
Financeability of the RIO-ED2 Draft Determinations

Prepared for Scottish Electric Power Distribution plc and Southern Electric Power Distribution plc

25 August 2022

www.oxera.com

Contents

Executive summary	1
Ofgem's own analysis indicates that SSES and SSEH are not financeable	2
Ofgem makes questionable assumptions about efficient company performance	5
To ensure that the networks are financeable, Ofgem must correct issues 'at source' where possible, and 'aim up' on the cost of equity	7
1 Introduction	10
2 Purpose and principles of the financeability test	11
2.1 Financeability needs to be assessed against appropriate target rating and credit ratio benchmarks	11
2.2 The notional company should be robustly defined	15
2.3 Implications for RIIO-2 financeability assessment	15
3 Ofgem's approach to debt financeability	16
3.1 Ofgem's approach to the target credit rating and credit ratio thresholds allows Ofgem to misinterpret its results	16
3.2 Ofgem's definitions of credit ratios	17
3.3 Ofgem's definition of the SSES and SSEH notional companies inflates the level of financeability	18
4 Ofgem's own analysis indicates that SSES and SSEH are not financeable	20
4.1 The average levels of AICR are below the minimum threshold required for the company to be rated at Baa1	20
4.2 FFO/net debt ratios and an overall simulated credit rating show sharp deterioration over the price control period despite equity injection	21
4.3 Ofgem relies on high levels of equity injection and negative implied dividend yields to sustain debt financeability, which implies a negative effective dividend yield	24
4.4 If investors do not accept the negative implied dividend yield and do not inject new equity, financeability deteriorates sharply	26
4.5 Conclusion on Ofgem's own analysis	28

Oxera Consulting LLP is a limited liability partnership registered in England no. OC392464, registered office: Park Central, 40/41 Park End Street, Oxford OX1 1JD, UK; in Belgium, no. 0651 990 151, branch office: Avenue Louise 81, 1050 Brussels, Belgium; and in Italy, REA no. RM - 1530473, branch office: Via delle Quattro Fontane 15, 00184 Rome, Italy. Oxera Consulting (France) LLP, a French branch, registered office: 60 Avenue Charles de Gaulle, CS 60016, 92573 Neuilly-sur-Seine, France and registered in Nanterre, RCS no. 844 900 407 00025. Oxera Consulting (Netherlands) LLP, a Dutch branch, registered office: Strawinskylaan 3051, 1077 ZX Amsterdam, The Netherlands and registered in Amsterdam, KvK no. 72446218. Oxera Consulting GmbH is registered in Germany, no. HRB 148781 B (Local Court of Charlottenburg), registered office: Rahel-Hirsch-Straße 10, Berlin 10557, Germany.

Although every effort has been made to ensure the accuracy of the material and the integrity of the analysis presented herein, Oxera accepts no liability for any actions taken on the basis of its contents.

No Oxera entity is either authorised or regulated by any Financial Authority or Regulation within any of the countries within which it operates or provides services. Anyone considering a specific investment should consult their own broker or other investment adviser. Oxera accepts no liability for any specific investment decision, which must be at the investor's own risk.

© Oxera 2022. All rights reserved. Except for the quotation of short passages for the purposes of criticism or review, no part may be used or reproduced without permission.

5	Ofgem's definition of the notional company erroneously enhances credit metrics	30
5.1	An error in the financeability assessment approach	32
5.2	Errors in the price control parameters	35
5.3	Most likely UMs scenario	43
5.4	Summary of the review of Ofgem's assumptions behind its definition of the notional company	45
6	Addressing Ofgem's material errors and increasing the cost of equity allowance is required to ensure that the SSES and SSEH notional companies are financeable	49
7	Conclusions	54

Boxes, figures and tables

Gearing profile for SSEH and SSES without in-period equity injections, under Ofgem base case TOTEX scenario	3	
Gearing profile for SSEH and SSES without in-period equity injections, under Ofgem high case TOTEX scenario	4	
Comparison of Ofgem base case TOTEX scenario with and without equity contributions for SSES and SSEH (including the 5% equity issuance threshold)	4	
Comparison of Ofgem high case TOTEX scenario with and without equity contributions for SSES and SSEH (including the 5% equity issuance threshold)	5	
Comparison between the AICR level in the Ofgem base case TOTEX scenario and after applying Oxera corrections for SSES and SSEH	7	
The impact of the required increase to the cost of equity allowance for SSES	8	
The impact of the required increase in the cost of equity allowance for SSEH	9	
Table 2.1	Moody's rating methodology for regulated energy networks	13
Table 2.2	Indicative ranges by credit rating agencies for sub-ratings and credit ratings	14
Table 3.1	Credit ratio definitions in Ofgem's PCFM	18
Table 3.2	Assumptions underpinning Ofgem's assessment of the financeability of the SSES and SSEH notional companies	19
Table 4.1	Ofgem assessment of AICR and FFO/net debt ratios for SSES and SSEH under the base case TOTEX and high case TOTEX scenarios	21
Figure 4.1	FFO/net debt during each year of ED2 for SSES and SSEH under the base case TOTEX scenario	22
Figure 4.2	FFO/net debt during each year of ED2 for SSES and SSEH under the high case TOTEX scenario	22
Table 4.2	Annual credit ratios for SSES and SSEH under Ofgem base case TOTEX scenario	23

Table 4.3	Annual credit ratios for SSES and SSEH under Ofgem high case TOTEX scenario	24
Table 4.4	Required equity issuance for SSES and SSEH, in Ofgem base case TOTEX and high case TOTEX scenarios (£m)	25
Table 4.5	Implied dividend yield for SSES and SSEH in Ofgem base case TOTEX and high case TOTEX scenarios	25
Figure 4.3	Gearing profile for SSEH and SSES without in-period equity injections, under the Ofgem base case TOTEX scenario	26
Figure 4.4	Gearing profile for SSEH and SSES without in-period equity injections, under the Ofgem high case TOTEX scenario	27
Table 4.6	Ofgem base case TOTEX scenario with and without equity contributions for SSES and SSEH (with the 5% equity issuance threshold)	27
Table 4.7	Ofgem high case TOTEX scenario with and without equity contributions for SSES and SSEH (with the 5% equity issuance threshold)	28
Table 5.1	Assumptions underpinning Oxera's financeability assessment, correcting for Ofgem's unjustified definition of the SSES and SSEH notional companies	31
Table 5.2	The isolated effect of updating the cut-off date for the risk-free rate and the cost of debt allowance on Ofgem's assessment of the SSES and SSEH financeability	32
Figure 5.1	Energy networks' index-linked debt proportions in 2017/18	34
Table 5.3	The isolated effect of applying an appropriate assumption on the proportion of index-linked debt on the SSES and SSEH financeability	35
Table 5.4	Reductions to the submitted TOTEX (£m)	36
Table 5.5	The isolated effect of increasing the actual TOTEX, to the business plan level, and accounting for the expenditure proposed under bespoke UMs on Ofgem assessment of the SSES and SSEH financeability	37
Table 5.6	Common ODI-Fs in RIIO-ED2	38
Table 5.7	The isolated effect of using midpoint ODI payments on Ofgem assessment of the SSES and SSEH financeability	38
Figure 5.2	Opening ED2 RAV based on Ofgem's Draft Determinations PCFM (£m)	40
Figure 5.3	10-year nominal gilts forward curve in the base-case, high and low interest-rate scenarios	41
Table 5.8	Comparison of the average allowed and notional cost of debt over the ED2 price control period	42
Table 5.9	The isolated effect of correctly modelling the notional cost of debt (including the infrequent issuer premium) instead of using the allowed cost of debt assumption on Ofgem assessment of the SSES and SSEH financeability	42
Table 5.3	The isolated effect of including SSE's view on the common UMs TOTEX on Ofgem's assessment of the SSES and SSEH financeability	45
Figure 5.4	AICR with cumulative assumption corrections for the notional SSES	46

Figure 5.5	AICR with cumulative assumption corrections for the notional SSEH	47
Figure 5.6	FFO/net debt with cumulative assumption corrections for the notional SSES	47
Figure 5.7	FFO/net debt with cumulative assumption corrections for the notional SSEH	48
Table 5.10	Impact of applying all appropriate assumptions on the SSES and SSEH notional companies' financeability	48
Table 6.1	Comparison of Moody's Baa1 thresholds for gearing and AICR with the levels targeted by Ofgem	50
Figure 6.1	The impact of the required increase to the cost of equity allowance SSES' AICR	52
Figure 6.2	The impact of the required increase in the cost of equity allowance on SSEH's AICR	52
Table 6.2	Annual financeability ratios for SSES and SSEH under an increased cost of equity scenario	53

Executive summary

Economic regulators consider a range of factors when assessing whether the price control packages that they propose are appropriate. One such assessment is the financeability test, which considers the capacity of the regulated business to finance its operations and investments under the terms of its proposed settlement. There are two aspects of financeability that are generally considered by regulators:¹

- allowing an efficient, well-run company to earn a rate of return that is commensurate with the cost of capital;
- providing sufficient revenues to enable an efficient, well-run company to raise finance from capital markets readily and on ‘reasonable’ terms.

A key part of the assessment is whether a notionally efficient company would be able to maintain a solid investment-grade credit rating (usually Baa1). Regulators assess this by modelling credit ratios through a price control financial model (PCFM), while combining this analysis with their views of how credit rating agencies might assess other factors that determine creditworthiness (e.g. the stability and predictability of the regulatory regime). For this analysis to be informative, **regulators should use the same credit ratio definitions as used by credit rating agencies.**

In addition, reaching the minimum thresholds required to maintain an investment-grade credit rating is a necessary, but not sufficient, condition for being financeable. **Credit ratio analysis alone cannot provide evidence that the cost of equity has been set at an appropriate level.** Equity financeability must therefore also be considered. If the analysis reveals that investors would not be remunerated sufficiently for the risks that they are expected to bear, it is incumbent on regulators to modify the proposed settlement in ways that address this.²

It is also important for regulators to provide robust evidence to support their views of the notionally efficient company, for instance through the use of industry benchmarks. More specifically, their views of the notional company structure should be ‘exogenously determined’, without considering the impact that the assumed structure might have on the outcome of the financeability assessment. Failing to use an exogenously determined structure risks compromising the integrity of the analysis.

Scottish and Southern Electricity Networks (SSE) has asked Oxera Consulting LLP (Oxera) to review the financeability assessment undertaken by Ofgem as part of its RIIO-ED2 Draft Determinations.³ According to Ofgem’s analysis, the two electricity distribution networks that SSE operates, SSES and SSEH, are financeable on the basis of the notional capital structure and taking account of the allowed costs and allowed returns. We now summarise our key observations regarding this analysis.

¹ See, for example, Ofgem (2010), ‘Regulating Energy Networks for the Future: RPI-X@20: Emerging Thinking – Embedding financeability in a new regulatory framework’, 20 January, para. 3.1.

² One example was the case of the NATS En Route Ltd (2020) redetermination. The CMA concluded that the return on equity had been set too low despite the company exceeding the thresholds in the Civil Aviation Authority’s (CAA’s) analysis. See: Competition and Markets Authority (2020), ‘NATS (En Route) Plc / CAA Regulatory Appeal: Final report’, 23 July.

³ Ofgem (2022), [‘RIIO-ED2 Draft Determinations—Finance Annex’](#), section 5.

Ofgem's own analysis indicates that SSEH and SSES are not financeable

Ofgem's financeability assessment shows that, under its base case TOTEX scenario,⁴ over the five years of RIIO-ED2, SSEH has an average AICR of 1.39x and SSES has an average AICR of 1.40x. Ofgem uses this as evidence that, under its proposed settlements, both networks are able to achieve an investment-grade credit rating of Baa1. This is despite the fact that Moody's minimum AICR threshold for a Baa1 credit rating is 1.40x.

Importantly, **Ofgem's analysis reveals a progressive deterioration in financeability for both networks over time**. For example, SSEH's simulated rating falls to Baa2 in the fourth year of the ED2 period. This can also be seen when examining the individual ratios on an annual basis as opposed to using averages over the ED2 period: FFO/net debt and RCF/net debt both decline for both distribution network operators (DNOs) over the five years.⁵ The impact for SSEH is so significant that FFO/net debt actually falls below the Baa sub-rating level by the third year of ED2 and stays there for the remainder of the period.

These effects are even more pronounced under Ofgem's high case TOTEX scenario. This scenario assumes that companies incur extra costs to deliver higher volumes than in the base case TOTEX scenario, with the funding ultimately recouped through uncertainty mechanisms. Under the high case TOTEX scenario, both SSE companies' simulated rating is below Baa1 by the fourth year of the period. This result is important because, as we explain below, it is reasonable to expect that companies will need to deliver higher volumes than those assumed under the base case TOTEX scenario.

In addition, **Ofgem's conclusions rely on questionable assumptions about investors' willingness to make large equity injections**. More specifically, Ofgem assumes that companies will issue equity in order to maintain gearing at around 60% over the period. This includes equity issued to de-gear to 60% at the start of the period, along with additional equity issuance to maintain this level of gearing throughout ED2 (allowing a ±5% deviation from the target level).

However, **Ofgem fails to report the amount of equity issuance required to maintain this level of gearing**.

To help provide a more transparent assessment of equity financeability under Ofgem's assumptions, our analysis demonstrates that the total equity issuance required to maintain a notional dividend yield of 3% and gearing at 60% (based on the 65% maximum gearing threshold) is around:

- £224m and £156m for SSEH and SSES respectively (under Ofgem base case TOTEX scenario); or
- £326m and £368m for SSEH and SSES respectively (under Ofgem high case TOTEX scenario).

These equity injections mean that implied dividend yields are significantly below 3% for both DNOs. More surprisingly, **implied dividend yields are actually negative** for SSEH over the ED2 period (-2.71%, under the base case TOTEX scenario), and are negative for both SSEH and SSES under the

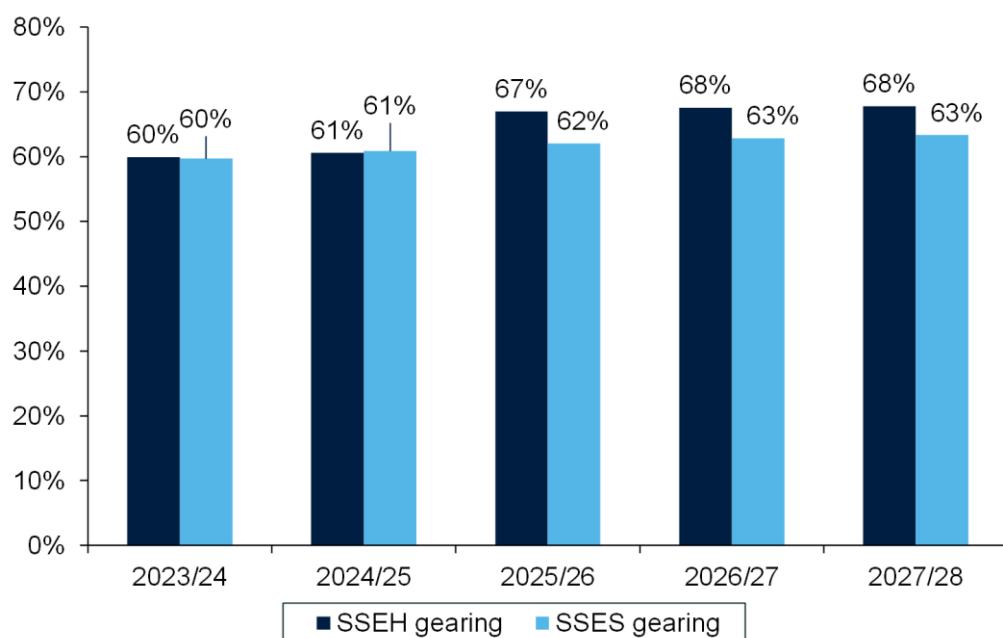
⁴ The base case TOTEX scenario is the main scenario which Ofgem uses to inform its financeability assessment.

⁵ In contrast, SSEH and SSES's AICR remains roughly stable over the period. However, as we explain later, this is due to questionable assumptions that Ofgem makes about equity injections.

high case TOTEX scenario (at -4.75% and -1.23%, respectively). It is unlikely that in reality investors would be willing to accept such a low implied dividend yield.

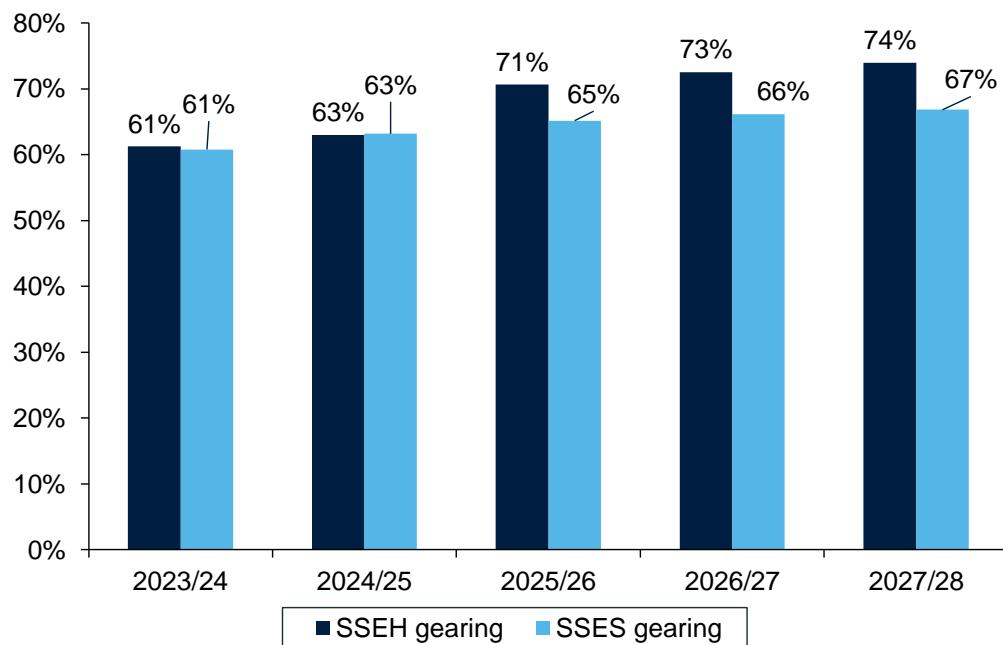
Ofgem's analysis also ignores what the impact on gearing and financeability would be if this equity were not issued. If we assume that investors will not be willing to inject equity to keep gearing below 65%, the gearing level for both companies increases significantly. This is particularly relevant for SSEH, where the level of gearing rapidly approaches c. 70% in the base case TOTEX scenario and reaches 74% in the high case TOTEX scenario. SSES reaches 67% gearing by the end of ED2 in the high case TOTEX scenario. This is summarised in the figures below.

Gearing profile for SSEH and SSES without in-period equity injections, under Ofgem base case TOTEX scenario



Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

Gearing profile for SSEH and SSES without in-period equity injections, under Ofgem high case TOTEX scenario



Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

The tables below show what happens to the key credit ratios if investors are unwilling to inject equity to maintain gearing at the levels assumed by Ofgem. The first table shows that, under the base case TOTEX scenario, SSEH experiences a decline in the average AICR over the five years of RIO-ED2 from 1.40x to 1.34x, resulting in a drop in the overall company credit rating from Baa1 to Baa2 on average over the price control period. The second table then shows how, under the high case TOTEX scenario, both SSES and SSEH have average credit ratings at Baa2.

Comparison of Ofgem base case TOTEX scenario with and without equity contributions for SSES and SSEH (including the 5% equity issuance threshold)

Ratios	SSES		SSEH	
	Ofgem base case TOTEX scenario	Ofgem base case TOTEX scenario (no equity injections)	Ofgem base case TOTEX scenario	Ofgem base case TOTEX scenario (no equity injections)
Net debt/RAV			61.8%	64.6%
AICR (x)			1.40	1.34
Nominal PMICR (x)			2.15	2.06
FFO/net debt	Unchanged, as no equity injections are assumed in the Ofgem base case TOTEX scenario for SSES		11.5%	10.9%
RCF/net debt			9.5%	9.0%
RoRE			4.8%	4.6%
Equity issuance (£m) ¹			148	–
Simulated credit rating			Baa1	Baa2

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

Comparison of Ofgem high case TOTEX scenario with and without equity contributions for SSES and SSEH (including the 5% equity issuance threshold)

Ratios	SSES		SSEH	
	Ofgem high case TOTEX scenario	Ofgem high case TOTEX scenario (no equity injections)	Ofgem high case TOTEX scenario	Ofgem high case TOTEX scenario (no equity injections)
Net debt/RAV	62.4%	64.4%	64.3%	68.3%
AICR (x)	1.38	1.34	1.36	1.28
Nominal PMICR (x)	2.13	2.06	2.10	1.99
FFO/net debt	11.1%	10.7%	10.2%	9.6%
RCF/net debt	9.2%	8.8%	8.4%	7.8%
RORE	4.7%	4.6%	4.7%	4.4%
Required equity issuance (£m) ¹	212	–	250	–
Simulated credit rating	Baa2	Baa2	Baa2	Baa2

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

This shows how **Ofgem's conclusion that SSES and SSEH are financeable is premised on the idea that large equity injections will sustain the networks' credit ratios**. It is important to emphasise that this is the case under Ofgem's own analysis, even before considering whether the terms of the proposed price controls and the approach to financeability analysis (e.g. regarding proposed TOTEX allowances, allowances for the cost of debt, or definition of the notional capital structure) are appropriate.

Ofgem makes questionable assumptions about efficient company performance

In addition to mis-interpreting its own analysis, Ofgem makes some assumptions that are not justified on the basis of the best available evidence. These include assumptions relating to the financeability assessment methodology. Other problematic assumptions include those relating to the most likely efficient performance outcomes, and the assumptions relating to the most likely UM scenarios for the networks over the ED2 period.

Adjusting these errors in the analysis demonstrates how Ofgem's proposed price controls expose SSES and SSEH to significant downside skew, and more generally reduce the networks' financeability even further than was assessed by Ofgem. We highlight these errors below, and indicate how we have corrected these in our analysis.

The key error regarding Ofgem's financeability assessment methodology relates to the proportion of the index-linked debt.

- **Ofgem uses an unrealistic assumption for the proportion of index-linked debt.** Ofgem's 25% assumption cannot be justified on the basis of sector evidence. We therefore correct for this in our analysis, by using a better-evidenced and realistic assumption of 10%.

The errors relating to Ofgem's assessment of the most likely efficient performance outcomes include the following.

- **Ofgem appears to have underfunded companies for ED2.** There are a number of material issues with Ofgem's approach to cost assessment,⁶ which presents a significant risk that both SSES and SSEH are underfunded for the efficient level of costs. We have rectified this in our analysis by using SSE's adjusted business plan TOTEX figures. This is also exacerbated by Ofgem rejecting SSE's proposal for bespoke uncertainty mechanisms.
- **Ofgem's assumptions regarding ODI performance are not appropriate.** Ofgem assumes that the efficient notional company will not receive any rewards or pay any penalties over ED2. However, this is inappropriate, since there is significant downside skew embedded within its proposed ODI-F package. We correct for this in our analysis, by assuming that the notional company will achieve a midpoint of the RoRE range across common ODI-Fs.
- **Ofgem incorrectly assumes that SSES and SSEH would not qualify for the infrequent issuer premium.** Our analysis demonstrates that both the SSES and SSEH notional companies are expected to issue less than £150m of debt per year and therefore meet the criterion to qualify as infrequent issuers. We reflect this underfunding in our analysis.
- **Ofgem incorrectly computes financing costs,** masking a shortfall in the cost of debt allowance that a notional company would experience. Ofgem modelling of the cost of debt allowance assumes that the company refinances exactly 1/17th of its net debt each year and raises no additional debt. In practice, a notional company raises different amounts of debt in different years, depending on its operational and investment requirements. We correct this assumption by applying a more accurate modelling of the debt financing costs of the notional company, which shows that Ofgem's allowance is not sufficient to cover the cost of debt estimated for a notional DNO.

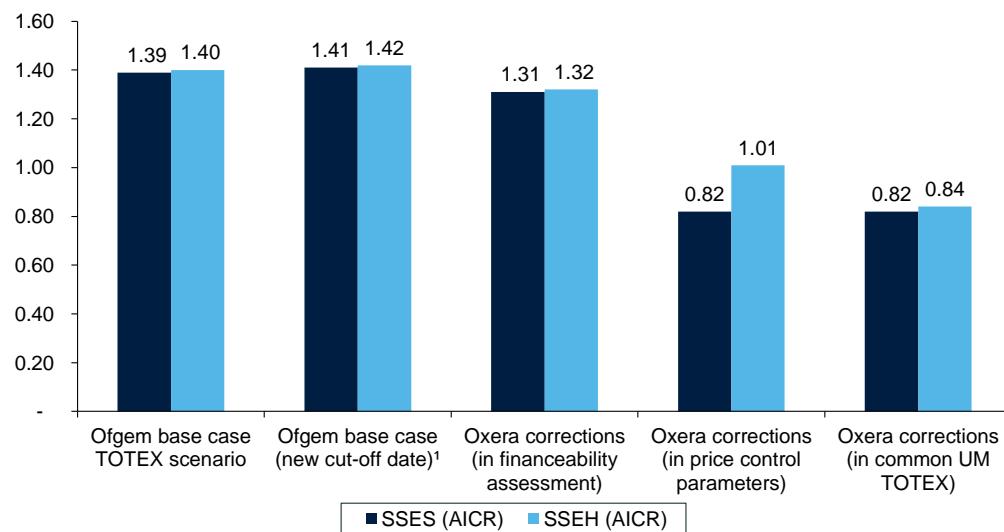
Finally, there are issues with Ofgem's assumptions regarding likely outturn TOTEX in ED2.

- **'Base case TOTEX' is not the most likely scenario.** We present the results of our analysis assuming SSE's view on the most likely additional volumes of work, and the associated costs, that the networks will need to incur over ED2.

After correcting these errors, the SSES and SSEH notional companies' financeability deteriorates even further. The figure below shows how the AICRs for the networks reduce after applying these corrections.

⁶ For details, see Oxera (2022), 'Review of the cost assessment in Ofgem's RIIO-ED2 Draft Determinations', 23 August; and Oxera (2022), 'Review of Ofgem's RIIO-2 Draft Determinations proposal on ongoing efficiency', August.

Comparison between the AICR level in Ofgem base case TOTEX scenario and after applying Oxera corrections for SSES and SSEH



Note: ¹ The cut-off date has been updated from 29 April 2022 to 29 July 2022.

Source: Oxera analysis of Ofgem Draft Determinations PCFM.

To ensure that the networks are financeable, Ofgem must correct issues ‘at source’ where possible, and ‘aim up’ on the cost of equity

We have considered whether the financeability issues outlined above could be addressed through the remedies that Ofgem identifies in its Draft Determinations. However, these remedies cannot solve the problem, since:

- dividend yields cannot be reduced, as implied dividend yields are already negative;
- adjusting ‘NPV-neutral’ levers is not recognised by Moody’s and Fitch in their credit ratio assessments, would lead to lower allowed revenues in future control periods, and has been previously rejected by the CMA;
- the notional gearing assumption has already been reduced, from 65% in RIIO-ED1 to 60% in RIIO-ED2. Reducing it further would represent an even more significant change, with the implication that an even larger equity injection would be required to de-gear the notional companies.

Fundamentally, the issue is that allowed revenues are insufficient to cover the forecast of efficiently incurred costs, and provide insufficient buffer for equity risks. Therefore, the only appropriate remedy to address the financeability problem is to reconsider the proposed revenue allowances.

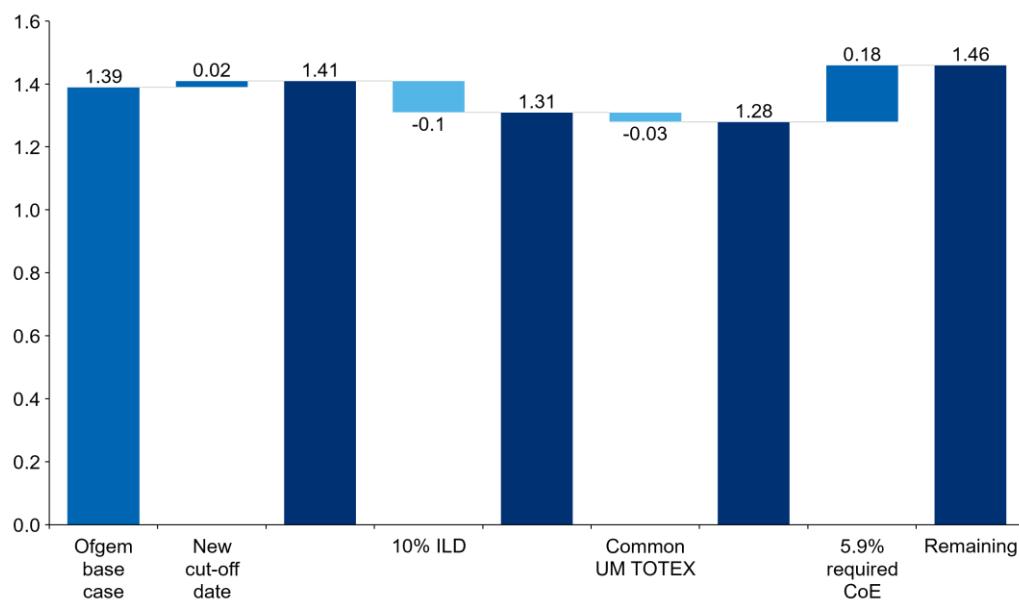
To begin with, **the following issues should be addressed ‘at source’**:

- **providing sufficient TOTEX allowances** to ensure that the companies can fund their efficient expenditure requirements over the period;
- eliminating the downside skew apparent in the ODI’s penalties and rewards package;
- **providing an infrequent issuer premium** of 6bps to SSES’s and SSEH’s cost of debt allowances;

- **correcting the overall cost of debt allowance**, to ensure the notional companies can recover their efficiently incurred debt financing costs.

However, even if these issues are corrected, our analysis shows that the notional SSE networks will still be unfinanceable without further increases in revenue allowances. Therefore, **an increase to the allowed cost of equity is also needed**, to ensure that SSES and SSEH are financeable. Our analysis indicates that the cost of equity allowance must be increased to at least 5.9% for SSES to secure a Baa1 rating for every year of the regulatory period, based on Ofgem's rating simulator (and assuming that the issues listed above are corrected at source). This level of the cost of equity will not bring SSEH's credit rating to the target Baa1 level in every year, but will improve the network's metrics. The figures below illustrate the impact of addressing the issues at source and increasing the allowed cost of equity on the SSES and SSEH AICR.

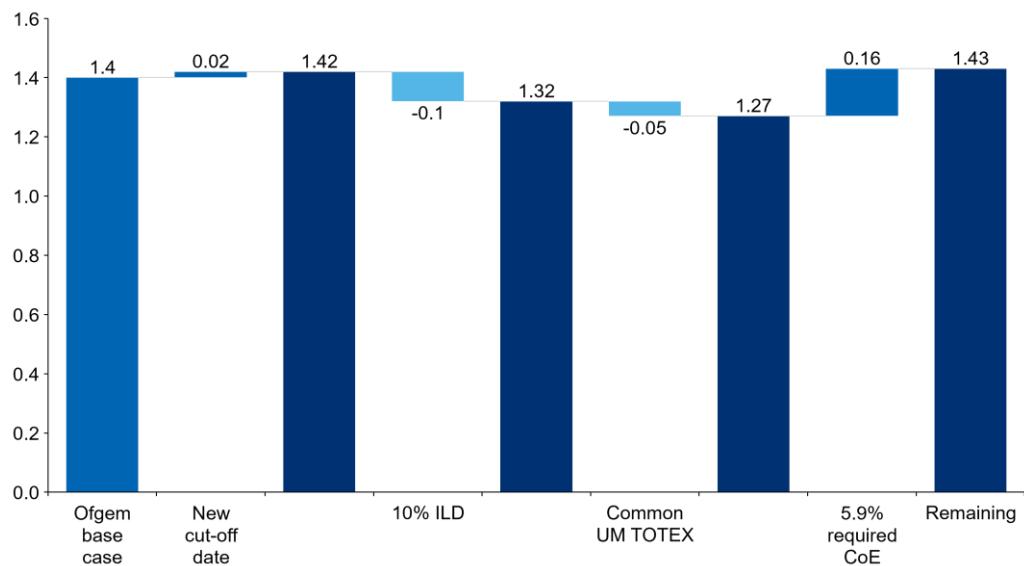
The impact of the required increase to the cost of equity allowance for SSES



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

The impact of the required increase in the cost of equity allowance for SSEH



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

1 Introduction

Scottish and Southern Electricity Networks (SSE) has asked Oxera Consulting LLP (Oxera) to review Ofgem's financeability assessment as part of its response to the RIIO-ED2 Draft Determinations.⁷

Ofgem uses the financeability assessment as a check to ensure that an efficient company can generate sufficient cash flow to meet its financing needs, given all the components of the price control. In the Draft Determinations, Ofgem concludes that the two electricity distribution networks that SSE operates, SSES and SSEH, are financeable on the basis of the notional capital structure and taking account of the allowed costs and allowed returns.

This report provides a review of Ofgem's assessment and additional analysis of the financeability of the SSES and SSEH notional companies, using the corrected assumptions and methodologies where we consider that Ofgem has made material errors in its assessment.

Section 2 of the report considers the purpose of regulatory financeability tests and establishes a set of principles that are best practice and should underpin the assessment of financeability for RIIO-ED2.

The remainder of the report sets out areas where Ofgem has not adhered to these principles, and provides a revised assessment. It is structured as follows:

- section 3 discusses Ofgem's approach to financeability assessment, in terms of the target credit rating and metrics that are considered in its analysis and the definition of the notional company;
- section 4 shows that Ofgem's conclusion that the SSES and SSEH notional companies are financeable is not supported by its own analysis;
- section 5 shows that Ofgem's assumptions for the notional company have the effect of artificially enhancing the credit ratios on paper;
- section 6 discusses the implications of the SSES and SSEH notional companies not being financeable contrary to Ofgem's statutory duty, and the approaches to address this in line with best practice;
- section 7 concludes.

⁷ Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', section 5.

2 Purpose and principles of the financeability test

The Electricity Act 1989 requires Ofgem to have regard to ‘the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed’.⁸

In light of their statutory duties to ensure financeability, economic regulators conduct financeability tests to assess the capacity of the regulated business to finance its day-to-day operations and capital investments under the terms of the price control settlement. There are generally considered to be two legs to financeability:⁹

- allowing an efficient, well-run company to earn a rate of return that is commensurate with the cost of capital;
- providing sufficient revenues to enable an efficient, well-run company to raise finance from capital markets readily and on ‘reasonable’ terms.

The assessment of financeability is a critical component of ensuring that a price control is in the public interest, given the potentially significant costs to users (and society) if the company experiences financial distress or it lacks the ability and the incentives to make efficient investments.

In this section, we consider the principles that should underpin the assessment of financeability for a regulated network. In particular, we set out that:

- it is important that financeability is assessed using an appropriate target credit rating, and an appropriate set of metrics (covering both debt and equity) and thresholds (section 2.1);
- where the analysis is conducted on the basis of a notional company, the notional company needs to be defined in a robust way (section 2.2).

Section 2.3 brings this together as a set of principles for the RIIO-ED2 financeability assessment based on best practice. The remainder of this report then shows the results of the financeability analysis when these principles are followed.

2.1 Financeability needs to be assessed against appropriate target rating and credit ratio benchmarks

To assess whether companies are able to access capital markets on ‘reasonable terms’, regulators tend to consider financeability in terms of the company’s ability to maintain a target credit rating. This rating is based on the credit rating agencies’ assessment of a company’s business fundamentals and cash-flow metrics.

- **What is the target credit rating?** Regulators generally accept that a financeable company should be able to secure a ‘comfortable/solid’ investment-grade credit rating.¹⁰ This reflects the fact that borrowing costs

⁸ UK Government (1989), ‘Electricity Act 1989’, section 3A.

⁹ See, for example, Ofgem (2010), ‘Regulating Energy Networks for the Future: RPI-X@20: Emerging Thinking – Embedding financeability in a new regulatory framework’, 20 January, para. 3.1.

¹⁰ For example, in RIIO-ED1 Ofgem stated that: ‘We generally assume that a DNO will be financeable if it can maintain an investment grade credit rating and we test to see whether our decisions will make it unduly difficult for a DNO to do this.’ Ofgem (2014), ‘RIIO-ED1: Draft determinations for the slowtrack electricity distribution companies’, p. 41, para. 5.22. In RIIO-GD/T2, Ofgem targeted the credit rating two notches above the investment grade: ‘At Draft Determinations, we indicated that we were comfortable with network

tend to be much higher for firms with sub-investment-grade ratings. The definition of a ‘comfortable/solid’ investment-grade rating has been interpreted in different ways, and regulators have increasingly relied on companies to provide their own analysis and assurance around the appropriate target rating. However, it has been common practice across companies (and regulators) to target a credit rating two notches above investment grade (i.e. BBB+/Baa1).

- Indeed, as noted by Ofgem, most networks targeted a credit rating of BBB+/Baa1 in their RIIO-ED2 Business Plans.¹¹ This was also the case for all transmission and gas distribution networks in the RIIO-GD/T2 price control review, as well as water networks in PR19.¹² The CMA used the same BBB+/Baa1 target credit rating in its PR19 redeterminations.¹³
- A further consideration is that there should be consistency between the assumptions about the target credit rating in the financeability test and the rating underpinning the calculation of the efficient cost of debt. For RIIO-2, consistency with the proposed cost of debt index would imply that the notional company would be expected to comfortably target a Baa1 rating.¹⁴
- It should be noted that the energy networks have had higher credit ratings (e.g. A/A3) in the past, and even a target rating of BBB+/Baa1 would represent a downgrade relative to past levels in some instances. A downgrade in the credit rating may have consequences when estimating the cost of capital. For example, at a lower target credit rating, the beta of National Grid (which is a key data point in Ofgem’s beta estimation exercise) may be expected to increase relative to historical levels, and the debt spreads of downgraded energy networks would be expected to increase, driving an increase in yields on new debt raised by networks.
- **Which benchmarks should be considered, and what weight should be placed on them?** The best practice approach to financeability analysis is to follow the methodologies adopted by credit rating agencies.¹⁵ It is the rating assigned by credit rating agencies that affects the rate at which companies can raise debt and their ease of access to debt markets. The credit rating also determines whether a licensee satisfies its licence requirement to maintain an investment-grade credit rating. Therefore, the financeability assessment should be consistent with their methodologies. Credit rating agencies take account of a wide set of factors (see, for example, Table 2.1 below), and therefore a similar approach should be applied in regulatory financeability analysis.

companies’ suggestions of target credit quality of two notches above investment grade (which provides headroom over their investment grade licence obligation). This remains our position...’ Ofgem (2020), [‘Decision - RIIO-2 Final Determinations – Finance Annex \(REVISED\)](#), 3 February, para. 5.36.

¹¹ Ofgem (2022), [‘RIIO-ED2 Draft Determinations—Finance Annex’](#), 29 June, p. 64, para. 5.15.

¹² Ofgem noted that all networks assured their business plans on the basis of a target rating of at least BBB+/Baa1. See Ofgem (2020), ‘RIIO-2 Draft Determinations – Finance Annex’, 9 July, para. 5.6. Similarly for PR19, according to Ofwat, all water companies assessed notional company financeability in terms of BBB+/Baa1, and this was the basis of Ofwat’s assessment. See Ofwat (2019), ‘PR19 final determinations: Aligning risk and return technical appendix’, December, p. 67.

¹³ Competition and Markets Authority (2021), [‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations. Final report’](#), 17 March, para. 10.100.

¹⁴ Ofgem is proposing to use the iBoxx GBP Utilities 10+ index for the purposes of indexing the cost of debt. 81% of the constituent bonds are Baa1 rated or above. The 81% is computed by weighting the bonds by their issuance amount.

¹⁵ Ofgem follows this principle in the RIIO-2 price controls. Ofgem (2020), [‘Decision - RIIO-2 Final Determinations – Finance Annex \(REVISED\)](#), 3 February, para. 5.22. Ofgem (2022), [‘RIIO-ED2 Draft Determinations—Finance Annex’](#), 29 June, para. 5.14.

- A core part of the credit rating methodologies is the analysis of credit ratios. The rating agencies give more weight to certain ratios in their rating determinations. For electricity networks, the main metrics include interest cover ratios, gearing, FFO/net debt and RCF/net debt.¹⁶ It is best practice for regulators to consider the same credit ratio definitions as used by credit rating agencies.¹⁷
- In addition, while credit rating agencies' methodologies provide an indication of debt financeability, they do not cover equity financeability—i.e. the extent to which the price control provides an equity return that appropriately remunerates investors given the risk of the investment. Given that networks finance themselves through a combination of debt and equity, this is an important component of meeting the financing duty. It is therefore also necessary to consider the adequacy of the equity return and other equity metrics such as dividends and any equity injections that may be required to maintain the target credit rating.

Table 2.1 Moody's rating methodology for regulated energy networks

Factors	Factor weighting	Sub-factors
Regulatory environment and asset ownership model	40%	Stability and predictability of regulatory regime (15%) Asset ownership model (5%) Cost and investment recovery (ability and timeliness, 15%) Revenue risk (5%)
Scale and complexity of capital programme	10%	
Financial policy	10%	
Leverage and coverage	40%	Adjusted interest coverage ratio OR FFO interest coverage (10%) Net debt/RAV OR Net debt/fixed assets (12.5%) FFO/net debt (12.5%) RCF/net debt (5%)

Source: Moody's (2022), '[Rating methodology: Regulated electric and gas networks](#)', 13 April, p. 3.

- **What are the minimum thresholds for these measures/what is deemed to be a financeability issue?** If a company comfortably achieves the target credit rating without the need for significant equity injections, it can be deemed financeable. Although financial ratios do not determine 100% of the final issuer credit rating, credit rating agencies provide guidance on minimum thresholds for key ratios. There may be a degree of flexibility around lower bounds for individual ratios, but these thresholds provide a strong indication of what is likely to constitute a financeability concern. Moreover, the regulator's objective should not be to set allowances at the minimum level required to achieve the minimum thresholds for a solid

¹⁶ See, for example, Moody's (2022), '[Rating methodology: Regulated electric and gas networks](#)', 13 April.

¹⁷ For example, in the PR19 redetermination, the CMA has undertaken financial ratio analysis 'similar to that which would be undertaken by the credit rating agencies'. Competition and Markets Authority (2021), '[Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations. Final report](#)', 17 March, para. 103. When the CMA considered this issue in Bristol Water (2015), it also stated that actual rating agency metrics should be used and adjusted Ofwat's calculations accordingly.

investment-grade credit rating. Reaching the minimum Baa1 thresholds is a necessary but not sufficient condition to be financeable.

- The level of these thresholds is also set in a way that takes into account other factors. For example, during Ofwat's PR19 process, both Moody's and Fitch increased the minimum credit ratio thresholds that water networks need to reach to achieve a certain credit rating, reflecting the fact that the agencies considered the price control to be riskier:

To reflect the somewhat increased business risk, given our changed view around the stability and predictability of the regulatory regime and expectation of more volatile cash flow, we have revised our ratio guidance for the sector, such that a UK regulated water company would have to exhibit slightly lower gearing and stronger interest coverage to maintain the same credit quality.¹⁸

We have tightened our gearing rating sensitivity by 3% and increased the post-maintenance interest cover (PMICR) sensitivity by 0.1x for Fitch-rated entities for the upcoming price control.¹⁹

Table 2.2 shows Fitch's and Moody's credit ratio threshold guidance. In this context, it is important to distinguish between thresholds that define the rating of a ratio as a sub-factor ('sub-rating') and thresholds that trigger a change in an overall rating of the company. Sub-ratings are averaged across the factors using sub-factor weightings, as specified in Table 2.1 above, to determine an overall rating of the company—this is the way in which sub-ratings have an impact on the overall credit rating of the company.

Table 2.2 Indicative ranges by credit rating agencies for sub-ratings and credit ratings

Credit metrics	Fitch Sub-rating: BBB	Moody's Sub-rating: Baa	Moody's Company rating: Baa1
Net debt/RAV (%)	60–70%	60–75%	68–75% ¹
AICR (x)/Cash PMICR (x)	1.6–2.2	1.4–2.0	1.4–1.6 ¹
Nominal PMICR (x)	1.8–2.5		
FFO (interest expense)/net debt (%)		11–18	
RCF/net debt (%)		7–14	

Source: Moody's (2022), '[Rating methodology: Regulated electric and gas networks](#)', 13 April, p. 6. Fitch (2022), '[Sector Navigators: Addendum to the Corporate Rating Criteria](#)', 15 July, p. 204. ¹ Moody's (2020), 'RIIO-2 Draft Determinations webinar', 9 September, p. 16.

- What is the trend over time?** It is necessary to consider trends over time—for example, passing the ratios on average for a price control but with a downward trend would be a clear reason for concern if the company is forecast to be downgraded below Baa1/BBB+ and significant equity injections are required.

¹⁸ Moody's Investor Service (2018), 'Regulator's proposals undermine the stability and predictability of the regime', 22 May, p. 5.

¹⁹ Fitch Ratings (2019), 'Fitch Revises Outlook on Yorkshire Water's Senior Secured Debt to Negative', 11 February.

2.2 The notional company should be robustly defined

Another key aspect of regulatory financeability tests is the assumptions that are made about the levels of cost efficiency and service delivery that can be achieved by a well-performing company and the financial structure of the business.

The analysis can be conducted on the basis of the company's actual financial structure or by considering the financial structure of a notionally efficient company. Ofgem considers that financeability should be assessed on the basis of the notional company, so as not to take into account any potential inefficiencies in companies' actual financing decisions.²⁰ This requires assumptions about the optimal financing structure in terms of gearing, debt portfolio, and so on.

For the financeability assessment to be meaningful, the notional company should be 'exogenously' defined based on robust evidence of the notionally efficient financing structure. The assumptions should also be achievable in practice by an efficient company.²¹

We cover problems with Ofgem's definition of the notional company in section 5.

2.3 Implications for RIIO-2 financeability assessment

In line with the best practice regulatory principles outlined above, the assessment of financeability for electricity distribution networks should:

- consider financeability from the perspective of both debt and equity investors;
- seek to secure that networks can maintain a credit rating of at least BBB+/Baa1 in the round, without the need for significant equity injections (i.e. taking into account both the financial ratio thresholds and an overall methodology by credit rating agencies, and supplementing this with an assessment of equity financeability);
- consider the same credit ratio definitions as used by credit rating agencies;
- provide evidence that the notional company represents a reasonable, 'exogenously determined' view of the notionally efficient company.

In the remainder of this report, we highlight aspects of Ofgem's approach to assessing financeability that are inconsistent with these principles and lead to material errors in its financeability assessment.

²⁰ Companies were, however, required to assure the financeability of their business plans on both a notional and an actual company basis.

²¹ The CMA has followed this principle in its PR19 redetermination, saying that: '...the actual credit ratings will be influenced heavily by the ability of the water companies to achieve the cost and outcomes targets set for AMP7. It is therefore important to consider whether the assumptions made about costs and outcomes are likely to be achievable in practice, and whether the balance of risk for the companies is consistent with those credit ratings'. Competition and Markets Authority (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations. Final report', 17 March, para. 10.73 (d).

3 Ofgem's approach to debt financeability

In this section, we review Ofgem's approach to the target credit rating and credit ratio thresholds, its definition of credit ratios, and its definition of the notional company.

First, we observe that Ofgem has failed to apply a minimum threshold of BBB+/Baa1 in making its assessment that the RIIO-ED2 Draft Determination is financeable, even though it is 'comfortable with the BBB+/Baa1 credit rating target adopted by most networks'.²² This approach of not committing to a specific target rating leads Ofgem to interpret the results that point to the levels below the threshold as financeable. Ofgem also puts more weight on the results of the rating simulator than on individual ratios.

Second, we summarise the definitions of the credit ratios used by Ofgem.

Finally, we outline Ofgem's definition of the SSES and SSEH notional companies, which we consider further in the rest of this report.

3.1 Ofgem's approach to the target credit rating and credit ratio thresholds allows Ofgem to misinterpret its results

For RIIO-ED2, all companies have undertaken their business plan assurance on the basis of achieving at least a BBB+/Baa1 rating.²³ Ofgem states that it 'does not target any particular rating'²⁴ and has instead 'completed an in the round assessment that targets each notional company being judged as broadly of comfortable investment grade credit quality'.²⁵ Ofgem justifies its approach of not having a target credit rating by saying that stakeholders do not always agree on credit quality assessments.²⁶

We agree that credit rating agencies' and other stakeholders' conclusions on credit ratings may vary, but, instead of inferring that the rating can be below the BBB+/Baa1 minimum threshold, as Ofgem incorrectly does, we conclude that this means that it needs to be comfortably above the threshold—e.g. assessed to be above the threshold by multiple agencies.

In its RIIO-GD2/T2, Ofgem used a BBB+/Baa1 rating to draw a conclusion:

[...] the application of the full Moody's methodology results in a methodology implied rating of Baa1 (2 notches above the minimum investment grade) or above for all notional networks across Ofgem FD, Net Zero 1 and Net Zero 2 scenarios.²⁷

GEMA also stated that while **its view was** that its in-the-round assessment of the notional company in the FD was **consistent with credit quality equivalent of BBB+/Baa1**, this did not require Moody's to be of the same view.²⁸ [emphasis added]

²² Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', 29 June, para. 5.18.

²³ SPEN and NPG indicated Baa1/A3 and A-/A3 target ratings respectively.

²⁴ Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', 29 June, para. 5.14.

²⁵ Ibid., para. 5.23.

²⁶ Ibid., para. 5.19.

²⁷ Ofgem (2020), '[Decision - RIIO-2 Final Determinations – Finance Annex \(REVISED\)](#)', 3 February, para. 5.24.

²⁸ Competition and Markets Authority (2021), '[Cadent Gas Limited, National Grid Electricity Transmission plc, National Grid Gas plc, Northern Gas Networks Limited, Scottish Hydro Electric Transmission plc, Southern Gas Networks plc and Scotland Gas Networks plc, SP Transmission plc, Wales & West Utilities Limited vs the Gas and Electricity Markets Authority. Final determination. Volume 2A: Joined Grounds: Cost of equity](#)', 28 October, para. 5.1015.

By not committing to a specific target credit rating, Ofgem provides itself with the flexibility to conclude that notional networks are financeable even when their rating is below BBB+/Baa1, which is the case for some networks according to Ofgem's RIIO-ED2 Draft Determinations analysis, as discussed in further detail in section 4.

In addition, although Ofgem shows individual ratios, it does not provide guideline ranges for specific credit ratios and expresses its concerns with focusing on individual metrics (notably AICR and PMICR).²⁹ Instead, Ofgem focuses on the simulated credit ratings, following Moody's methodology:

While AICR metrics are tight for all licensees relative to typical investment grade levels for that metric alone, overall credit ratings are consistent with a comfortable investment grade rating.³⁰

As described in section 2.1, it is best practice to account for both the overall rating and the evidence contained in the individual credit ratios.

It is also necessary to account for trends over the course of the price control, which Ofgem has failed to consider in the Draft Determinations and which further misrepresents the results, as demonstrated in section 4.

Not having specific thresholds or even a target credit rating means that Ofgem retains a considerable degree of regulatory discretion as to what represents a financeability concern, and in the Draft Determinations wrongly concludes that the networks are financeable even when their ratios are below the thresholds for the target rating of the company.

Finally, Ofgem does not justify targeting a level of gearing (60%) above the Baa1 range of 68–72% (60% being on the threshold between A3 and A2), while the AICR rating is more towards the end of the Baa1 range and FFO/net debt and RCF/net debt are on the lower end of the Baa sub-rating.^{31, 32} We review this in more detail in section 6.

3.2 Ofgem's definitions of credit ratios

As described above, Ofgem puts significant weight on its assessment of the implied credit rating, estimated following Moody's methodology (also referred to as a 'credit rating simulator' in Ofgem's price control financial model—PCFM). In Table 3.1 below, we report the definitions of credit ratios that Ofgem applies in the PCFM when replicating Moody's rating methodology.

²⁹ Ibid., para. 5.20.

³⁰ Ibid., para. 5.49.

³¹ Moody's (2020), 'RIIO-2 Draft Determinations webinar', 9 September, p. 16.

³² Moody's (2022), '[Rating methodology: Regulated electric and gas networks](#)', 13 April, p. 6.

Table 3.1 Credit ratio definitions in Ofgem's PCFM

Credit ratio	Ratio definition in Ofgem's PCFM
Net debt/RAV (%)	$\frac{\text{Closing net debt}}{\text{Closing RAV}}$
AICR (x) ¹	$\frac{\text{FFO} - \text{RAV depreciation} - \text{Net interest paid}}{\text{Net interest paid}}$
FFO (interest expense)/ net debt (%)	$\frac{\text{FFO}}{\text{Closing net debt}}$
RCF/net debt (%) ²	$\frac{\text{RCF} - \text{principal inflation accretion}}{\text{Closing net debt}}$

Note: ¹ In the AICR formula, the 'net interest paid' parameter excludes principal inflation accretion. This is aligned with Moody's formula where non-cash accretion is deducted in the numerator, only to the extent that it has been included in FFO, and is deducted from the denominator, only to the extent that it has been included in interest expense. Ofgem adjusts AICR to replicate Moody's form of AICR net of excess fast (slow) money. ² In its calculation of RCF/net debt, Ofgem subtracts principal inflation accretion from the numerator. This is inconsistent with Moody's definition of RCF/net debt. In the rest of the report, we correct the identified difference in RCF/net debt, aligning the formula with the one from Moody's. The result of this correction is a small increase in RCF/net debt.

Source: Ofgem Draft Determinations PCFM, and Moody's (2022), '[Rating methodology: Regulated electric and gas networks](#)', 13 April, p. 14.

3.3 Ofgem's definition of the SSEs and SSEH notional companies inflates the level of financeability

Table 3.2 sets out the assumptions used by Ofgem in assessing financeability for the SSEs and SSEH notional companies at the Draft Determinations. These notional companies differ from the notional companies of other electricity distribution networks in terms of company-specific assumptions, including capitalisation rates, TOTEX allowances and opening RAV. In section 5, we further explain that Ofgem's definition of the notional company rests on the assumptions about efficient company performance which are not justified on the basis of the best available evidence, which results in an artificially inflated level of financeability—see Table 5.1 in section 5 for the summary of our corrections of Ofgem's assumptions.

Table 3.2 Assumptions underpinning Ofgem's assessment of the financeability of the SSES and SSEH notional companies

Parameter	Ofgem assumption
Allowed return on equity	4.75% on average over the price control period, with an annual profile corresponding to the cost of equity allowance forecast
Allowed cost of debt	2.26% on average over the price control period, with an annual profile corresponding to the forecast of the 17-year iBoxx GBP Utilities 10+ trailing average, plus additional costs of borrowing
TOTEX	Efficient network costs for RIIO-ED2 are assumed equal to the TOTEX allowances Ofgem considers two scenarios: the base case TOTEX and the high case TOTEX, where the latter corresponds to the additional TOTEX being allowed via UMs
Net debt	Net debt is reset to the Draft Determinations notional gearing level of 60% at the start of RIIO-ED2, with the opening de-gearing from the RIIO-ED1 level of 65% assumed to be achieved by an equity injection
Index-linked debt	25% of net debt is assumed to be CPIH-linked (and 0% RPI-linked)
Gearing	60% opening notional gearing. If gearing increases by more than 5%, equity issuance to bring gearing back to 60% is assumed.
Inflation	Immediate transition to CPIH for WACC allowance and RAV indexation
Dividend yield	Dividend yield of 3% of regulatory equity
Capitalisation rate	68% capitalisation rate for both SSES and SSEH for ex-ante allowances including PCDs, and 98% for both companies for re-openers and volume drivers
Depreciation	Asset life of 45 years
BPI and ODIs	No BPI or ODI rewards or penalties
Equity issuance transaction costs	5% of the value of any equity issuance, including equity issuance to de-gear at the beginning of the price control

Note: PCDs—price control deliverables. ODIs—output delivery incentives. BPI—business plan incentive.

Source: Oxera based on Ofgem (2022), 'RIIO-ED2 Draft Determinations—Finance Annex', 29 June, para. 5.24; and Ofgem's Draft Determinations PCFM.

4 Ofgem's own analysis indicates that SSES and SSEH are not financeable

In the Draft Determinations, Ofgem reports the results of its financeability analysis for the two SSE networks, and concludes that the Draft Determinations are 'financeable' for both.³³ In this section we discuss that Ofgem's own analysis does not support this conclusion—Ofgem's evidence shows that the SSE networks are not financeable at Baa1 credit rating by the end of the price control period. That is not accounting for the issues with Ofgem's assumptions that we discuss in the next section.

4.1 The average levels of AICR are below the minimum threshold required for the company to be rated at Baa1

Ofgem undertakes financeability analysis for two TOTEX scenarios: base case TOTEX and high case TOTEX. The high case TOTEX scenario corresponds to the additional TOTEX being allowed via uncertainty mechanisms (UMs).

Under the Ofgem base case TOTEX scenario, SSES has an average AICR of 1.39x and SSEH has an average AICR of 1.40x (see Table 4.1). Moody's minimum AICR threshold for a Baa1 credit rating is 1.40x. Therefore, while SSEH's average AICR is at the threshold, SSES's is below it. Furthermore, under the high case TOTEX scenario, both companies fall below the threshold with ratios of 1.38x and 1.36x respectively getting an overall rating of Baa2.

Ofgem itself recognises that 'AICR metrics are tight for all licensees relative to typical investment grade levels for that metric alone',³⁴ but does not put weight on this observation. We assume that by the 'typical investment grade levels for that metric alone', Ofgem means the sub-rating of AICR as a sub-factor within the weighting methodology. However, as explained in section 2.1, one should also account for the ratio thresholds affecting the rating of the overall company rather than the sub-rating of the ratio alone. Ofgem does not acknowledge that AICR alone being below the 1.4x threshold, which is the case in most scenarios tested by Ofgem, may lead to the overall rating of the company being under Baa1.

In relation to FFO/net debt, both SSES and SSEH meet the threshold of 11% for Baa sub-rating in the base case TOTEX scenario. However, SSEH falls below the threshold in the high case TOTEX scenario.

³³ Ofgem (2022), 'RIIO-ED2 Draft Determinations—Finance Annex', 29 June, para. 5.70.

³⁴ Ofgem (2022), 'RIIO-ED2 Draft Determinations—Finance Annex', 29 June, para. 5.49.

Table 4.1 Ofgem assessment of AICR and FFO/net debt ratios for SSES and SSEH under the base case TOTEX and high case TOTEX scenarios

	Financial Ratio	Target ¹	Target met?
AICR			
SSES (Ofgem base case TOTEX scenario)	1.39x	1.40x	NO
SSEH (Ofgem base case TOTEX scenario)	1.40x	1.40x	YES
SSES (Ofgem high case TOTEX scenario)	1.38x	1.40x	NO
SSEH (Ofgem high case TOTEX scenario)	1.36x	1.40x	NO
FFO/net debt			
SSES (Ofgem base case TOTEX scenario)	11.8%	11%	YES
SSEH (Ofgem base case TOTEX scenario)	11.5%	11%	YES
SSES (Ofgem high case TOTEX scenario)	11.1%	11%	YES
SSEH (Ofgem high case TOTEX scenario)	10.2%	11%	NO

Note: ¹ AICR target corresponds to the minimum threshold required for the overall credit rating of the company to be at Baa1. FFO/net debt target corresponds to the minimum threshold required for the sub-rating of FFO/net debt ratio to be at Baa.

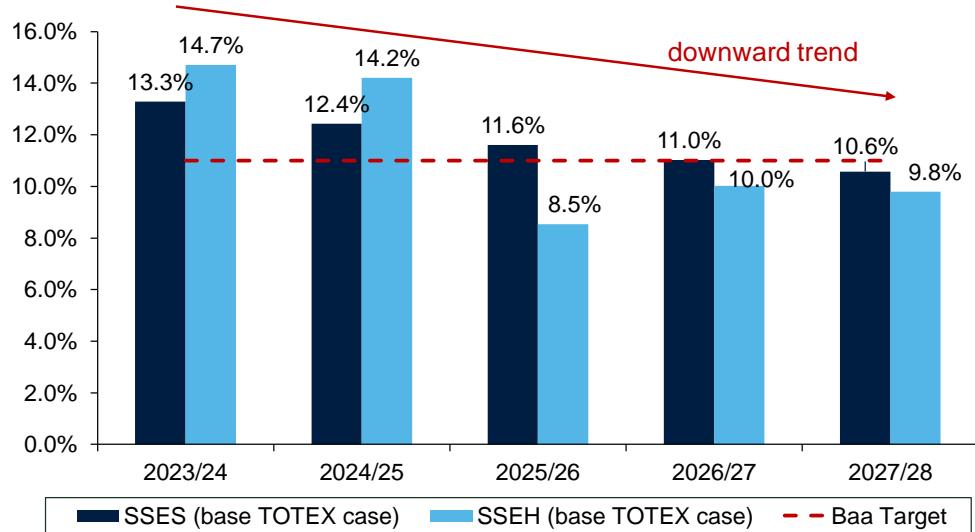
Source: Oxera analysis of Ofgem (2022), 'RIO-ED2 Draft Determinations—Finance Annex', 29 June, Table 20; Moody's (2022), '[Rating methodology: Regulated electric and gas networks](#)', 13 April; and Moody's (2020), 'RIO-2 Draft Determinations webinar', 9 September, p. 16.

4.2 FFO/net debt ratios and an overall simulated credit rating show sharp deterioration over the price control period despite equity injection

The ratios reported in Ofgem's Draft Determinations and shown above are the averages during the ED2 period. However, when assessed on an annual basis, it is clear that both companies' financeability suffers a decline over the five years. This indicates that both SSES and SSEH may not be able to raise debt from capital markets on reasonable terms by the end of ED2 (i.e. at the level of the iBoxx GBP Utilities 10+ ('the Utilities index') yields, as assumed by Ofgem in its cost of debt allowance).

Figure 4.1 and Figure 4.2 show the downward trend in FFO/net debt for the two companies under both high and base case TOTEX scenarios. This shows that by the end of ED2, both companies' ratios fall below the Baa sub-rating level. Indeed, the ratios are forecast to be below Baa by the third year of ED2 under all scenarios for SSEH and under the high scenario for SSES.

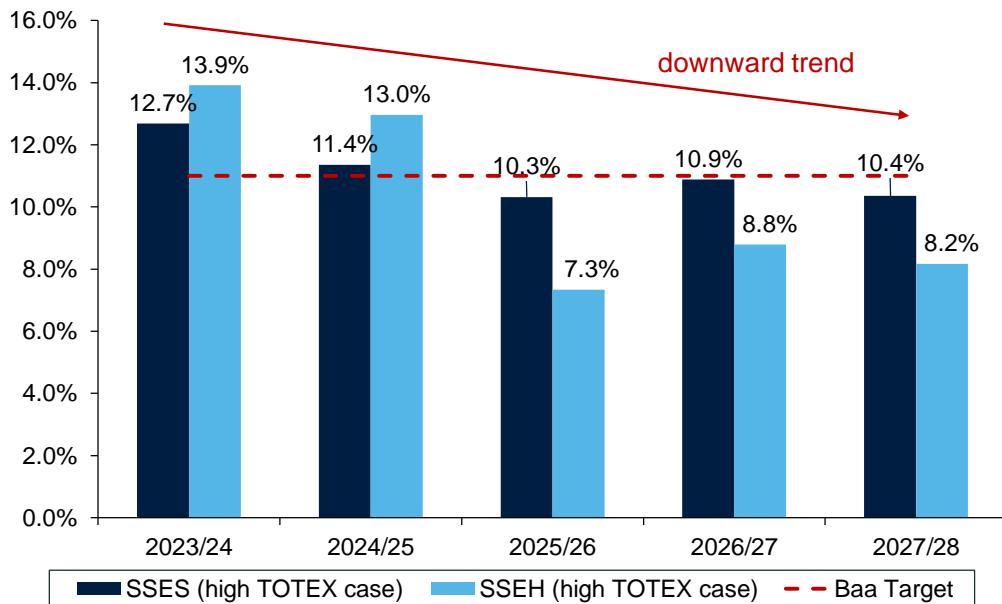
Figure 4.1 FFO/net debt during each year of ED2 for SSES and SSEH under the base case TOTEX scenario



Note: The target for the Baa sub-rating for FFO/net debt is at 11% based on Moody's 2022 rating methodology.

Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

Figure 4.2 FFO/net debt during each year of ED2 for SSES and SSEH under the high case TOTEX scenario



Note: The target for the Baa sub-rating for FFO/net debt is at 11% based on Moody's 2022 rating methodology.

Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

Table 4.2 and Table 4.3 show the trends in AICR, FFO/net debt and RCF/net debt for the two companies under both TOTEX scenarios.³⁵ All ratios decline

³⁵ We select these three financeability metrics because they are considered to be the three of the four most important ones by Moody's, as reported in Table 2.1. The fourth one is gearing which we discuss separately below. We refer to Moody's because Ofgem chose to align its simulated rating methodology to that of Moody's.

over the period, although there is a step up in the fourth year for SSEH in both high and base case TOTEX scenarios (and for SSES in the high case TOTEX scenario). This step up is driven by an assumed injection of equity—equity issuance allows companies to reduce the downward trend on AICR by reducing the gearing that would otherwise keep growing. In reality, we cannot automatically assume that investors would be willing to invest these amounts of additional equity given the negative implied dividends—we discuss this and the impact of not having equity injections in the following sub-sections. However, notably, even with the equity funding, the companies' simulated credit rating deteriorates over the RIIO-ED2 price control period and falls below the Baa1 threshold by the end of the period in three out of four scenarios (in both base and high case TOTEX scenarios for SSEH and for high case TOTEX scenario for SSES).

Table 4.2 Annual credit ratios for SSES and SSEH under Ofgem base case TOTEX scenario

	2023/24	2024/25	2025/26	2026/27	2027/28
SSES					
AICR (x)	1.40	1.39	1.38	1.38	1.39
FFO/Net Debt (%)	13.3%	12.4%	11.6%	11.0%	10.6%
RCF/Net Debt (%)	11.3%	10.5%	9.7%	9.1%	8.7%
Cumulative equity injection (£m) ¹	—	—	—	—	—
Credit score	A3	Baa1	Baa1	Baa1	Baa1
SSEH					
AICR (x)	1.40	1.39	1.32	1.43	1.44
FFO/Net Debt (%)	14.7%	14.2%	8.5%	10.0%	9.8%
RCF/Net Debt (%)	12.7%	12.2%	6.7%	8.0%	7.8%
Cumulative equity injection (£m) ¹	—	—	—	148	148
Credit score	Baa1	Baa1	Baa1	Baa2	Baa2

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

Table 4.3 Annual credit ratios for SSES and SSEH under Ofgem high case TOTEX scenario

	2023/24	2024/25	2025/26	2026/27	2027/28
SSES					
AICR (x)	1.38	1.35	1.32	1.43	1.43
FFO/Net Debt (%)	12.7%	11.4%	10.3%	10.9%	10.4%
RCF/Net Debt (%)	10.7%	9.4%	8.5%	8.9%	8.4%
Cumulative equity injection ¹ (£m)	–	–	–	212	212
Credit score	Baa1	Baa1	Baa1	Baa2	Baa2
SSEH					
AICR (x)	1.38	1.35	1.26	1.41	1.38
FFO/Net Debt (%)	13.9%	13.0%	7.3%	8.8%	8.2%
RCF/Net Debt (%)	11.9%	11.0%	5.6%	6.9%	6.3%
Cumulative equity injection ¹ (£m)	–	–	–	250	250
Credit score	Baa1	Baa1	Baa1	Baa2	Baa2

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

4.3 Ofgem relies on high levels of equity injection and negative implied dividend yields to sustain debt financeability, which implies a negative effective dividend yield

In its modelling, Ofgem assumes that companies will issue equity in order to maintain gearing at around 60% over the period (allowing a ±5% deviation from the target level). However, Ofgem fails to report the amount of equity issuance required to maintain this level of gearing, and nor does it consider what the impact on gearing and financeability would be if this equity were not issued. This is an important omission, as it hinders a transparent assessment of equity financeability.

Table 4.4 shows the equity injections that would be needed to ensure that SSEH and SSES could maintain the notional level of gearing throughout the period. We show figures with Ofgem's 5% equity issuance threshold and without it (i.e. assuming that equity is issued as soon as the gearing deviates from 60%), for both the Ofgem base case and high case TOTEX scenarios. If the 5% threshold is removed, the amount of equity that is needed to maintain gearing at its notional level increases significantly.

Table 4.4 Required equity issuance for SSEH and SSES, in Ofgem base case TOTEX and high case TOTEX scenarios (£m)

	2023/24	2024/25	2025/26	2026/27	2027/28	Total
Equity issuance with 5% threshold—Ofgem base case TOTEX scenario						
SSEH	–	–	–	148	–	148
SSES	–	–	–	–	–	–
Equity issuance with 5% threshold—Ofgem high case TOTEX scenario						
SSEH	–	–	–	250	–	250
SSES	–	–	–	212	–	212
Equity issuance with 0% threshold—Ofgem base case TOTEX scenario						
SSEH	–	–	10	137	14	162
SSES	–	–	31	46	33	109
Equity issuance with 0% threshold—Ofgem high case TOTEX scenario						
SSEH	–	21	32	194	66	313
SSES	–	27	91	87	49	255

Note: The numbers exclude the equity issuance needed to de-gear from 65% to 60% at the beginning of the period.

Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

In addition to having to issue equity during ED2, companies are also required to issue equity at the beginning of the period to de-gear from the ED1 gearing level of 65% to the ED2 gearing level of 60%. To achieve this, SSEH and SSES need to issue £76m and £156m of equity, respectively.

Accordingly, the total equity issuance required to maintain a notional dividend yield of 3% and gearing at 60% (including the 5% equity issuance thresholds) is around:

- £224m and £156m for SSEH and SSES respectively (under Ofgem's base case TOTEX scenario); or
- £326m and £368m for SSEH and SSES respectively (under Ofgem's high case TOTEX scenario).

The implication of this is that Ofgem assumes that investors are willing to inject more equity into the companies than they will receive as dividends over the ED2 period. This is highlighted in the table below, which shows implied dividend yields taking into account the assumed equity injections. This shows that, when total net equity issuance is considered, implied dividend yields are significantly below 3% for companies under each scenario, and are actually negative in most instances.

Table 4.5 Implied dividend yield for SSES and SSEH in Ofgem base case TOTEX and high case TOTEX scenarios

	Ofgem base case TOTEX scenario ⁴		Ofgem high case TOTEX scenario ⁵	
	SSEH	SSES	SSEH	SSES
Dividends (£m)	A	120	227	136
Opening equity issuance (£m) ¹	B	76	156	76

ED2 equity issuance (£m) ²	C	148	-	250	212
Average regulated equity (£m) ³	D	765	1,443	802	1,527
Implied dividend yield (%)	(A - B - C)/(Dx5)	-2.71%	0.98%	-4.75%	-1.23%

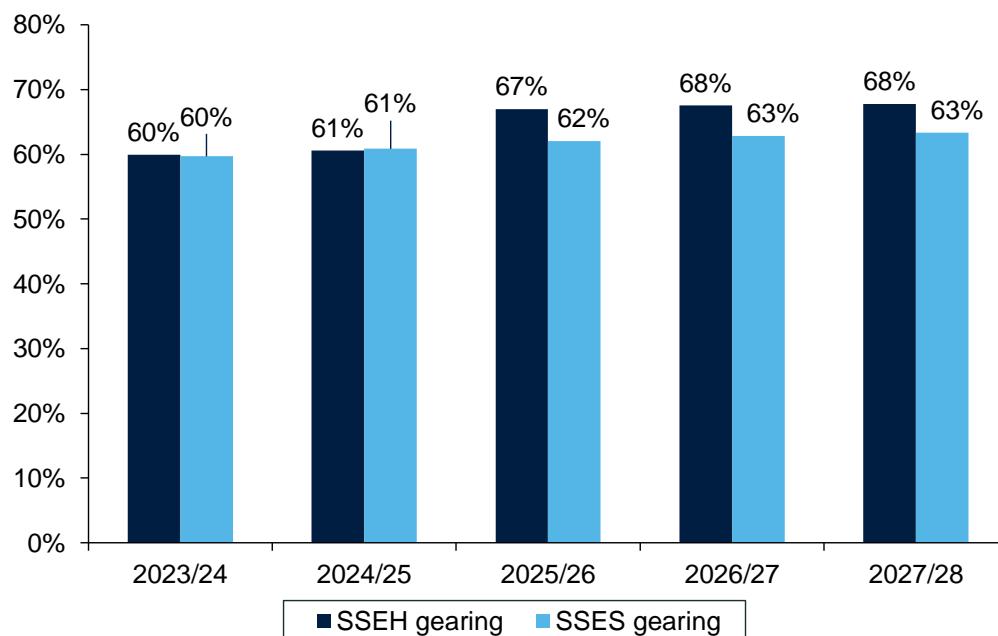
Note: ¹ Opening equity issuance is what is needed to de-gear from 65% to 60% at the beginning of RIOO-2. ² Other equity issuance is what is needed to maintain a stable level of gearing during the ED2 years. ³ Regulated equity corresponds to the closing equity level. ⁴ Under the Ofgem base case TOTEX scenario, the implied dividend yield for SSEH is positive due to zero equity issuance during the ED2 years, other than the equity issuance required to de-gear from 65% to 60% at the beginning of the period. ⁵ The implied dividend yield for both companies deteriorates once the high TOTEX scenario is considered.

Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

4.4 If investors do not accept the negative implied dividend yield and do not inject new equity, financeability deteriorates sharply

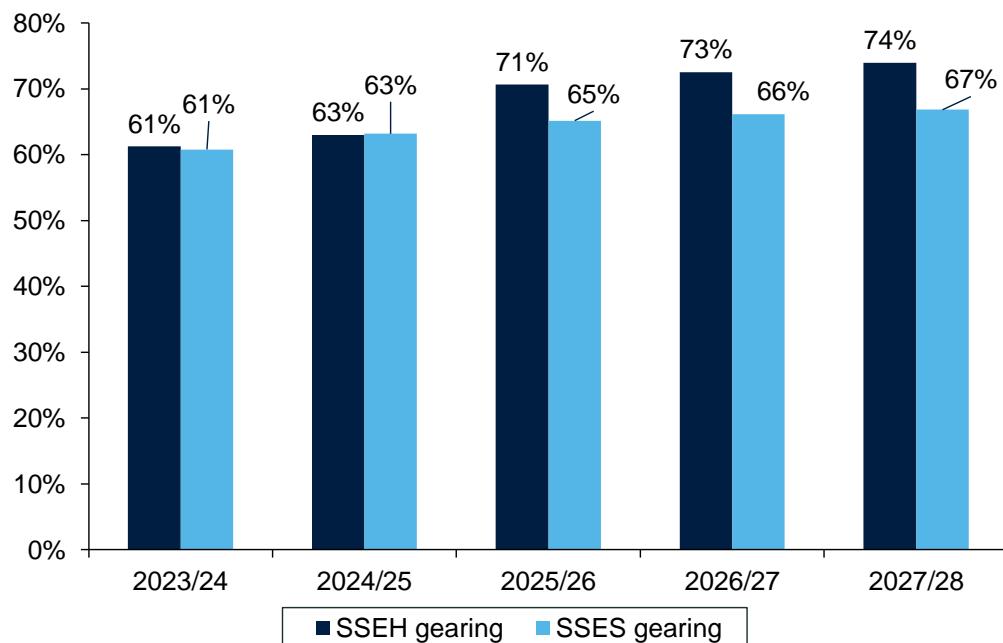
In reality, investors are unlikely to be willing to accept such a low implied dividend yield and still make equity contributions. Without equity injections to keep gearing below 65%, the gearing level for both companies increases sharply—up to 74% for SSEH in the high case TOTEX scenario (see Figure 4.3 and Figure 4.4).

Figure 4.3 Gearing profile for SSEH and SSEH without in-period equity injections, under the Ofgem base case TOTEX scenario



Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

Figure 4.4 Gearing profile for SSEH and SSES without in-period equity injections, under the Ofgem high case TOTEX scenario



Source: Oxera analysis based on Ofgem Draft Determinations PCFM.

Gearing is only one of the ratios that would deteriorate sharply over the ED2 price control period without equity injections. All ratios under consideration without exception, as well as the simulated credit rating, are worse without equity injections than in Ofgem's modelling where equity injections were assumed and which by itself showed poor financeability. For example, under the Ofgem base case TOTEX scenario, the impact of not having equity contributions on SSEH financeability is a decline in the average AICR from 1.40x to 1.34x (i.e. a failure to meet the Baa1 company rating threshold) and a decline in the simulated overall credit score from Baa1 to Baa2. SSES would not be affected under the Ofgem base case TOTEX scenario, since no equity injection was assumed for it during the price control period. Under the Ofgem high case TOTEX scenario, an average AICR over the price control period, which even with equity injections was below the Baa1 threshold, reduces from 1.38x to 1.34x and from 1.36x to 1.28x for SSES and SSEH respectively, when assuming no equity injections. Both companies' simulated credit ratings fall below the Baa1 target level. The trend in the level of all metrics affected by the equity injection is downward-sloping—i.e. the final year indicators are even worse than the average ones.

The results are summarised in Table 4.6 and Table 4.7 below.

Table 4.6 Ofgem base case TOTEX scenario with and without equity contributions for SSES and SSEH (with the 5% equity issuance threshold)

Ratios	SSES		SSEH	
	Ofgem base case TOTEX scenario	Ofgem base case TOTEX scenario (no equity injections)	Ofgem base case TOTEX scenario	Ofgem base case TOTEX scenario (no equity injections)
Net debt/RAV			61.8%	64.6%

AICR (x)	Unchanged, as no equity injections are assumed in the Ofgem base case TOTEX scenario for SSEs	1.40	1.34
Nominal PMICR (x)		2.15	2.06
FFO/net debt		11.5%	10.9%
RCF/net debt		9.5%	9.0%
RoRE		4.8%	4.6%
Equity issuance (£m) ¹		148	–
Simulated credit rating		Baa1	Baa2

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Source: Oxera analysis of Ofgem's Draft Determination PCFM.

Table 4.7 Ofgem high case TOTEX scenario with and without equity contributions for SSEs and SSEH (with the 5% equity issuance threshold)

Ratios	SSEs		SSEH	
	Ofgem high case TOTEX scenario	Ofgem high case TOTEX scenario (no equity injections)	Ofgem high case TOTEX scenario	Ofgem high case TOTEX scenario (no equity injections)
Net debt/RAV	62.4%	64.4%	64.3%	68.3%
AICR (x)	1.38	1.34	1.36	1.28
Nominal PMICR (x)	2.13	2.06	2.10	1.99
FFO/net debt	11.1%	10.7%	10.2%	9.6%
RCF/net debt	9.2%	8.8%	8.4%	7.8%
RoRE	4.7%	4.6%	4.7%	4.4%
Equity issuance (£m) ¹	212	–	250	–
Simulated credit rating	Baa2	Baa2	Baa2	Baa2

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

4.5 Conclusion on Ofgem's own analysis

In this section we have shown that Ofgem's own analysis does not support its conclusion that networks are financeable.

- The average levels of AICR are below the minimum threshold required for the company to be rated at Baa1 (for SSEH in both Ofgem TOTEX scenarios and for SSEs in the high case TOTEX scenario).
- An overall simulated credit rating falls below Baa1 by the end of the price control period (for SSEH in both Ofgem TOTEX scenarios and for SSEs in the high case TOTEX scenario).
- FFO/net debt ratios show a sharp deterioration over the price control period, falling under the Baa sub-rating threshold by the last year for both companies in both scenarios.
- The financeability results are poor despite Ofgem's reliance on a high level of equity injections, which implies a negative effective dividend yield. In reality, equity injections may not be possible.

- If investors do not accept the negative implied dividend yield, and thus do not inject new equity, companies' financeability deteriorates sharply, with the simulated credit rating being at Baa2 on average over the price control period.

Overall, this evidence suggests that the notional SSEH and SSES companies are not financeable at Baa1. This is before the effect of the errors in Ofgem's definition of the notional company that we discuss in the next section, where we show that those errors mask the poor financeability of the notional SSEH and SSES companies.

5 Ofgem's definition of the notional company erroneously enhances credit metrics

In the Draft Determinations, Ofgem has focused on assessing financeability for a notional company. As set out in section 2.2, for an assessment of notional company financeability to be meaningful, the notional company needs to be constructed in a way that is achievable in practice.

In this section, we review Ofgem's assumptions behind the definition of the SSES and SSEH notional companies. We show the following types of error:

- an error in the financeability assessment approach (section 5.1);
- errors in relation to the most likely efficient performance outcomes (section 5.2);
- an error in the most likely UM scenarios (section 5.3).

Correcting the errors in the financeability assessment approach helps us reveal an actual picture of the SSES and SSEH financeability. The errors in the level of the price control parameters cannot be corrected in this report, as they require Ofgem to set the price control parameters at a different level. In this report, we reflect the consequences of those errors on the SSES and SSEH financeability which Ofgem has failed to recognise. Finally, we show how using a different more likely UM scenario affects the ratios. Table 5.1 below summarises which Ofgem assumptions behind the notional company we have corrected.

We demonstrate that when those erroneous assumptions are corrected in order to reflect market evidence, the financial outlook of the SSES and SSEH notional networks worsens, with the financial ratios and credit ratings falling significantly below the target levels. This effect comes on top of the poor financeability demonstrated by Ofgem's own analysis, as discussed in section 4. Consistently with Ofgem's modelling, it also assumes that equity injections are available throughout the price control period.

Table 5.1 Assumptions underpinning Oxera’s financeability assessment, correcting for Ofgem’s unjustified definition of the SSEs and SSEH notional companies

Parameter	Oxera correction
Allowed return on equity	Ofgem assumption, adjusted for the change in the market data
Allowed cost of debt	Ofgem assumption, adjusted for the change in the market data
Actual efficient cost of debt	<p>A cost of debt achievable by the notional companies (section 5.2.3):</p> <ul style="list-style-type: none"> with the embedded debt book financed at the rate of the cost of debt allowance in the first year of the price control; with the new debt raised at the average yield of the Utilities index of the corresponding year; requiring an infrequent issuer premium due to their size.
Allowed TOTEX	Ofgem assumption
Actual efficient TOTEX	<p>Efficient network costs for RIIO-ED2 of £4.3bn for the two SSE networks in total, as assessed by SSE in its updated business plan submission, including a forecast of the efficient expenditure that SSE has proposed to fund via bespoke UMs (section 5.2.1)</p> <p>We also consider the impact on financeability of additional TOTEX funded through an increase in common UMs</p>
Net debt	Ofgem assumption for the opening net debt, although a different level of net debt may be implied by modelling following the corrections of other assumptions
Index-linked debt	10% of net debt is assumed to be CPIH-linked (and 0% RPI-linked), corresponding to the best available evidence on the DNOs’ level of index-linked debt (section 5.1).
Gearing	Ofgem assumption for the opening gearing, although a different level of gearing may be implied by modelling following the corrections of other assumptions
Inflation	Ofgem assumption
Dividend yield	Ofgem assumption
Capitalisation rate	Ofgem assumption
Depreciation	Ofgem assumption
BPI and ODIs	<p>No BPI rewards or penalties</p> <p>For ODIs, the midpoint between the maximum penalty and maximum reward RoRE range across common ODI-Fs, reflecting the downside skew in the distribution of incentive payments (section 5.2.2)</p>
Equity issuance transaction costs	Ofgem assumption

Note: PCDs—price control deliverables. ODIs—output delivery incentives. BPI—business plan incentive.

Source: Oxera based on Ofgem (2022), ‘RIIO-ED2 Draft Determinations—Finance Annex’, 29 June, para. 5.24 and Ofgem’s Draft Determinations PCFM.

In the rest of this section, we discuss how the following assumptions need to be corrected and what their isolated impact on the financeability assessment is (i.e. the impact of correcting a single assumption without correcting the rest of the analysis):

- the proportion of debt that is index-linked (section 5.1);
- the efficient level of TOTEX, including that proposed to be funded under bespoke UMs (section 5.2.1);
- the expected level of output delivery incentives (ODIs) performance (section 5.2.2);
- the efficient level of the cost of debt, that a notional company can be expected to achieve (section 5.2.3).
- the use of the SSE's view on the most likely UM scenario (section 5.3).

Section 5.4 shows the cumulative enhancing effect that Ofgem's assumptions had on the key credit metrics and the credit rating implied by Ofgem's credit rating simulator.

The analysis in the following sections also reflects the most recent market data. In particular, we have updated the cost of debt and the risk-free rate allowance models from an end-of-April cut-off date, used by Ofgem, to a cut-off date at the end of July (29 July 2022).

Table 5.2 shows the impact of the market data update on the key metrics under Ofgem base case TOTEX scenario, i.e. without Oxera assumption corrections. The interest rates have gone up since April 2022, implying a higher risk-free rate and higher cost of debt. However, the risk-free rate is more responsive to the increase in the interest rates than the cost of debt, given that the risk-free rate reflects current 20-year gilt yields, while the cost of debt is based on a 17-year trailing average of the Utilities index yields, which reflects historical lower interest rates. This means that the indexed cost of equity allowance increases by more than the modelled notional cost of debt, which improves key metrics.

Table 5.2 The isolated effect of updating the cut-off date for the risk-free rate and the cost of debt allowance on Ofgem's assessment of the SSES and SSEH financeability

Ratios	SSES		SSEH	
	Ofgem (29 April 2022)	Updated (29 July 2022)	Ofgem (29 April 2022)	Updated (29 July 2022)
Net debt/RAV	61.8%	61.6%	61.8%	61.7%
AICR (x)	1.39	1.41	1.40	1.42
Nominal PMICR (x)	2.13	2.15	2.15	2.17
FFO/net debt	11.8%	11.9%	11.5%	11.6%
RCF/net debt	9.8%	10.0%	9.5%	9.6%
RoRE	4.75%	4.90%	4.76%	4.90%
Required equity issuance (£m) ¹	–	–	148	145
Simulated credit rating	Baa1	A3	Baa1	Baa1

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

5.1 An error in the financeability assessment approach

This sub-section focuses on the error in Ofgem's approach to assessing financeability. In particular, we focus on the assumed proportion of the index-

linked debt in the financing structure of the notional efficient company. Correcting this reveals a more accurate picture of the notional SSEs and SSEH companies' financeability. Importantly, our analysis reveals that Ofgem's error leads to overestimates of financeability metrics for the two notional companies.

In its modelling of the notional company for the Draft Determinations, Ofgem assumes that 25% of debt is index-linked to CPIH inflation. Ofgem has not disclosed the data from the business plan submissions which likely contain information about the networks' current proportions of index-linked debt. Therefore, there is no clear evidence to assess whether Ofgem's assumption is appropriate. However, the best evidence that we collected shows that 25% is too high and that 10% is more appropriate for electricity distribution networks. We provide our reasoning below.

Ofgem does not provide any justification for its assumption in the Draft Determinations, business plan guidance or SSMD. The only justification that we have identified is a reference in the SSMD that 25% was a RIIO-1 modelled assumption.³⁶ We are also aware that Ofgem used 25% as a working assumption in the RIIO-GD/T2 SSMD, where the reasoning was two-fold: it being consistent with RIIO-1 and with the Regulatory Financial Performance Reporting (RFPR) data.

As a working assumption, we have included 25% inflation-linked debt in the draft business plan financial model (consistent with RIIO-1). This is also consistent with RFPR data on the level of inflation-linked debt across the industry.³⁷

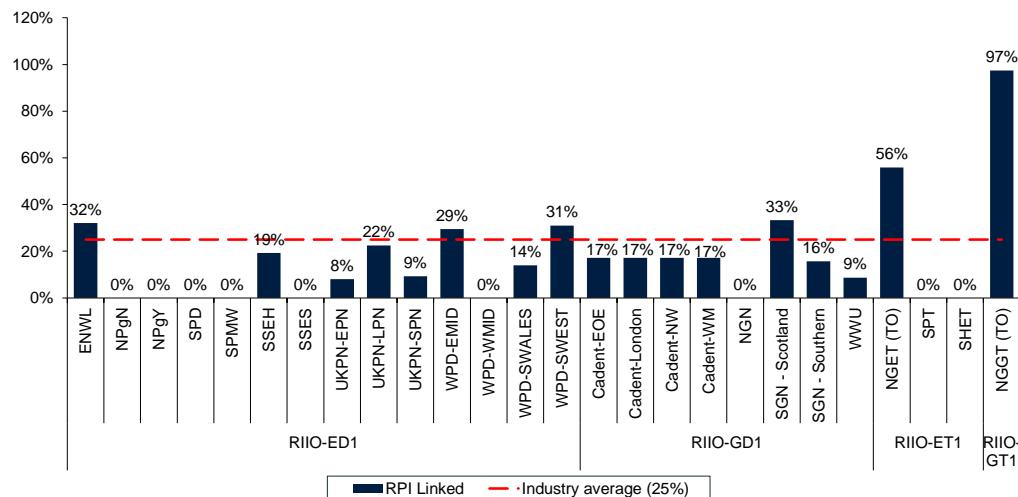
The RFPR data that Ofgem referred to was from 2017/18, which is the most recent RFPR data pack that contains information about the proportion of index-linked debt. Based on that data, distribution and transmission networks on average had 25% index-linked debt in 2017/18 (see Figure 5.1 below).

While Figure 5.1 shows that the average index-linked debt in the industry is around 25%, there is a wide range of index-linked debt among the companies, and the average of 25% is distorted by the inclusion of National Grid Gas Transmission (NGGT), which had a particularly high proportion of index-linked debt, according to this data (97% in 2017/18). Moreover, there was a wide range of index-linked debt among the networks, and nine networks did not have any index-linked debt, six of which were electricity distribution networks.

³⁶ Ofgem (2022), 'Decision - RIIO-ED2 Sector Specific Methodology Decision: Annex 3 Finance', 11 March, Table 4.

³⁷ Ofgem (2019), ['Decision - RIIO-2 Sector Specific Methodology Decision – Finance'](#), 24 May, para. 4.109.

Figure 5.1 Energy networks' index-linked debt proportions in 2017/18



Note: The industry average is calculated as the weighted average of RPI-linked debt as a proportion of total net debt in 2017/18. In 2017/18 CPIH-index linked debt was equal to zero for all companies.

Source: Oxera analysis based on RFPR 2017/18 data.

Based on the 2017/18 RFPR data discussed above and presented in Figure 5.1, which is the best available data disclosed by Ofgem, the median index-linked debt in the electricity distribution sector is 8% and the mean is 11.7%. We consider that given the differences between energy networks' proportions of index-linked debt in different sectors, it is wrong for Ofgem to set the assumption for electricity distribution networks based on the average estimate across the industry. Therefore, accounting for both median and mean estimates for electricity distribution networks, we choose an assumption of 10% as the most appropriate one.

The assumption of a lower proportion of index-linked debt in electricity distribution is further supported by Moody's 2022 commentary:

[...] most electricity distribution groups only have a modest proportion of inflation-linked debt, with SP, SSE and WPD all having a level well below regulatory assumptions (25% in both RIIO-ED1 and RIIO-ED2 but all RPI in RIIO-ED1 and all CPIH in RIIO-ED2).³⁸

To assess the impact of revising Ofgem's assumption, we have recalculated the credit ratios for the SSES and SSEH notional companies keeping all of Ofgem's assumptions unchanged, and changing only the proportion of index-linked debt (from 25% to 10%). Our analysis shows that the assumed level of index-linked debt has a material influence on the financeability assessment. The effect on notional company financeability is to reduce AICR from 1.41x and 1.42x to 1.31x and 1.32x for SSES and SSEH respectively. These levels are below Moody's guidance for a Baa1 credit rating.³⁹

This highlights the importance of the assumption for the proportion of index-linked debt for electricity distribution companies Table 5.3 shows all key ratios.

³⁸ Moody's (2022), 'Draft decisions for RIIO-ED2 slightly tougher than expected', 1 July, p. 7.

³⁹ The AICR metric declines when reducing the proportion of index-linked debt due to decreasing FFO (the lower the proportion of index-linked debt, the higher the cash interest expense, which is deducted from FFO).

Table 5.3 The isolated effect of applying an appropriate assumption on the proportion of index-linked debt on the SSEs and SSEH financeability

Ratios	SSES		SSEH	
	Ofgem base case TOTEX (25% ILD)	Oxera (10% ILD)	Ofgem base case TOTEX (25% ILD)	Oxera (10% ILD)
Net debt/RAV	61.6%	61.5%	61.7%	61.7%
AICR (x)	1.41	1.31	1.42	1.32
Nominal PMICR (x)	2.15	2.17	2.17	2.19
FFO/net debt	11.9%	11.7%	11.6%	11.3%
RCF/net debt	10.0%	9.7%	9.6%	9.3%
RoRE	4.9%	4.9%	4.9%	4.9%
Required equity issuance (£m) ¹	–	–	145	143
Simulated credit rating	A3	Baa1	Baa1	Baa1

Note: ILD—index-linked debt. The ratios in Ofgem base case TOTEX scenario do not match the ones in the Draft Determinations because we have updated the cut-off date from 29 April 2022 to 29 July 2022.¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

5.2 Errors in the price control parameters

In this sub-section, we outline the errors that Ofgem makes when setting its proposed price control parameters. These result in the networks being underfunded. We also demonstrate that as Ofgem has not corrected these errors when undertaking its financeability assessment, it overstates the strength of the financeability metrics.

5.2.1 TOTEX underfunding on baseline TOTEX and bespoke UMs

We start by outlining the issue of underfunding on the baseline TOTEX. Then we discuss Ofgem's rejection of SSE's proposed bespoke UMs. We finish by highlighting the impact of accounting for these on the financeability assessment.

Underfunding on baseline TOTEX

The RIIO-2 Draft Determinations disallow a significant proportion of the forecast expenditure in the electricity distribution networks' business plans. This partly reflects cost reductions that are linked to a reduction in the assumed level of activity/volumes delivered by the networks. However, some of the cost reductions result from Ofgem assuming that the networks are able to deliver greater levels of efficiency than built into their plans.

Ofgem has reduced SSEN's TOTEX allowance by around 22% (22.7% for SSEH and 22.2% for SSES), due to cost reductions and Ofgem's 1.2% 'ongoing efficiency challenge' over the ED2 period.⁴⁰ The degree of regulatory challenge is significantly higher than in previous price reviews.

In Table 5.4 below, we provide details of the TOTEX submitted for the RIIO-ED2 Draft Determinations and the RIIO-ED1 Final Determinations stages, for both SSEN and on average across the sector. As the table shows, in RIIO-

⁴⁰ Ofgem (2022), 'RIIO-ED2 Draft Determinations — Core Methodology Document', 29 June, Table 21.

ED2, Ofgem proposes materially larger reductions to the submitted TOTEX for both SSEN and all Groups of DNOs compared to RIIO-ED1.

Table 5.4 Reductions to the submitted TOTEX (£m)

	ED1 Final Determinations	ED2 Draft Determinations
SSEN	-5.0%	-22.3%
Sector Total	-5.2%	-17.0%

Note: Allowances in ED1 are based on eight years, while allowances in ED2 based on five years.

Source: Oxera analysis, based on Ofgem data from Ofgem (2014), '[RIIO-ED1: Draft determinations for the slowtrack electricity distribution companies](#)', p. 13; and Ofgem (2022), '[RIIO-ED2 Draft Determinations – Core Methodology Document](#)', p. 222.

A full review of Ofgem's approach to cost assessment is provided in Oxera's reports prepared for SSEN.⁴¹ These reports show that Ofgem's process, modelling principles and methods for determining allowed TOTEX materially underestimate SSEN's allowances due to issues with:

- pre-modelling adjustments: including rejection of sparsity as a regional factor, not fully allowing for company-specific cost adjustment due to islands and not making a pre-modelling adjustment to account for higher labour costs in Scotland;
- disaggregated modelling: including failing to include post-modelling reverse adjustments for HVP and issues with different levels of aggregation for normalised adjusted costs;
- TOTEX models: including the unjustified equal weighting being placed on HPs and EVs in the cost driver capturing the effect of low carbon technologies;
- catch-up efficiency: including shifting the catch-up efficiency challenge from a 75th percentile benchmark to an 85th percentile benchmark;
- ongoing efficiency: use of an ongoing efficiency target of 1.2% which is inconsistent with evidence of TFP growth observed in other sectors.

For these reasons, we consider that Ofgem has provided insufficient allowances to cover efficient expenditure in ED2.

In order to assess the impact that underfunding the notional company would have on financeability, we have modelled a scenario in which the networks' outturn TOTEX is equal to the figures provided by SSE in their ED2 business plan update in April 2022 (excluding TOTEX covered by UMs). Based on SSE's updated business plan submission TOTEX estimates, SSES and SSEH are underfunded by £621m and £292m respectively, relative to Ofgem's proposed baseline allowances.

Bespoke uncertainty mechanisms underfunding

In RIIO-ED2, Ofgem allowed companies to propose 'bespoke' UMs as part of their business plans. SSEN proposed 11 bespoke UMs,⁴² eight of which were rejected.⁴³

⁴¹ Oxera (2022), 'Review of the cost assessment in Ofgem's RIIO-ED2 Draft Determinations', 23 August; Oxera (2022), 'Review of Ofgem's RIIO-2 Draft Determinations proposal on ongoing efficiency', August.

⁴² Three of the 11 UMs related to subsea cables.

⁴³ Ofgem (2022), 'RIIO-ED2 Draft Determinations – SSEN Annex', pp. 41–43.

While Ofgem has rejected most of SSEN's proposals for bespoke UMs, it has not remediated this by increasing the baseline ex ante allowances to offset this. This is despite the fact that SSEN considers volumes will need to be delivered across these areas during ED2, at a cost to the two networks.

The implication is that by rejecting most of SSEN's proposed bespoke UMs, SSES and SSEH will be underfunded in these areas by £146m and £122m respectively over ED2.

Impact of underfunding on financeability

Table 5.5 below outlines the impact which this underfunding would have on key credit metrics and required equity injection, without correcting any other Ofgem errors. By underfunding the networks on baseline TOTEX allowances and not providing additional allowances to offset the impact of rejecting the majority of bespoke UMs, the AICRs for SSES and SSEH fall to 1.06x and 1.26x respectively, and the simulated ratings do not meet the target threshold of Baa1.

Table 5.5 The isolated effect of increasing the actual TOTEX, to the business plan level, and accounting for the expenditure proposed under bespoke UMs on Ofgem assessment of the SSES and SSEH financeability

Ratios	SSES		SSEH	
	Ofgem base case TOTEX	TOTEX underfunding	Ofgem base case TOTEX	TOTEX underfunding
Net debt/RAV	61.6%	64.9%	61.7%	64.4%
AICR (x)	1.41	1.06	1.42	1.26
Nominal PMICR (x)	2.15	1.81	2.17	2.00
FFO/net debt	11.9%	9.8%	11.6%	10.3%
RCF/net debt	9.9%	7.9%	9.6%	8.4%
RORE	4.9%	2.9%	4.9%	4.0%
Required equity issuance (£m) ¹	–	579	145	129
Simulated credit rating	A3	Baa3	Baa1	Baa2

Note: The ratios in Ofgem base case TOTEX scenario do not match the ones in the Draft Determinations because we have updated the cut-off date from 29 April 2022 to 29 July 2022.¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

5.2.2 Output delivery incentives asymmetry

ODIs tie rewards or penalties to the delivery of specific outputs, which are linked to the DNOs' performance in terms of customer service, network reliability or network flexibility. For the RIIO-ED2 regulatory period, Ofgem proposes the use of seven common financial ODIs (ODI-F). These are summarised in Table 5.6 below.

Table 5.6 Common ODI-Fs in RIIO-ED2

	Type	Max reward	Max penalty	Symmetry
		(% of RoRE)	(% of RoRE)	
Customer Satisfaction Survey	Common	0.40%	-0.40%	Symmetric
Complaints Metric	Common	0.00%	-0.20%	Asymmetric
Time to Connect	Common	0.15%	-0.15%	Symmetric
Major Connections Incentive	Common	0.00%	-0.35%	Asymmetric
Consumer Vulnerability Incentive	Common	0.20%	-0.20%	Symmetric
DSO	Common	0.20%	-0.20%	Symmetric
Interruptions Incentive Scheme	Common	1.00%	-2.50%	Asymmetric
Total for common ODIs		1.95%	-4.00%	

Note: RoRE—return on regulated equity.

Source: Oxera, based on Ofgem data.

As shown in the table above, Ofgem's proposed balance of rewards and penalties related to ODIs is asymmetric (i.e. it implies a greater risk of losses than rewards for the DNOs). More specifically, the overall balance of rewards and penalties is skewed downwards, as the maximum allowed penalty (-4.0% of RoRE) is 2.05% of RoRE higher than the maximum allowed reward (+1.95% of RoRE). This large downside skew is driven by three of the common ODIs having greater potential penalties than rewards.

Nevertheless, despite the considerable downside skew embedded within the common ODI package, Ofgem presents the results of its financeability assessment assuming its Draft Determinations positions on incentives (i.e. Ofgem assumes that DNOs' outturn performance equals their targets).⁴⁴ This is misleading.

During a control period, even if DNOs meet the targets set by the regulator on average, some DNOs will underperform while others will outperform. Even if the performance of the DNOs is distributed symmetrically around the targets, downside skew in the distribution of rewards and penalties will mean that the expected return to DNOs from ODI incentive payments will be negative.

To reflect that the expected performance on ODIs will be negative due to the downside skew, we assume that each DNO earns the midpoint between the maximum allowed penalty (-4.0% of RoRE) and maximum allowed reward (+1.95%). Table 5.7 shows the isolated impact of correcting the ODI assumption on the financeability for SSES and SSEH (i.e. without the impact of correcting other Ofgem assumptions): AICR falls to 1.22 for SSES and 1.23 for SSEH.

Table 5.7 The isolated effect of using midpoint ODI payments on Ofgem assessment of the SSES and SSEH financeability

Ratios	SSES		SSEH	
	Ofgem base case TOTEX	Midpoint ODI payments	Ofgem base case TOTEX	Midpoint ODI payments
Net debt/RAV	61.6%	62.8%	61.7%	62.1%
AICR (x)	1.41	1.22	1.42	1.23
Nominal PMICR (x)	2.15	1.96	2.17	1.99

⁴⁴ Ofgem (2022), 'RIIO-ED2 Draft Determinations — Finance Annex', 29 June, p. 72.

FFO/net debt	11.9%	11.0%	11.6%	10.8%
RCF/net debt	10.0%	9.1%	9.6%	8.8%
RoRE	4.9%	3.8%	4.9%	3.9%
Required equity issuance (£m) ¹	–	–	145	167
Simulated credit rating	A3	Baa1	Baa1	Baa2

Note: The ratios in Ofgem base case TOTEX scenario do not match the ones in the Draft Determinations because we have updated the cut-off date from 29 April 2022 to 29 July 2022.

¹ Equity issuance do not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

5.2.3 Cost of debt underfunding

In this section, we discuss two aspects of Ofgem's cost of debt methodology, which do not reflect the cost of debt that can be reasonably achieved by a notional company. We show that Ofgem's assumptions erroneously enhance the appearance of financeability.

Infrequent issuer premium

In the RIIO-ED2 Draft Determinations, Ofgem proposes to grant a 6bps premium on the cost of debt allowance to those networks that expect debt issuance sizes to be below the £150m annual threshold due to their smaller-than-average RAV and/or lower-than-average RAV growth.⁴⁵ Ofgem is clear about referring to notional licensees:

Where the **notional licensee** is not issuing debt equal to the £150m threshold each year, we assume that the licensee may incur additional costs relative to a large (frequent) issuer.⁴⁶ [emphasis added]

Ofgem awarded this allowance to three networks: LPN, NPgN and WPD SWALES.

Our analysis clearly shows that both SSEH and SSES notional companies have the correct characteristics to qualify for the 6bps infrequent issuer premium. In particular, SSES and SSEH's average annual debt issuances in Ofgem base case TOTEX scenario are forecast at £61m and £78m respectively.⁴⁷ Both of these estimates are below the £150m annual debt issuance threshold.

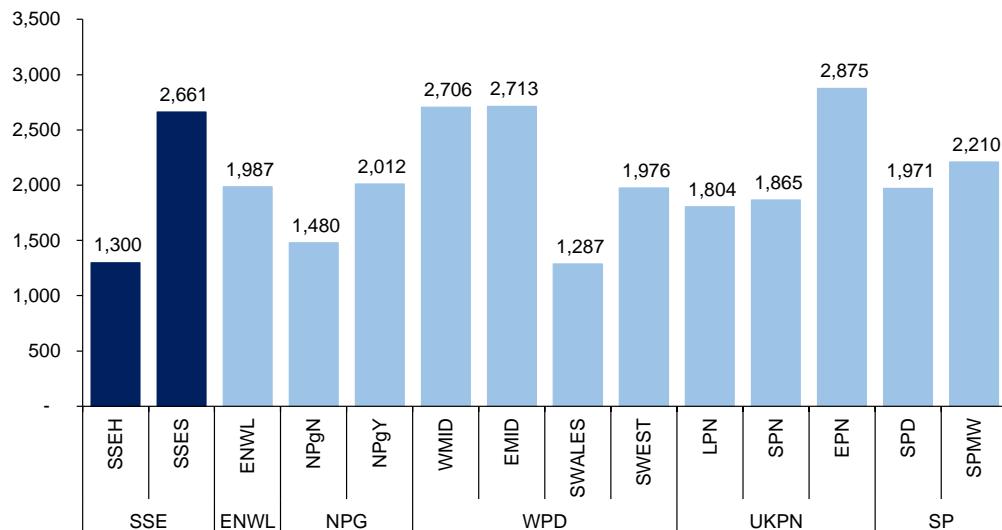
SSEH has the second smallest forecast opening ED2 RAV relative to other electricity distribution networks, as shown in Figure 5.2 below. Since larger networks, such as LPN and NPgN, qualified for the premium, it is inconsistent not to provide the same premium to SSEH.

⁴⁵ Ofgem (2022), 'RIIO-ED2 Draft Determinations – Finance Annex', June, para. 2.33.

⁴⁶ Ofgem (2022), 'RIIO-ED2 Draft Determinations – Finance Annex', June, para. 2.32.

⁴⁷ Calculated as the average yearly difference between closing net debt before interest and taxes and opening net debt. The opening balance is after equity issuance and transfers.

Figure 5.2 Opening ED2 RAV based on Ofgem's Draft Determinations PCFM (£m)



Note: All numbers in 2020/21 prices (£m).

Source: Oxera analysis of Ofgem's Draft Determinations PCFM.

Allowed cost of debt compared to the actual cost of debt of the notional company

In the PCFM, Ofgem assumes that the notional company's actual cost of debt ('notional cost of debt') equals the cost of debt allowance in terms of CPIH-real rates ('allowed cost of debt'). This assumption leads to inaccurate results, which we explain and correct in this section.

Ofgem's proposed allowed cost of debt is based on the 17-year trailing average of the Utilities index yields. Two assumptions underpin this methodology:

- using a 17-year trailing average assumes that every year of the price control period, 1/17th of the net debt balance is refinanced and that it is refinanced at the forecast Utilities index;
- no additional debt is raised during the control period.

Annual allowance rates, for fixed and index-linked debt, are then applied to the average net debt to determine the interest payments (in £m) for every year of the control period.

This approach does not account for the actual debt requirements that the notional companies will have over the price control period, as implied by the PCFM. We correct this in our modelling.

To do so, we make the following assumptions.

- We assume that each company's embedded debt book, as at the start of ED2, has an interest rate equal to Ofgem's allowance in the first year of the price control (i.e. the 17-year trailing average in 2022/23).⁴⁸

⁴⁸ We chose the first year, rather than a year preceding the price control, due to a two-year lag in the cost of debt allowance—e.g. the cost of debt allowance for 2023/24 is based on the data up to November 2022, which we consider to be sufficiently well-aligned with the cost of embedded debt at the start of ED2.

- Any amount that matures—which we assume to be 1/17th of the initial embedded debt book each year, consistently with the structure of the allowance—is refinanced at the average yield of the Utilities index of that year.
- We assume that any new debt to fund RAV growth is raised at the same rate, i.e. at the average yield of the Utilities index of that year.

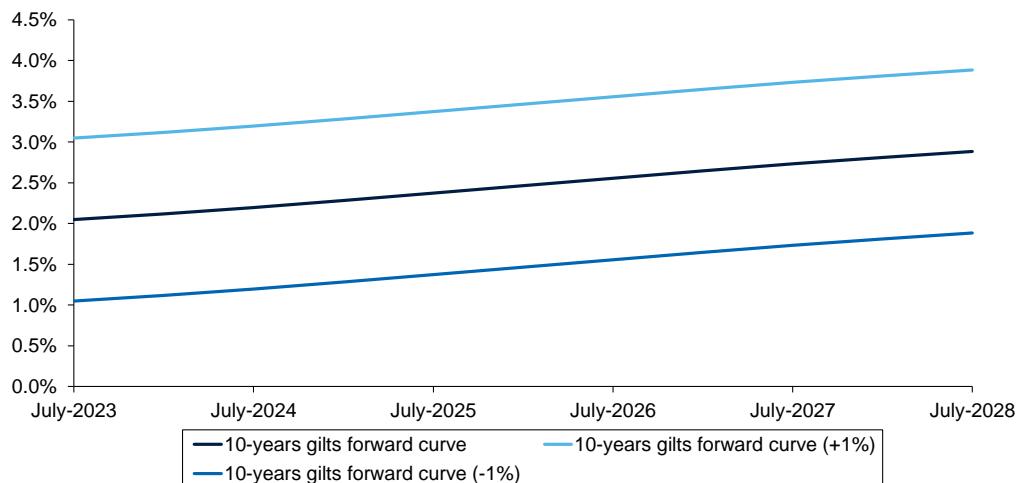
In this way, we test whether Ofgem's allowed cost of debt is sufficient to fund embedded and new debt for a notionally financed SSES and SSEH.

We compare Ofgem's allowed cost of debt rates, estimated using the 17-year trailing average of the Utilities index yields, with the notional cost of debt in three interest rate scenarios, proposed by Ofgem in the Sector Specific Methodology Decision (SSMD):⁴⁹

- the base-case interest-rate scenario, using forecast yields for the Utilities index, as per Ofgem's methodology, which is based on 10-year nominal gilt forward curve;
- the high interest-rate scenario, assuming a +1% increase in the Utilities index yields compared to the base-case scenario;
- the low interest-rate scenario, assuming a -1% reduction in the Utilities index yields compared to the base-case scenario.

Figure 5.3 below shows the forward curves in three scenarios described above. The Utilities index is then forecast by adding a fixed spread on top of these forward curves.⁵⁰ As Figure 5.3 shows, interest rates are expected to increase.

Figure 5.3 10-year nominal gilts forward curve in the base-case, high and low interest-rate scenarios



Source: Oxera analysis of Ofgem's WACC allowance model. The cut-off date for the analysis is 29 July 2022.

Table 5.8 below compares Ofgem's allowed cost of debt rates with the notional cost of debt in three interest rate scenarios. The table shows that the notional

⁴⁹ Ofgem (2021), 'RIIO-ED2 Sector Specific Methodology Decision: Annex 3 Finance', 11 March, para. 2.45 and Table 2.

⁵⁰ As per Ofgem's methodology, the spread is based on a three-year historical average spread between 10-year nominal gilt yields and the Utilities index yields.

company would be underfunded by Ofgem's allowed cost of debt unless interest rates fall—see the negative values in the table. In our financeability modelling, we use the base-case interest-rate scenario.

Table 5.8 Comparison of the average allowed and notional cost of debt over the ED2 price control period

	SSES			SSEH		
	Base case	High interest rate	Low interest rate	Base case	High interest rate	Low interest rate
Allowed cost of debt	2.28%	2.38%	2.18%	2.28%	2.38%	2.18%
Notional cost of debt	2.43%	2.69%	2.18%	2.43%	2.72%	2.13%
Out- (under-) performance	-0.15%	-0.31%	0.00%	-0.15%	-0.34%	0.05%

Note: The numbers are based on Ofgem base case TOTEX scenario. The allowed cost of debt numbers do not match the ones in the Draft Determinations because we have updated the cut-off date from 29 April 2022 to 29 July 2022.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

Impact on financeability

We have tested the impact on financeability ratios of using the notional cost of debt modelled above and applying the 6bps infrequent issuer premium to the actual cost of debt of the notional SSES and SSEH. Table 5.9 below summarises the results for the two SSE networks—the table shows the isolated impact of the correction to the cost of debt assumption, i.e. without the impact of correcting other Ofgem assumptions. Accounting for the shortfall in funding for the notional cost of debt results in weaker credit metrics for both companies. For example, the AICR declines from 1.41x and 1.42x to 1.39x for both companies. Assuming the high interest-rate scenario, AICR will decline even further to 1.36x for both networks (in the low interest-rate scenario, AICR will be 1.42x and 1.43x for SSES and SSEH respectively).

Table 5.9 The isolated effect of correctly modelling the notional cost of debt (including the infrequent issuer premium) instead of using the allowed cost of debt assumption on Ofgem assessment of the SSES and SSEH financeability

Ratios	SSES		SSEH	
	Ofgem base case TOTEX	Oxera cost of debt	Ofgem base case TOTEX	Oxera cost of debt
Net debt/RAV	61.6%	61.6%	61.7%	61.7%
AICR (x)	1.41	1.39	1.42	1.39
Nominal PMICR (x)	2.15	2.10	2.17	2.12
FFO/net debt	11.9%	11.9%	11.6%	11.6%
RCF/net debt	10.0%	9.9%	9.6%	9.6%
RoRE	4.9%	4.9%	4.9%	4.9%
Required equity issuance (£m) ¹	—	—	145	145
Simulated credit rating	A3	A3	Baa1	Baa1

Note: The ratios in Ofgem base case TOTEX scenario do not match the ones in the Draft Determinations because we have updated the cut-off date from 29 April 2022 to 29 July 2022.

¹ Equity issuance do not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

5.3 Most likely UMs scenario

This subsection focuses on the issues with Ofgem's assumptions regarding likely outturn TOTEX in ED2, taking account of expenditure connected to UMs over the period. This is distinct from the underfunding errors discussed in section 5.2.1 above.

In its Draft Determinations, Ofgem proposes a wide range of common UMs for RIIO-ED2. These enable Ofgem to adjust a network company's allowance in response to developments during the control period. Ofgem's common UMs include:

- volume drivers: which adjust allowances in line with the actual volumes of work delivered, where the volume of certain types of work that will be required over the price control is uncertain, but where the cost of each unit is assumed to remain stable;
- re-opener mechanisms: to decide, within a price control period, on additional allowances to deliver a project or activity once there is more certainty on the needs case, project scope or quantities;
- cost pass-through mechanisms: to adjust allowances for costs incurred by the DNO over which they have limited control, and that Ofgem considers the full cost of which should be recoverable;
- indexation: to provide network companies and consumers some protection against the risk that outturn prices are different to those that were forecast when setting the price control;
- use-it-or-lose-it (UIOLI) allowances: to adjust allowances where the need for work has been identified, but the specific nature of work or costs are uncertain.

To ensure that companies are not funded to deliver work which may later be deemed unnecessary, Ofgem does not provide TOTEX allowances for investments where there is still considerable uncertainty regarding the need, scope and costs of the projects. Specifically, Ofgem says:

We are proposing to set baseline totex allowances for the DNOs only where we are satisfied on the need for and certainty of the proposed work, and where there is sufficient certainty on the efficient cost of delivery... Where uncertainty remains, we are proposing to use a range of UMs to manage this during the RIIO-ED2 price control period. UMs allow us to adjust a network company's allowance in response to changing developments during the price control period.⁵¹

Ofgem reports the outcome of its financeability assessment on the basis of its base case TOTEX scenario. However, in recognition that additional expenditure connected to UMs may be incurred over the period, Ofgem also reports the results of its financeability assessment on the basis of a high case TOTEX scenario:

As there could be additional totex allowed for through Uncertainty Mechanisms we considered it prudent to also consider an illustrative higher totex case for

⁵¹ Ofgem (2022), 'RIIO-ED2 Draft Determinations — Overview Document', 29 June, p. 37.

financeability purposes (resulting ratios also provided in Table 20) in addition to the baseline totex case. This does not represent a forecast or indication of re-opener allowances but is a case that could be considered for illustrative purposes.⁵²

Ofgem then shows how under this high case TOTEX scenario:

- the adjusted AICR and FFO/net debt ratios deteriorate for most companies;
- eight DNOs, including SSEH and SSES, suffer a ratings downgrade (relative to the credit rating they have under the base case TOTEX scenario);
- three DNOs, including SSEH and SSES, have credit ratings below the target rating of Baa1 (i.e. Baa2).⁵³

We agree that there is considerable uncertainty regarding the scope of work companies should undertake during the ED2 period. Indeed, this is why Ofgem has proposed using UMs. We also acknowledge that Ofgem's high case TOTEX scenario does not represent an official Ofgem forecast.

However, we consider that Ofgem base case TOTEX scenario does not represent the most likely level of expenditure by an efficient company over the period either. As new information comes to light during ED2, it is more likely than not that additional expenditure will be needed from companies to deliver additional volumes connected with UMs. Indeed, this was Ofgem's rationale for modelling a high case TOTEX scenario in the first place.

To correct this error, our modelling uses SSE's estimates of the expected levels of expenditure connected to common UMs over the ED2 period. This results in additional costs of £234m and £422m being incurred by SSES and SSEH respectively, compared to what Ofgem assumes in the base case TOTEX scenario.⁵⁴ Table 5.3 below summarises how including this expenditure—and the corresponding allowances—in the analysis affects key financial metrics for the two companies (excluding the impact which correcting other Ofgem errors would have).

⁵² Ofgem (2022), 'RIIO-ED2 Draft Determinations — Finance Annex', 29 June, p. 72.

⁵³ Ofgem (2022), 'RIIO-ED2 Draft Determinations — Finance Annex', 29 June, Table 20.

⁵⁴ Unlike costs discussed in section 5.2.1, these are assumed to be allowed for recovery via UMs.

Table 5.3 The isolated effect of including SSE's view on the common UMs TOTEX on Ofgem's assessment of the SSES and SSEH financeability

Ratios	SSES		SSEH	
	Ofgem base case TOTEX	Common UM TOTEX	Ofgem base case TOTEX	Common UM TOTEX
Net debt/RAV	61.6%	63.2%	61.7%	64.6%
AICR (x)	1.41	1.38	1.42	1.37
Nominal PMICR (x)	2.15	2.11	2.17	2.11
FFO/net debt	11.9%	11.2%	11.6%	10.1%
RCF/net debt	10.0%	9.3%	9.6%	8.2%
RoRE	4.9%	4.8%	4.9%	4.8%
Required equity issuance (£m) ¹	–	–	145	266
Simulated credit rating	A3	Baa1	Baa1	Baa2

Note: The ratios do not match the ones in the Draft Determinations because we have updated the cut-off date from 29 April 2022 to 29 July 2022. ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem's Draft Determination PCFM.

5.4 Summary of the review of Ofgem's assumptions behind its definition of the notional company

In this section, we have reviewed Ofgem's assumptions behind the definition of the SSES and SSEH notional companies. We have started from reviewing the errors in the assumptions related to Ofgem's financeability analysis methodology.

- We estimate an appropriate level of index-linked debt for the distribution sector to be at 10% instead of Ofgem's unjustified 25% assumption.

In addition to the methodological errors, we have discussed the mistakes related to the elements of the price control package and, in particular, that they are not justified on the basis of the best available evidence.

- On TOTEX, we show the impact of relying on SSE's rather than Ofgem's assessment of the efficient level of TOTEX for SSES and SSEH.
- On ODIs, we reflect that the expected value of earnings for all DNOs during the period is likely negative, given the downside skew in the distribution of incentive payments, and use the midpoint between the maximum penalty and maximum reward RoRE range across common ODI-Fs as the expected performance.
- On the cost of debt, we first included the 6bps of infrequent issuer premium in the assumed debt financing costs for both companies. This follows from our analysis, which shows that both SSES and SSEH notional companies are expected to issue less than £150m of debt per year and therefore notional companies meet the criteria to qualify for an infrequent issuer.
- We then apply a more accurate modelling of the debt financing costs of the notional company, to reflect the fact that Ofgem's allowance is not sufficient to cover the cost of debt estimated for a notional electricity distribution company.

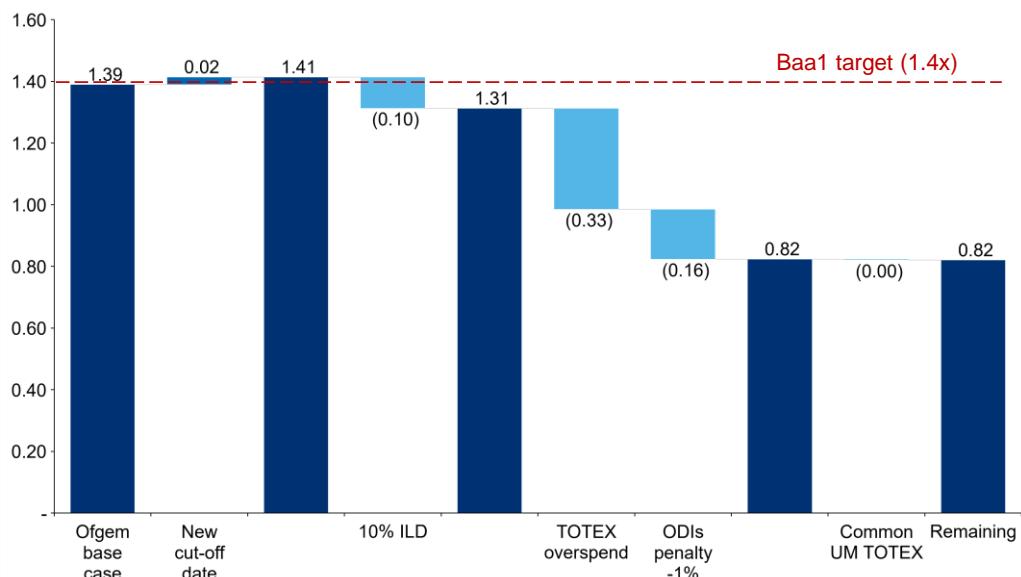
Finally, we discussed that the base case TOTEX scenario does not represent the most likely level of outturn TOTEX.

- We use a more realistic TOTEX assumption in the modelling, reflecting SSE's expectations. This follows from our assessment that Ofgem base case TOTEX scenario does not reflect the most likely level of efficient expenditure needed over the ED2 period.

Figure 5.4 to Figure 5.7 and Table 5.10 represent the cumulative impacts of these corrections on key credit metrics for the notional companies. Taking the corrections together, we see that financeability for both companies is much weaker compared to the level estimated by Ofgem. In particular, the AICR declines from 1.41x (after the cut-off date update) to 0.82x and from 1.42x (after the cut-off date update) to 0.84x for SSES and SSEH respectively. Meanwhile, the FFO/net debt declines from 11.9% to 8.4% and from 11.6% to 7.6% for SSES and SSEH respectively, also starting from the FFO/net debt level after the cut-off date update. The simulated credit rating declines from A3 to Ba1 and from Baa1 to Baa3 for SSES and SSEH respectively.

This demonstrates how the assumptions used by Ofgem in its assessment have served to provide a misleading view of financeability. Once these assumptions are aligned with market and sector-specific evidence, in line with best practice, the underlying financeability for both SSE DNOs is substantially weaker. Both companies are well below the Baa1 threshold for AICR, and the general Baa sub-rating for FFO/net debt.

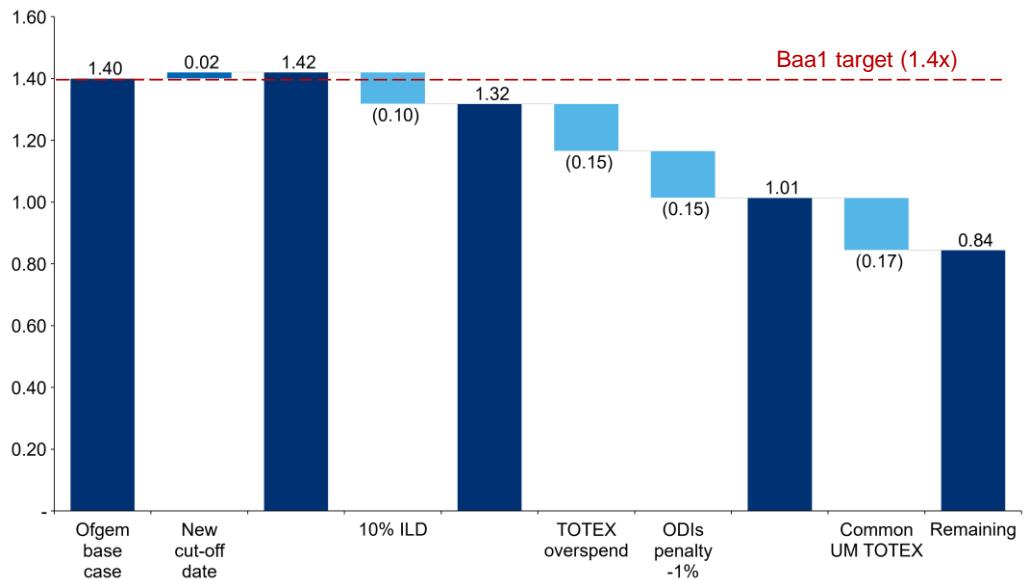
Figure 5.4 AICR with cumulative assumption corrections for the notional SSES



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022. We do not show the impact of correcting the cost of debt in the figure, assuming that the cost of debt is fully funded for the scope of this representation.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

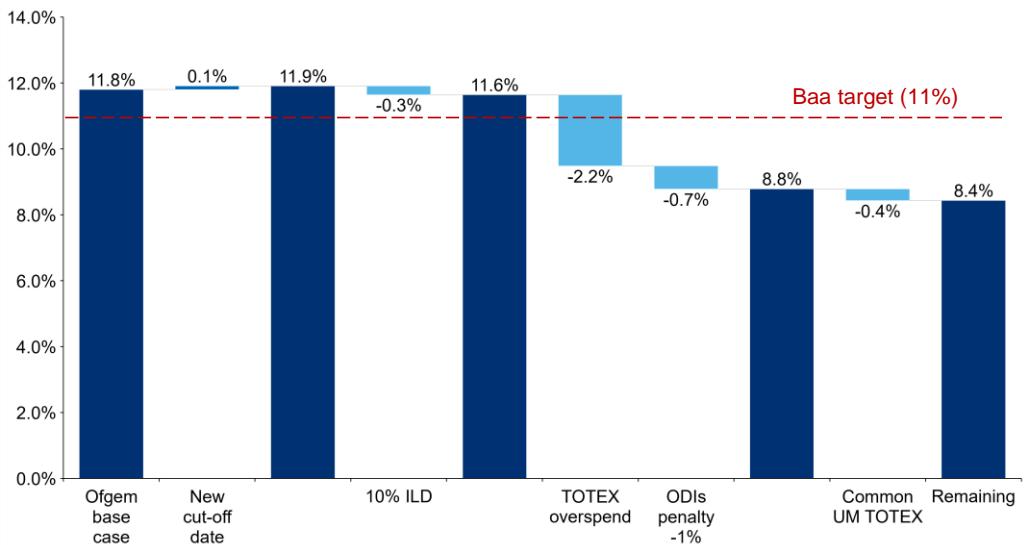
Figure 5.5 AICR with cumulative assumption corrections for the notional SSEH



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022. We do not show the impact of correcting the cost of debt in the figure, assuming that the cost of debt is fully funded for the scope of this representation.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

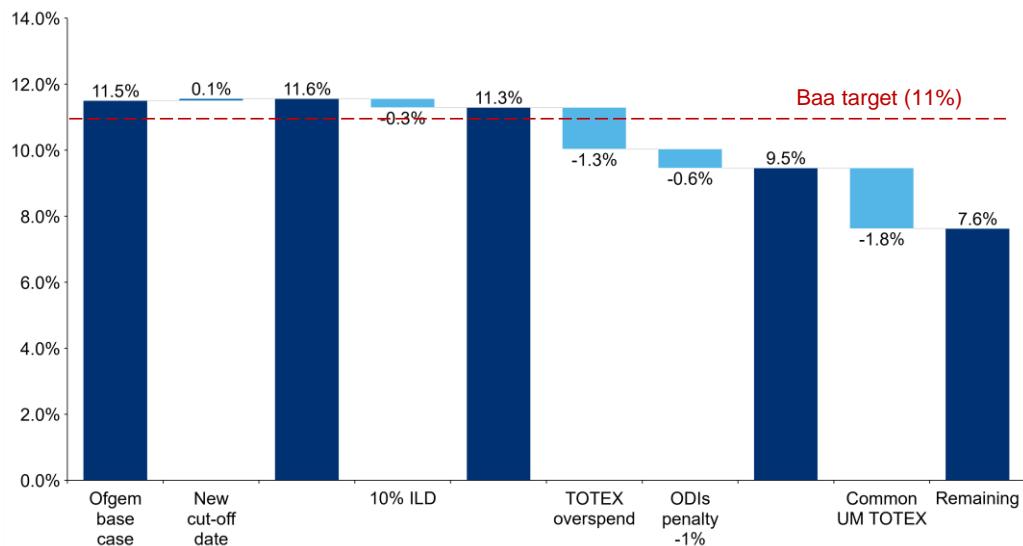
Figure 5.6 FFO/net debt with cumulative assumption corrections for the notional SSES



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022. We do not show the impact of correcting the cost of debt in the figure, assuming that the cost of debt is fully funded for the scope of this representation.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

Figure 5.7 FFO/net debt with cumulative assumption corrections for the notional SSEH



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022. We do not show the impact of correcting the cost of debt in the figure, assuming that the cost of debt is fully funded for the scope of this representation.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

Table 5.10 Impact of applying all appropriate assumptions on the SSES and SSEH notional companies' financeability

Ratios	SSES		SSEH	
	Ofgem base case TOTEX	Cumulative Oxera corrections ²	Ofgem base case TOTEX	Cumulative Oxera corrections ²
Net debt/RAV	61.6%	65.9%	61.7%	66.7%
AICR (x)	1.41	0.82	1.42	0.84
Nominal PMICR (x)	2.15	1.67	2.17	1.71
FFO/net debt	11.9%	8.4%	11.6%	7.6%
RCF/net debt	10.0%	6.6%	9.6%	5.8%
RORE	4.9%	1.8%	4.9%	2.0%
Required equity issuance (£m) ¹	–	531	145	556
Simulated credit rating	A3	Ba1	Baa1	Baa3

Note: The ratios in Ofgem base case TOTEX do not match the ones in the Draft Determinations because we have updated the cut-off date from 29 April 2022 to 29 July 2022.¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2.² Not including the impact of correcting the cost of debt assumption, assuming that the cost of debt is fully funded for the scope of this representation.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

6 Addressing Ofgem's material errors and increasing the cost of equity allowance is required to ensure that the SSES and SSEH notional companies are financeable

In section 4 above, we outlined why Ofgem's own analysis shows that the SSES and SSEH notional companies are not financeable, contrary to Ofgem's statutory duty. Then in section 5, we explained why Ofgem's financeability assessment rests on assumptions about efficient company performance which are incorrect and not justified on the basis of the best available evidence. After correcting these assumptions, we find that the SSES and SSEH notional companies' financeability deteriorates even further.

Ofgem notes that where financeability issues are identified, the following remedies may be used to improve the financeability of notional companies:

- reducing the dividend assumption, if appropriate;
- adjusting capitalisation and/or depreciation rates; and/or
- adjusting notional gearing (which implies notional equity injection).⁵⁵

We do not consider that any of these remedies provide an adequate solution to the financeability issues faced by the SSES and SSEH notional companies. Instead, we consider that a clearly superior solution involves addressing the errors outlined in this report at source, combined with setting a higher cost of equity to improve the financeability of the SSE networks.

We do not consider that reducing the **dividend yield** from 3% represents a plausible solution for improving notional financeability. This is because when the equity injections, summarised earlier, are taken into account, the implied dividend yields to investors are already negative over the ED2 period. Since it is questionable whether investors would be willing to accept this proposition, it is unrealistic to assume that dividend yields of the notional companies can decline even further.

In terms of **capitalisation and depreciation rates**, as already acknowledged by Ofgem, there are two key issues with using these as financeability remedies:⁵⁶

- Moody's and Fitch do not recognise the impact of changing these regulatory levers when calculating financial metrics in their credit rating assessments, even though S&P does;
- as these adjustments would be NPV-neutral, they would lead to lower allowed revenues in future price control periods.

In its PR19 redeterminations, the CMA did not consider it appropriate to use these levers as remedies for financeability issues:

We do not agree with Ofwat's approach of advancing future cash flows to AMP7 to address financeability concerns. We doubt the extent to which accelerating cash flows from future periods can improve the credit quality of a regulated

⁵⁵ Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', 29 June, para. 5.27.

⁵⁶ Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', 29 June, para. 5.30. Ofgem (2021), 'RIIO-ED2 Sector Specific Methodology Decision: Annex 3 Finance', 11 March, para. 4.33. Ofgem (2020), 'Consultation - RIIO-2 Draft Determinations – Finance Annex', 9 July, p. 214.

business, as there is no change in the revenues available to meet financing obligations over time.⁵⁷

In fact, Ofgem itself appears to discount using these levers as remedies to alleviate financeability issues, as it highlights that the assumptions it applies when setting these levers are consistent with the evidence and therefore no further changes are justified:

Chapter 10 sets out our [Ofgem's] proposals on regulatory depreciation rates and capitalisation rates. On the whole, the evidence supplied did not justify a change to our working assumptions from a financeability viewpoint.⁵⁸

The **notional gearing** assumption has already been reduced from 65% in RIIO-ED1 to 60% in RIIO-ED2, meaning that Ofgem has already used this option to improve notional financeability. Reducing it further would represent an even more significant change, with the implication that an even larger equity injection would be required to de-gear the notional companies.

As noted above, does not justify targeting a level of gearing (60%) above the Baa1 range of 68–72% (60% being on the threshold between A3 and A2), while the AICR rating is more towards the end of the Baa1 range and FFO/net debt and RCF/net debt are on the lower end of the Baa sub-rating.^{59, 60} Table 6.1 compares the minimum thresholds required by Moody's to achieve a Baa1 rating with Ofgem's target levels for gearing and AICR (explicit or implicit).⁶¹ This indicates that a notional gearing assumption of 60% provides ample headroom in relation to the level of gearing that rating agencies would consider consistent with a Baa1/BBB+ rating, such that this assumption is inconsistent with a balanced definition of the notional company structure.

Table 6.1 Comparison of Moody's Baa1 thresholds for gearing and AICR with the levels targeted by Ofgem

	Moody's Baa1 threshold	Ofgem's target	Comparison
Gearing (%)	68%	60%	Ofgem's target corresponds to stronger financeability
AICR (x)	1.4x	1.3–1.4x ¹	Ofgem's target corresponds to weaker financeability

Note: ¹ Evidenced by the range of AICR levels from 1.3x to 1.43x across the networks in the base case TOTEX scenario. See Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', 29 June, Table 20.

Source: Moody's (2020), 'UK Energy Networks webinar', 9 September, p. 16.

The best remedy to address the issues identified with specific parameters of Ofgem's proposed price controls, such as TOTEX (including that funded via UMs), ODIs and the cost of debt allowance, is to address them at source. In other words, Ofgem should provide sufficient TOTEX allowances to ensure the companies can fund their efficient expenditure requirements over the period, and to eliminate the downside skew apparent in the ODI penalties and rewards package. The same applies to the cost of debt allowance: given that both SSE

⁵⁷ Competition and Markets Authority (2021), '[Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations. Final report](#)', 17 March, para. 10.82.

⁵⁸ Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', 29 June, para. 5.34.

⁵⁹ Moody's (2020), 'RIIO-2 Draft Determinations webinar', 9 September, p. 16.

⁶⁰ Moody's (2022), '[Rating methodology: Regulated electric and gas networks](#)', 13 April, p. 6.

⁶¹ While having an explicit notional gearing assumption of 60%, Ofgem only implicitly targets AICR of 1.3–1.4x, as evidenced by the range of AICR levels from 1.3x to 1.43x across the networks in the base case TOTEX scenario. See Ofgem (2022), '[RIIO-ED2 Draft Determinations—Finance Annex](#)', 29 June, Table 20.

networks qualify for the infrequent issuer premium based on Ofgem's criterion, Ofgem should provide the 6bps uplift to their cost of debt allowances. Ofgem should also ensure that the notional companies' cost of debt allowance enables them to recover their efficiently incurred debt financing costs.

Other corrections, such as making more appropriate assumptions regarding the proportion of index-linked debt and the likely outturn UM TOTEX scenario (in terms of the volume of work required), are not related to specific price control parameters which can be fixed at source. Instead, making these corrections to the financeability assessment helps identify the weak overall financeability of the notional companies under Ofgem's Draft Determinations.

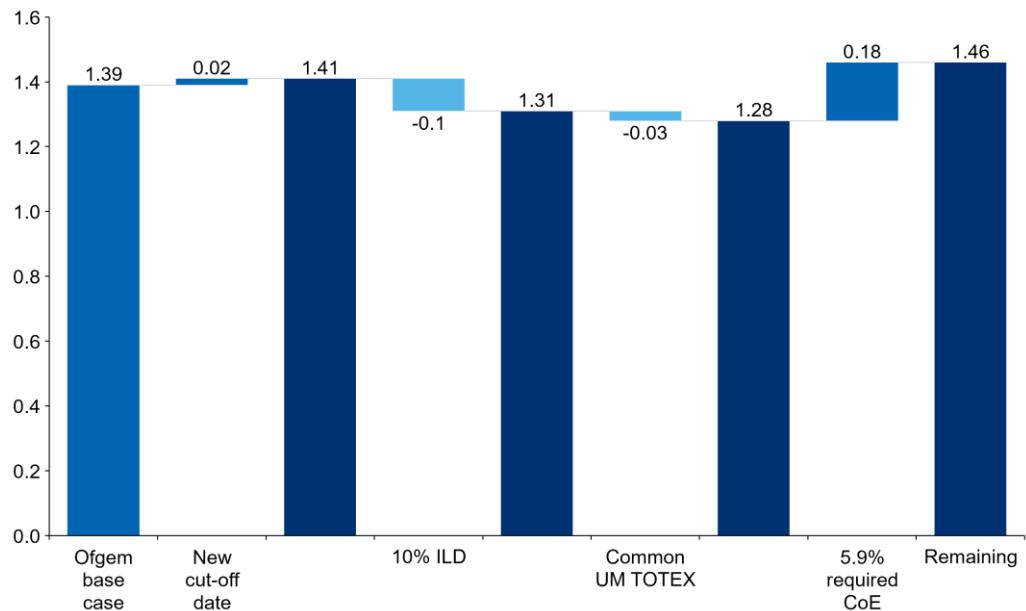
Figure 6.1 and Figure 6.2 show that if the errors that can be addressed at source are addressed at source, a combination of these measures still does not leave the SSES and SSEH notional companies financeable (looking at the AICR ratio only). Therefore, we consider an increase to the cost of equity to be a necessary measure to support their financeability. In the PR19 redeterminations, the CMA concluded that a higher cost of equity allowance could be used to address financeability risks:

We have also concluded that a decision to set a point estimate above the middle of the range will address the risks to financeability which would increase from setting the cost of equity at lower levels within the range.⁶²

Our analysis indicates that the cost of equity allowance must be increased to at least 5.9% for SSES to secure a Baa1 rating for every year of the regulatory period, based on Ofgem's rating simulator. This level of the cost of equity will not bring SSEH's credit rating to the target Baa1 level in every year, but will improve the network's metrics. Table 6.2 demonstrate the rest of the ratios for that scenario. However, even with a higher cost of equity level, the trend in FFO/net debt and RCF/net debt remains negative during the ED2 price control period.

⁶² Competition and Markets Authority (2021), '[Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations. Final report](#)', 17 March, para. 9.1402.

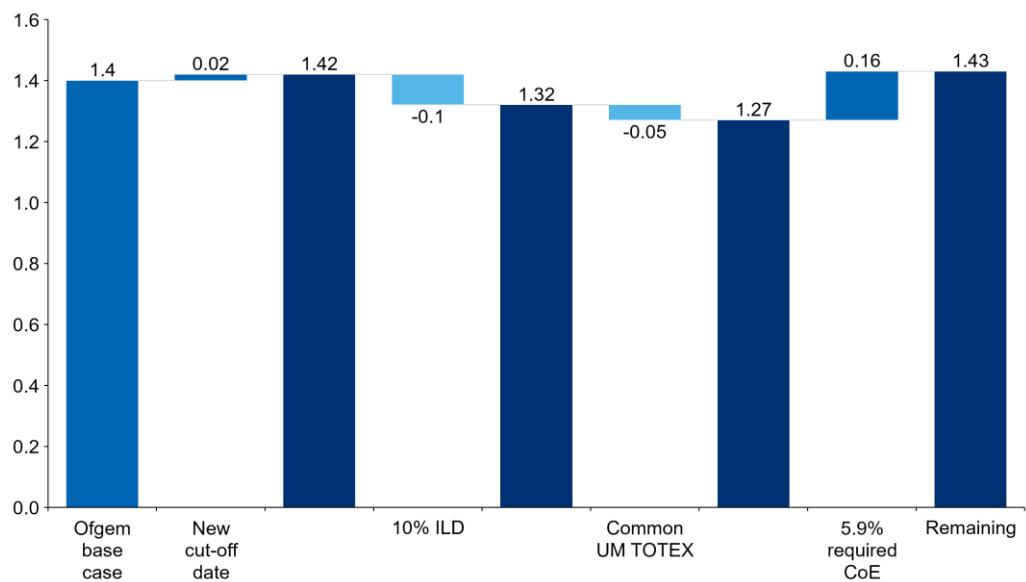
Figure 6.1 The impact of the required increase to the cost of equity allowance SSE's AICR



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

Figure 6.2 The impact of the required increase in the cost of equity allowance on SSEH's AICR



Note: All figures are simple averages over RIIO-2. The cut-off date of the PCFM and WACC allowance model has been updated from 29 April 2022 to 29 July 2022.

Source: Oxera analysis based on Ofgem's Draft Determinations PCFM.

Table 6.2 Annual financeability ratios for SSES and SSEH under an increased cost of equity scenario

	2023/24	2024/25	2025/26	2026/27	2027/28
SSES—using 5.9% cost of equity					
AICR (x)	1.48	1.46	1.45	1.44	1.45
FFO/Net Debt (%)	13.5%	12.5%	11.6%	11.0%	10.5%
RCF/Net Debt (%)	11.5%	10.6%	9.7%	9.1%	8.6%
Equity issuance ¹	–	–	–	–	–
Implied dividend yield ²	3.0%	3.1%	3.2%	3.3%	3.3%
Credit score	A3	A3	A3	A3	A3
SSEH—using 5.9% cost of equity					
AICR (x)	1.46	1.41	1.33	1.49	1.48
FFO/Net Debt (%)	14.0%	12.7%	7.7%	9.4%	8.9%
RCF/Net Debt (%)	12.0%	10.8%	6.0%	7.5%	7.0%
Equity issuance ¹	–	–	–	241	–
Implied dividend yield ²	3.1%	3.3%	4.0%	-20.9%	3.2%
Credit score	Baa1	Baa1	Baa1	Baa1	Baa2

Note: ¹ Equity issuance does not include the amount required to de-gear from 65% to 60% in the first year of ED2. ² The implied dividend yield calculation excludes the equity injection required to de-gear from 65% to 60% in the first year of ED2.

Source: Oxera analysis of Ofgem Draft Determinations PCFM.

Financeability is not the only reason for Ofgem to opt for an increase in the cost of equity.

- First, in our cost of equity assessment for the Energy Networks Association (ENA), we have identified a number of errors in Ofgem's methodology of setting the allowed return on equity, correcting which will lead to a higher allowance.⁶³
- Second, in our assessment of the balance of risks in the RIIO-ED2 Draft Determinations regulatory package,⁶⁴ we have identified a number of price control parameters that contribute the negative skew of the balance of risks, and those that cannot be addressed at source require correcting through the allowed equity return in line with the CMA PR19 water redetermination.⁶⁵

Therefore, we conclude that an increase in the cost of equity is necessary.

⁶³ Oxera (2022), 'Cost of equity in RIIO-ED2 Draft Determinations', 25 August.

⁶⁴ Oxera (2022), 'Review of Ofgem's RIIO-2 Draft Determinations proposal on ongoing efficiency', August.

⁶⁵ The CMA has applied the principle of aiming up to compensate for the price control package downward bias in the PR19 redetermination. See CMA (2021), '[Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations. Final report](#)', 17 March, para. 9.1344.

7 Conclusions

The assessment provided in this report has shown that the SSES and SSEH notional companies are not financeable under Ofgem's proposed RIIO-ED2 regulatory package. Further, we did not consider that Ofgem's proposed remedy options could address the identified financeability issues, and conclude that the only appropriate remedy to the financeability issues would be to reconsider the RIIO-2 revenue allowances. In particular, the following measures together would solve the financeability issues:

- provide sufficient TOTEX allowances to ensure that the companies can fund their efficient expenditure requirements over the period;
- eliminate the downside skew apparent in the ODI penalties and rewards package;
- provide a 6bps uplift to SSES and SSEH cost of debt allowances;
- provide a higher cost of debt allowance to ensure that it enables the notional company to recover its efficiently incurred debt financing costs;
- provide a higher cost of equity allowance.



www.oxera.com

oxera
compelling economics