysis for our calculation of the pre-tax WACC, as explained in the sub-section below.

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Targeted sensitivity analysis for WACC parameters

- 15.11 We carried out some targeted sensitivity analysis to help better understand how alternative assumptions of estimates for certain parameters (taking all other parameters as given) would affect the calculation of the pre-tax WACC. We present summary results in Table below. We focused our analysis in areas that seemed most relevant (e.g. some key areas where we took a different position to SONI's proposals, or some areas where our parameters differed from recent regulatory precedent such as CMA NERL).
- 15.12 We summarise the main results from our sensitivity analysis in Table 9. For the estimated impacts in £m, we assumed a forecast average RAB of £34m over the price control period (impacts in any years may differ according to the RAB value).

Element of pre-tax WACC	Alternative parameter(s) considered	Impact on pre-tax WACC and allowed return (holding other parameters constant)
Notional gearing	55% (SONI proposal)	+20 basis points +£67k per year
Risk-free rate	–1.25% (implied by CMA NERL assumption)	-19 basis points -£63k per year
Asset beta for the notional TSO	0.40 (implied by lower bound of CMA Bristol Water adjustment)	-86 basis points -£290k per year
	0.57 (SONI proposal)	+60 basis points +£203k per year
Debt beta for the notional TSO	0.05 (CMA NERL assumption)	+19 basis points +£65k per year
	0.15 (SONI proposal)	-6 basis points -£22k per year
Cost of debt: issuance and arrangement costs	0.15% (CMA NERL assumption)	+5 basis points +£15k per year
	0.6% (SONI proposal)	+18 basis points +£61k per year

Table 9: Targeted sensitivity analysis

15.13 This analysis helps to show which parameters are more influential on the calculated



pre-tax WACC, and those that have a less material influence. For instance, we can see that the alterative figures for the SONI asset beta have the greatest influence on the pre-tax WACC. In line with this observation, the assessment of the SONI asset beta was an issue that we explored in more depth in this appendix and we considered a number of different sources of evidence.

- 15.14 We can see that the impact of changing the notional gearing assumption from 30% to 55% is to increase the pre-tax WACC by about 20 basis points. At first sight, this might seem a surprising result, in terms of the scale of the change and its direction (higher gearing might be expected to decrease pre-tax WACC). However, as we discuss in more detail in the final sub-section below, given the way that the pre-tax WACC is calculated we did not consider that this raised concerns for our draft determinations.
- 15.15 The alternative figures for the debt beta have a relatively small impact.
- 15.16 To help put the estimated impacts in £k into context, we estimate that the average allowed return on RAB at our pre-tax WACC, after governance changes, would be £1.28m per year (based on forecast average RAB of £34m in April 2019 CPIH terms).
- 15.17 For some of the lower-impact areas, we can see that the amount of money at stake is relatively small. In this context, there is a real need for proportionality in the depth and complexity of analysis that is directed at these parameters (e.g. further to review of recent regulatory precedent), especially given the existence of challenging and important matters for the 2020-25 SONI price control review, both in relation to WACC (e.g. SONI asset beta) and the wider price control framework (e.g. new performance incentive framework).

Further discussion of sensitivity to notional gearing

- 15.18 As indicated above, our sensitivity analysis shows that, leaving all else equal, increasing the notional gearing assumption from 30% to 55% increases the pre-tax WACC by about 20 basis points.
- 15.19 We are aware that the CMA in its NERL provisional findings reported that its estimated WACC for NERL increased with the notional gearing assumption, and said that this was unexpected. The CMA referred to Modigliani-Miller theorems, which it said "describe a scenario under which the cost of capital is independent of (and therefore broadly constant with) gearing".¹⁷ The CMA discussed this issue further in an appendix to its provisional findings.
- 15.20 We did not seek to explore the specific situation that the CMA had found for its assessment of NERL's cost of capital. But the CMA's comments on this matter led us to consider in further detail the impacts of our notional gearing assumption on the estimated WACC for SONI.

¹⁷ Paragraph 12-105 of CMA (2020) NATS (En Route) PLC/CAA regulatory appeal – Provisional findings report



15.21 In the specific case of our analysis and estimates for SONI, we did not consider that the results from our sensitivity analysis for the gearing assumption indicated any problem, or that they should be treated as unexpected.

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- 15.22 A key point to highlight is that under our approach, and in line with broader UK regulatory precedent, our overall WACC is a combination of (i) an estimate of the cost of equity on a forward-looking basis and (b) an estimate of the cost of debt which is backward-looking. The cost of equity estimate is intended to reflect market conditions in the 2020-25 price control period. The cost of debt estimate reflects, in large part, the costs of debt raised in historical periods when interest rates were higher (we have used a benchmark proposed by SONI which reflects a five-year trailing average of the yields on 10-15-year corporate bonds). In line with wider UK regulatory precedent, we have taken into account the concept of embedded debt, which means that we make allowance in the allowed WACC for the 2020-25 price control period for the estimated costs arising in this period from debt raised in the past, at historical interest rates.
- 15.23 Given that our estimated WACC is calculated in this way, we do not see a basis for having a strong theoretical expectation that the estimated WACC will be independent of the gearing assumption. We do not think that the economic rationale for the Modigliani-Miller theorem necessarily applies in a case where the cost of debt element of WACC largely reflects the costs of embedded debt at historical interest rates, while the cost of equity elements reflects expected future market conditions.
- 15.24 To explore this issue further, we carried out our sensitivity analysis again, using an alternative scenario involving a different figure for the cost of debt. Specifically, we assumed in this scenario that the cost of debt benchmark rate in the WACC build-up above was 0.3%, which is approximately equal to the cost of new debt estimated by the CMA in its NERL provisional determination (converted from RPI-stripped to CPIH-stripped basis). We found that, in this scenario, there was a very small impact on the calculation of both the pre-tax WACC and vanilla WACC from moving from 30% gearing to 55% gearing.
- 15.25 In any event, our pre-tax WACC is an estimate which involves imperfect information and approximations, and we would not consider it realistic to expect it to behave entirely in line with specific theoretical models.