Consultation

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Further consultation on amending the methodology for setting the Earnings Before Interest and Tax (EBIT) allowance

Subject	Details
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The default tariff cap ('the cap') protects customers by ensuring that an efficient notional supplier can recover its costs and earn a modest level of profit. The level of return allowed through the cap can affect customers in the short term (via near term prices) and in the longer term (via investment in the sector or likelihood of supplier failure). We issued a policy consultation in August 2022 seeking views and evidence on our proposed review of the returns that suppliers receive via the Earnings Before Interest and Tax (EBIT) allowance. We are consulting on updated proposals to change the EBIT allowance by revisiting its parameters and methodology. This policy consultation will be followed by a statutory consultation and changes could come into effect from 1 July 2023. We welcome views from all stakeholders with an interest in the domestic retail energy supply market. We particularly welcome responses from energy suppliers, consumer groups and charities. We would also welcome responses from other stakeholders and the public.

This document outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our

website at Ofgem.gov.uk/consultations. If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

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Executive summary

The default tariff cap ('cap'), as set out in law and introduced in January 2019, reflects what it costs to supply energy to our homes, by setting a maximum amount suppliers can charge per unit of energy, and fixes the profit margin a notional supplier can make by supplying in the GB energy market. By doing so, it protects customers who do not engage in the market, in particular those in vulnerable groups. This consultation focuses on the profit margin, known as the EBIT allowance. As part of the review, we aim to set an EBIT allowance that ensures customers pay a return that keeps the supply sector investable, but is not higher than necessary. At this point in time, it is our duty to have regard for public finances as many of these proposals will protect consumers individually but also collectively as UK taxpayers.

This consultation builds on the August 2022 EBIT allowance consultation ('the August consultation') and incorporates stakeholders' responses while setting out our current proposals and thinking. The decision to issue a further policy consultation instead of a statutory one reflects the benefit of further gathering evidence on the different components of the EBIT allowance ahead of planned implementation in July 2023.

The EBIT allowance was introduced as part of the price cap to deliver a normal rate of return for an efficient notional supplier serving standard variable tariff (SVT) customers. The allowance was set in 2018 using a similar methodology to that adopted by the Competition and Markets Authority (CMA) during its Energy Market Investigation in 2016.

Since the August consultation, we have refined our case for change, setting out the drivers that may require a change in the EBIT allowance methodology. We discuss several market risks that have increased and the corresponding changes to the price cap that we have introduced to respond to those risks. We are of the view that the market and the regulatory environment in which suppliers operate has significantly changed since the EBIT allowance was initially set in 2018. Consequently, we propose a bottom-up review of the methodology and parameters[1] of the EBIT allowance.

[1] Those primarily include the level of capital employed and the cost of capital.

The first component of the EBIT allowance we discuss is the capital employed. We propose to include fixed assets and further detail our proposed methodology on calculating working capital. We also propose to include demand risks as part of risk capital but exclude other risk drivers which we consider are accounted for under other cap allowances. We also consult on how and whether we should account for collateral capital. The second component of the EBIT allowance is Cost of Capital (CoC). We reinforce our recommendation to keep using the Capital Asset Pricing Model (CAPM) and propose on how to set its various parameters. Notably, we consult on keeping the equity beta at 0.7-0.8 in light of insufficient evidence justifying a change to it.

Lastly, we discuss how to implement the EBIT allowance within the cap. We propose to move to a hybrid approach, with a fixed component, that does not change when the cap is updated, and a variable component that scales with the overall cap level. We maintain this approach strikes a balance between cost reflectivity and simplicity. Additionally, we propose that future reviews of the EBIT methodology and its parameters should be subject to significant changes in the context which suppliers operate. We consider this approach preferable to setting periodical reviews.

We welcome stakeholders' views on our proposals. In parallel we are also issuing a Request for Information (RFI) with relevance to the EBIT allowance to ensure our subsequent statutory consultation is made based on the best available information and evidence.

Specific questions are raised in each chapter, with all questions contained in this policy consultation outlined in Appendix 2 for reference. We invite stakeholders to submit comments on any aspect of this policy consultation on, or before, 5 January 2023.

1. Consultation process

What are we consulting on?

1.1. We are seeking further views and information to inform our methodology for calculating the Earnings Before Interest and Tax (EBIT) allowance in the cap. This follows the previous consultation we published on 26 August 2022.

1.2. This document is split into 6 chapters:

Chapter 1: Consultation process
Chapter 2: Background
Chapter 3: Case for change and wider policy considerations
Chapter 4: Capital Employed
Chapter 5: Cost of Capital
Chapter 6: Amending the EBIT allowance methodology

1.3. In parallel to this consultation, we are issuing a Request for Information (RFI) to suppliers.

1.4. We invite stakeholders to submit comments on any aspect of this policy consultation on, or before, 5 January 2023.

Context and related publications

1.5. Key documents with relevance to the EBIT publication include:

- August 2022 consultation on amending the methodology for setting the Earnings Before Interest and Tax (EBIT) allowance: https://www.ofgem.gov.uk/publications/consultation-amending-methodology-setting-earnings-interest-and-tax-ebit-allowance
- Default Tariff Cap: Decision – Appendix 9 – EBIT: https://www.ofgem.gov.uk/sites/default/files/docs/2018/11/appendix_9_-_ebit.pdf
- Competition and Markets Authority (CMA) 2016 Energy Market Investigation: https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf

- Statutory Consultation on Strengthening Financial Resilience: https://www.ofgem.gov.uk/publications/statutory-consultation-strengthening-financial-resilience
- Price Cap Programme of Work: https://www.ofgem.gov.uk/publications/price-cap-programme-work

Consultation stages

1.6. We intend to publish a statutory consultation in February 2023 and a decision document in May 2023. Any potential changes may come into effect from 1 July 2023 (cap period 10b).

Consultation stages

- Follow-up policy consultation – 25/11/2022
- Request for information – 25/11/2022
- Consultation responses deadline – 05/01/2023
- Request for information responses deadline – 5/01/2023
- Statutory consultation – February 2023
- Statutory consultation responses deadline – March 2023
- Decision – May 2023
- Potential implementation – July 2023

How to respond

1.7. Responses to this consultation, and any supporting evidence, can be submitted to Ofgem by emailing RetailPriceRegulation@ofgem.gov.uk. We will publish non-confidential responses on our website at www.ofgem.gov.uk/consultations.

1.8. We are also happy to speak to stakeholders during the consultation period, to understand initial views. If you would like to arrange a call, please contact us through retailpriceregulation@ofgem.gov.uk.

Your response, data and confidentiality

1.9. You can ask us to keep your response, or parts of your response, confidential. We'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If

you do want us to keep your response confidential, please clearly mark this on your response and explain why.

1.10. If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you *do* wish to be kept confidential and those that you *do not* wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we'll get in touch with you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

1.11. If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ('UK GDPR'), the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 3.

1.12. If you wish to respond confidentially, we'll keep your response itself confidential, but we will publish the number (but not the names) of confidential responses we receive. We won't link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

General feedback

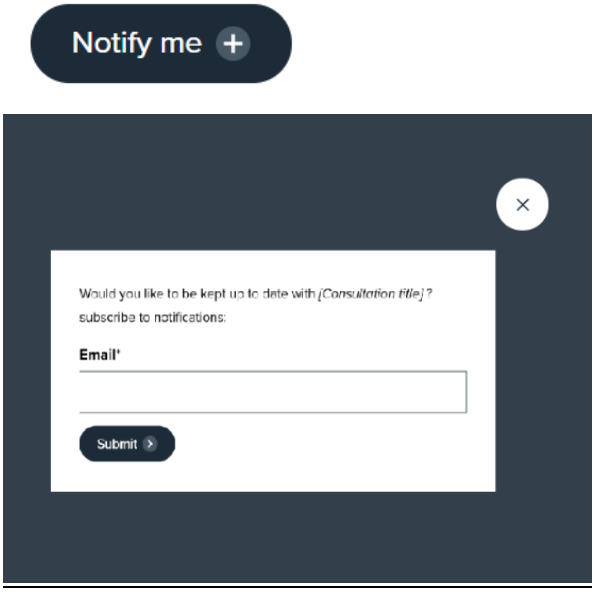
1.13. We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6. Any further comments?

1.14. Please send any general feedback comments to stakeholders@ofgem.gov.uk

How to track the progress of the consultation

1.15. You can track the progress of a consultation using the 'notify me' function on a consultation page when published on our website. Ofgem.gov.uk/consultations.



1.16. Once subscribed to the notifications for a particular consultation, you will receive an email to notify you when it has changed status. Our consultation stages are:

Upcoming ▶	Open ▶	Closed (awaiting decision) ▶	Closed (with decision)

2. Background

This chapter expands on the August EBIT allowance consultation, considers the general feedback we have received from stakeholders and outlines the reasoning behind our revised consultation, decision and implementation timelines.

The EBIT allowance

2.1. The EBIT allowance was introduced as part of the price cap to deliver a normal rate of return for an efficient supplier serving standard variable tariff (SVT) customers. It is based on the CMA's 2016 analysis of what a normal rate of return should be in the retail market.

2.2. The CMA estimated a return on capital of 10% using the Weighted Average Cost of Capital (WACC) approach. Alongside it, the CMA estimated a level of capital employed, representing the equity investment in a supply business. The capital employed is then multiplied by the WACC to establish a return on capital employed (ROCE). ROCE was then divided by a notional supplier's revenue to derive the 1.9% EBIT margin. Further details on the reasoning behind the CMA estimation are described in the August 2022 EBIT consultation.

2.3. When the cap was introduced in 2018, Ofgem incorporated the 1.9% of EBIT CMA estimate as a separate allowance within the cap. This percentage is applied to the sum of the cap allowances for wholesale costs, network costs, policy costs, operating costs, payment method uplift, and an adjustment allowance. This broadly means that the allowance scales with overall cap levels (excluding headroom, VAT and the EBIT allowance itself). The EBIT allowance level is updated quarterly when changes to the cap are announced.

Overview of responses – timelines and overall level of the EBIT allowance

2.4. Overall, we received 14 consultation responses from suppliers, trade associations, consumer advocates and consumers to the August policy consultation.[2] Those responses have been considered and are detailed in the relevant sections of this consultation. Additional evidence to inform this further policy consultation was gathered via a workshop with suppliers

[2] Non-confidential responses will be published in the August consultation link: Consultation on amending the methodology for setting the Earnings Before Interest and Tax (EBIT) allowance | Ofgem

and bilateral engagement with both suppliers and consumer advocates. Stakeholder responses regarding the consultation process, existing EBIT allowance and other overarching comments are summarised here.

2.5. Responses from suppliers expressed the need for more time to consider proposed changes to the EBIT allowance, and concerns with the pace of our approach. They mentioned that additional time would allow them to provide more valuable and considered input to the decision-making process, with multiple respondents noting the complexity of areas being considered. Some respondents also expressed concern that Ofgem has insufficient information to set a new EBIT allowance, although responses also highlighted that Ofgem has a growing body of supplier financial data it should utilise. Several suppliers requested an additional policy consultation stage. Several suppliers and a trade association referenced the Energy Price Guarantee and other interventions as placing significant pressures on companies and limiting their ability to respond in detail. Many suppliers also noted they required more detailed proposals on changes to the EBIT allowance to fully comment, with one respondent requesting Ofgem provide more information on the model used.

2.6. Respondents differ in their views regarding the timing of reviewing the EBIT allowance. Several respondents welcomed consideration of the EBIT allowance by Ofgem, although suppliers supporting re-examining the EBIT allowance maintained that the overall level of the EBIT allowance should be increased, citing a higher risk environment, and the need to ensure a resilient retail market which can attract investment. The consumer advocate noted that risks to suppliers have been reduced and transferred to consumers through recent interventions. Some suppliers acknowledge that some interventions improved resilience and reduced some risks, but that other risks had increased.[3] Several respondents argued for the need to examine the default price cap 'in the round' before making any changes to the EBIT allowance, highlighting several areas where they considered the price cap did not cover costs, and challenging a review of EBIT as too narrow, and failing to consider a broader set of changes to the price cap and the market, including some that are ongoing during the consultation process. This includes Ofgem's work on Financial Resilience and Controls.[4]

2.7. Some suppliers challenged the implication that they may be making excessive profits, describing the market as having been loss-making for a significant period, and unsustainable.

[3] Further discussion of risks is covered in subsequent chapters.
[4] Statutory Consultation on Strengthening Financial Resilience: https://www.ofgem.gov.uk/publications/statutory-consultation-strengthening-financial-resilience

Other suppliers challenged that Ofgem has ignored periods where suppliers were loss making, only focussing now on the EBIT allowance. Consumer advocates and consumers were of the opinion that the current EBIT allowance is too generous and expressed the need to review the EBIT allowance promptly.

2.8. In addition to consultation responses received, we also note the Over50sMoney.com petition and its support, which calls for the EBIT allowance to be fixed at £10 and additionally retrospectively recoup profits in excess of that since October 2022.[5]

Considerations

2.9. We consider the four-week period we have allowed to respond to the consultation is proportionate and in accordance with our consultation policy[6]. Furthermore, we have given stakeholders an opportunity to further engage with us through a workshop conducted on 7 November.

2.10. Our decision to issue an additional policy consultation is driven by the benefits of getting further information and time to test our thinking ahead of reaching a 'minded to position'. This will also allow stakeholders to observe and comment on how our thinking has evolved since the August consultation. While we appreciate and take into account stakeholders' views on various parts of the allowance, we continue to utilise supplier financial data obtained through various other processes. As such, we are also issuing a specific RFI for EBIT to inform our decision.

2.11. In an appendix to this consultation, we provided further details on the modelling approach for capital employed. We recognise the importance of this topic to consumers in both the short and medium / long term and are prioritising this review of the EBIT allowance to consider all views, alongside the information and evidence without any unnecessary delay.

2.12. One of the other reasons we are publishing so much information at the same time is to give all stakeholders, especially suppliers and their investors, clear information about likely changes. We expect that they will plan accordingly and, for example, consider future needs as

[5] Over50smoney update regarding petition against Ofgem and follow-up meeting: https://www.over50smoney.com/Home+Bills/Energy/356__Petition+Against+Ofgem+for+Price+Cap+Reform+%E2%80%93+A+Reply+From+Ofgem%2C+A+Meeting+With+Ofgem+and+Other+Updates
[6] Ofgem's consultation policy: https://www.ofgem.gov.uk/publications/ofgems-consultation-policy

well as current ones when making decisions. When deciding on the implementation of any changes, eg the timing of them, we are likely to take into account the fact that suppliers have had advance notice of these changes. When making decisions on price cap policy we can consider circumstances relating to previous price cap periods and we have done so on several occasions in the past (both increasing and decreasing the allowance). Similarly, in setting the level of EBIT we may consider previous price cap periods including from cap period 9a when the cap level rose significantly from the historical average and HMG's Energy Price Guarantee came into effect, delinking to an extent the level of the cap and suppliers' risks.

2.13. We have not yet formed a view on whether the existing allowance over or under estimates a normal profit in the retail market. We recognise that market conditions and risks have changed significantly since the EBIT methodology and level was first set. We recognise that many suppliers have become insolvent in the past year. We also recognise the analysis points which highlights the apparently negative profit margins in real supply businesses, even before the extraordinary increases in wholesale cost. Although EBIT relates to a notional, rather than real, company, we are re-considering the EBIT methodology and parameters to test whether there is an alternative approach which would be more beneficial for existing and future customers given the changes in risk in the retail market and considering how the price cap has changed over time. The outcome of the revised methodology and updated parameters would determine whether the EBIT allowance should increase or decrease for a given price cap level. Further details on the drivers behind our review of the EBIT allowance are set out in Chapter 3.

Question 1: Are there any issues we should consider in relation to our proposed 1 July 2023 implementation?'

Consultation scope

2.14. We are further consulting on the various components of our proposed EBIT allowance:

- Capital employed (CE)
- Cost of Capital (CoC)
- Implementation of the EBIT allowance within the cap

2.15. Beyond the EBIT allowance itself, we plan to assess the different impacts of changes to the EBIT allowance. This includes the effect on consumer bills - including the direct impact of the EBIT allowance itself and changes in the likelihood of supplier failure and their

associated costs. We will also be looking into the impact on different consumers, particularly vulnerable consumers, using our guidance on assessing the distributional impacts.[7]

2.16. In areas where our thinking is relatively developed, we set out our proposed approach. In other areas we are still presenting options and will consolidate our fuller assessment of impact once we have more settled views in all areas.

Statutory Framework

2.17. We set the cap with reference to the Domestic Gas and Electricity (Tariff Cap) Act 2018 ('the Act'). The Act requires us to put in place and maintain the licence conditions which give effect to the cap.[8] The objective of the Act is to protect current and future default tariff customers. In doing so, we must have regard to five matters, set out in section 1(6) of the Act, when setting the cap:[9]

- the need to create incentives for holders of supply licences to improve their efficiency;
- the need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts;
- the need to maintain incentives for domestic customers to switch to different domestic supply contracts;
- the need to ensure that holders of supply licences who operate efficiently are able to finance activities authorised by the licence; and
- the need to set the cap at a level that takes account of the impact of the cap on public spending.[10]

2.18. The requirement to have regard to the five matters identified in section 1(6) of the Act does not mean that we must achieve all of these. In setting the cap, our primary consideration is the protection of existing and future consumers who pay standard variable

[7] Ofgem impact assessment guidance: https://www.ofgem.gov.uk/publications/impact-assessment-guidance
[8] Domestic Gas and Electricity (Tariff Cap) Act 2018, sections 1(1) and 1(2). https://www.legislation.gov.uk/ukpga/2018/21/section/2/enacted
[9] Domestic Gas and Electricity (Tariff Cap) Act 2018, section 1(6). https://www.legislation.gov.uk/ukpga/2018/21/section/1
[10] Domestic Gas and Electricity (Tariff Cap) Act 2018, section 1(6)(e) as inserted by Schedule 3 to the Energy Prices Act 2022. In performing the duty under section 1(6)(e) we must have regard to any information provided by the Secretary of State, or any guidance given by the Secretary of State on this matter (section 1(6A)).

and default rates. In reaching decisions on particular aspects of the cap, the weight to be given to each of these considerations is a matter of judgment. Often, a balance must be struck between competing considerations. Throughout this document we explain the various considerations and analysis which we are weighing up.

2.19. Following the coming into force of the Energy Prices Act 2022, those specified considerations to be taken into account include 'the need to set the cap at a level that takes account of the impact of the cap on public spending'. That new consideration reflects the fact that, while the Government's Energy Price Guarantee is in force, the cap level affects the levels of payments by Government to energy suppliers. Before we make a final decision on this matter, we shall review the issues to be decided with a view to the full set of statutory considerations, to ensure that our approach and conclusions are appropriate. In the meantime, we would invite any views from stakeholders on whether there are any further particular factors or information which we should consider in making our decision.

3. Case for change and wider policy considerations

As part of this section, we identify the drivers of change that have led us to revisit the EBIT allowance methodology. We discuss that while market risks have increased, Ofgem has introduced recent changes to the price cap that work to balance those increased risks. We conclude that the market and regulatory environment in which suppliers operate has changed significantly since 2018 when the EBIT allowance methodology was initially set. Consequently, we propose a bottom-up review of the methodology and parameters of the EBIT allowance.

Context

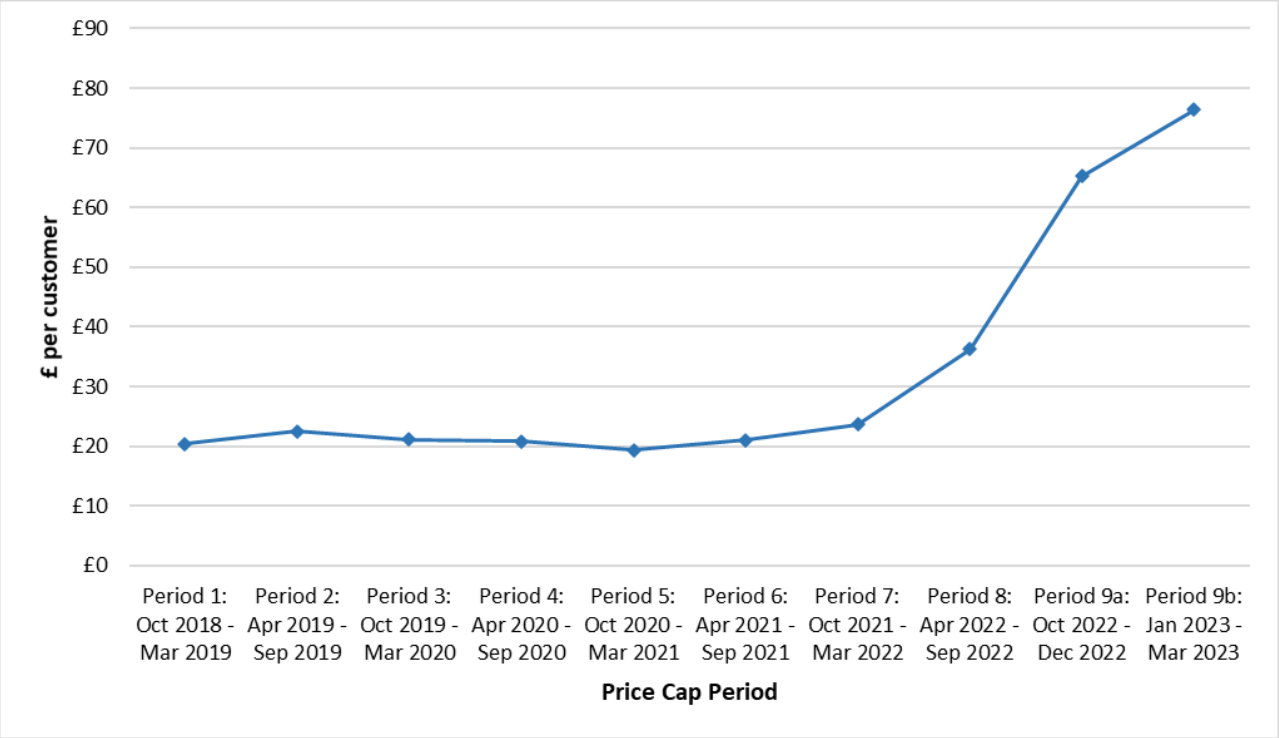
3.1. The energy crisis has been exacerbated by the geopolitical events in Ukraine which have shaken the energy market – driving gas and electricity wholesale prices up and making markets significantly more volatile. This means the energy sector participants and consumers have been facing a fundamentally different market environment over the last year. For instance, the high prices and volatility have also placed pressure on suppliers – with a number of market exits. If a supplier fails, the costs are passed onto customers.

3.2. A cost reflective default price cap means that higher wholesale prices and increased risks are reflected in the overall cap level. This has led to the overall cap level more than tripling between cap period 7 (starting in October 2021), and cap period 9b (starting in January 2023).

3.3. The EBIT allowance broadly mirrors the overall cap trend and has nearly quadrupled since its introduction, rising from £20 per customer per year in cap period 1 (starting in January 2019) for a dual fuel customer at typical consumption to £76 in cap period 9b (starting in January 2023). This increases the materiality of the EBIT allowance, as it has increased from 0.1% to 0.3% of average household disposable income from cap period 1 to 9b. However, over the last three years a large proportion of suppliers have been loss making. We will continue to monitor this area and act accordingly to ensure consumers are not being unreasonably saddled with extra costs.

3.4. In the 2018 Appendix 9 on EBIT[11], we considered whether the CMA analysis (which covered the period 2007-2014) was up to date. At the time we considered that market conditions, and wholesale prices in particular, remained at similar historical levels between the period for which the CMA conducted its investigation and 2018. This is not the case anymore with the cap's wholesale allowance seeing a nearly fourfold increase between cap period 1 and 9b.

Figure 1: EBIT allowance for a Typical Domestic Consumption Values (TDCV)[12] dual fuel customer paying by direct debit



3.5. The magnitude of increase to the EBIT allowance level raises the question as to whether and by how much the EBIT allowance should scale with changes to other allowances.

Changes to underlying market and regulatory conditions

3.6. In the August consultation, we outlined a number of factors that could have an impact on suppliers' profitability. Those included:

[11] Para 3.64: https://www.ofgem.gov.uk/sites/default/files/docs/2018/11/appendix_9_-_ebit.pdf
[12] TCDV changed over the cap periods.

- Increased price and market volatility and the associated risks;
- Changes to the cap methodology and wider policies to address those risks;
- Proposed reforms on suppliers' financial resilience; and
- Changes in working capital due to deferred recovery of costs

3.7. Our view of those factors is outlined in the previous consultation. We have since further developed the case for change which is outlined in the next paragraphs, and also considers points made in the consultation responses summarised in this document.

3.8. We consider that some market risks have increased over the last year. However, those need to be viewed holistically alongside the measures that have been put in place which may mitigate those risks, shown in the table below.

Table 1 Identification of risk drivers and mitigating factors

Risk drivers	**Risk level[13]**	**Mitigating factors and circumstances**
Wholesale volatility	+	Move to quarterly cap
Volume risk	+	Market stabilisation charge Volume risk allowance (ex-post) Move to quarterly cap
Backwardation	+	Backwardation allowance Move to quarterly cap
Higher bad debt	+	Bad debt allowance Energy Price Guarantee
Liquidity risk	+	Financial resilience controls Energy Markets Financing Scheme[14]
Competition risk	-	Market stabilisation charge Ban on acquisition tariffs Exit of suppliers Financial resilience controls

[13] Pre-mitigating factors and circumstances
[14]Energy Markets Financing Scheme Update https://www.gov.uk/government/news/energy-markets-financing-scheme-update

3.9. We note that mitigating factors may change over time. For example, the Market Stabilisation Charge (MSC) is due to expire in March 2023 (although we are consulting on further extension)[15], and the Energy Price Guarantee is time bounded until April 2024.

3.10. It is difficult to absolutely quantify whether the mitigating factors have less or more than offset overall risk levels.[16] However, the range of interventions demonstrate that Ofgem is alert and responsive to mitigating material and systematic risks faced by suppliers.[17] Those include making the cap more agile to changing market conditions – reducing inherent backwardation risks by granting a specific allowance; and closer alignment between cost incurrence and recovery by introducing a quarterly cap. Additionally, we are proposing to introduce an ex-ante allowance for Balancing Services Use of System (BSUoS) which further reduces risk.[18]

3.11. We recognise the view that suppliers would have had more control over their hedging had there not been a cap – providing them more options to manage their risks. Nevertheless, some recent cap developments have reduced suppliers' risks in comparison to a pre-price cap counterfactual. For instance, the MSC has consequentially likely to have resulted in less switching than would have otherwise been the case, and the ex-post volume risk allowance granted in relation to cap periods 7 and 8 demonstrates Ofgem's ability to step in and protect against systematic market risks.

3.12. We also note the various allowances within the cap address different risk features. For example, the headroom allowance (which also scales with the overall cap level) addresses residual cost recovery risk, and the wholesale risk allowance provides buffer against wholesale market price volatility. We adjusted the wholesale risk allowance to account for the unprecedented rise in wholesale market prices and their volatility.[19] The review of the EBIT

[15] Statutory Consultation on extending the MSC and BAT beyond 31 March 2023 - https://www.ofgem.gov.uk/publications/statutory-consultation-extending-msc-and-bat-beyond-31-march-2023
[16] Neither did we receive any quantification of overall risk levels as part of consultation submissions.
[17] This was indicated in our Consultation on the potential impact of increased wholesale volatility on the default tariff cap: https://www.ofgem.gov.uk/publications/price-cap-consultation-potential-impact-increased-wholesale-volatility-default-tariff-cap
[18] This reflect underlying changes to the BSUoS charge and changes to the allowance as a result. See Price cap: Consultation on reflecting potential changes to BSUoS charges in the price cap - https://www.ofgem.gov.uk/publications/price-cap-consultation-reflecting-potential-changes-bsuos-charges-price-cap
[19] Decision on the potential impact of increased wholesale volatility on the default tariff cap: https://www.ofgem.gov.uk/publications/price-cap-decision-potential-impact-increased-wholesale-volatility-default-tariff-cap

allowance accounts for the fact that overall risk levels are shared between those allowances. We also note that our program of work letter[20] signals that we will continue addressing systemic risks in the cap, including wholesale costs.

3.13. We also stress that some market risks have consequentially decreased since the beginning of the crisis. For example, the introduction of the Energy Price Guarantee, alongside the exit of nearly 30 suppliers, means that currently, existing suppliers potentially face a lower likelihood of consumers switching. Separately, we are consulting on introducing an Enhanced Financial Responsibility Principle, a minimum capital requirement, and ringfencing of Renewables Obligation (RO) receipts attributable to domestic supply to strengthen the financial resilience of the sector. The objective of these proposals is to remove incentives for excessive risk-taking with consumer money whilst enabling an environment for investment and sustainable competition, at the lowest overall cost to consumers. Our objective is therefore to maintain a competitive energy supply market but one in which suppliers pursue sustainable strategies to attract consumers. This signals our intention to drive the market away from competition based on unsustainable pricing to one that is based on quality service and innovation, as well as cost competitiveness.

3.14. We also note that broader interventions have helped alleviate some of the risks suppliers are facing. For example, the EPG and its successor are likely to reduce the risk of customers falling behind in their payments. Furthermore, the Bank of England's Energy Markets Financing Scheme (EMFS) provides energy market participants an additional avenue to access liquidity.

3.15. The significant changes in inherent market risks, and the series of mitigation measures that have been recently introduced, mean that the risk levels that suppliers have been exposed to have changed. Those changes justify re-examining:

- the level of capital an efficient notional supplier needs to employ;
- the rate of return on capital employed; and
- how the EBIT allowance should scale with periodic updates to the cap

3.16. We consider the bottom-up approach suggested above is a more practical way to re-calibrating the EBIT allowance. The changes in risk profiles that suppliers are facing and the

[20] Price Cap Programme of Work: https://www.ofgem.gov.uk/publications/price-cap-programme-work

various regulatory interventions would be incorporated in such an approach. Many stakeholders made qualitative arguments on increase/decrease in the risks suppliers are facing and the need to adjust the EBIT allowance accordingly. However, such arguments cannot be translated into a methodology which could be used to calculate the level of the EBIT allowance. In the capital employed chapter, we are outlining our rationale on which risks should be accounted through EBIT and the ones that already factored in within other cap allowances. As such, our approach to setting capital employed is designed to address existing residual risks. In Chapter 6, we consider the conditions that may merit making changes to the EBIT methodology and parameters. This, among other things, includes significant changes to the market or regulatory environment.

3.17. Alongside calculating a risk and cost reflective EBIT allowance, we also need to have regard "to the need to ensure that holders of supply licences who operate efficiently are able to finance activities authorised by the licence."[21] As part of our statutory consultation, we will be assessing the impact of a revised EBIT methodology on suppliers' financeability.

Wider considerations

3.18. Our decision to implement changes to the EBIT allowance shares strong links to our proposals to strengthen financial resilience by introducing a capital adequacy regime and ringfencing RO receipts. This is because we intend for the proposed minimum capital requirement to be based on the capital employed level estimated for an efficient notional supplier. Furthermore, any ringfencing requirement could have direct effect on the capital employed estimated as part of the EBIT allowance. Further detail on the linkages of financial resilience proposals is outlined in the August consultation.

Question 2: Do you agree with our assessment on the case for change?

[21] UK Public General Acts (2018), c.21, Domestic Gas and Electricity (Tariff Cap) Act 2018. https://www.legislation.gov.uk/ukpga/2018/21/contents/enacted

4. Capital Employed

This chapter sets out our proposal for how to measure the components of capital employed for an efficient notional supplier.

We discuss the rationale of using an efficient notional supplier assumption, then describe each component of the capital employed (fixed assets, working capital, risk capital and collateral capital).

We propose to add fixed assets to the components of capital employed. We also propose to include wholesale price volatility and unexpected demand shock as drivers of risk capital that suppliers need to employ, but exclude other costs (eg backwardation cost) from the calculation of risk capital employed, which we consider are already accounted for within the cap. Finally, we consult on options for collateral capital, including whether to account for collateral capital within capital employed, recognise indirect collateral costs within the operating expenditure cap allowance, or use a hybrid approach.

Context

4.1. Capital employed is a significant driver of the EBIT allowance alongside the CoC. It reflects the resources required for an efficient notional supplier to operate efficiently and the appropriate profit that providers of capital require, given the risks involved and the amount of capital employed.

4.2. When the cap was introduced in 2018, the implied capital employed was around £200 per customer per year.[22] This implied capital employed has scaled to around £765 per customer per year in cap period 9b.[23]

4.3. We distinguish between four components of capital employed (fixed assets, working capital, risk capital and collateral capital) which are later summed up to establish the overall capital employed figure. Each of those is discussed later in this chapter.

[22] This is based on a £20 EBIT allowance in cap period 1 divided by 10% cost of capital.
[23] Assuming a CoC of 10%.

Efficient notional supplier

Context

4.4. In our initial policy consultation we detailed our proposal to establish and utilise a single market representative efficient theoretical supplier, with assumptions which best reflect the whole energy market, and which would be used to determine the appropriate cost of capital and level of capital employed. We recognised the trade-offs between more closely aligning the efficient theoretical supplier with assumptions regarding independent suppliers or suppliers which are part of vertically integrated or diversified groups. We did not propose any assumed characteristics of the efficient theoretical supplier in the initial policy consultation. We also recognised that we are not in typical market conditions, making it more difficult to draw on financial data of existing suppliers.

Proposal

4.5. The notional supplier is a theoretical and efficient supplier that has no direct comparison with existing suppliers but draws from the properties across efficient suppliers in the market. Our starting point for the notional supplier assumes the following:

- it is sufficiently efficient to recover its costs under the cap over a projected two-year period;
- it is fully equity financed and does not hold long-term debt as part of its capital structure; and
- it hedges according to the wholesale methodology in the cap.

4.6. We note that current market conditions may not be reflective of future ones. When market conditions significantly changed, we would consider reassessing the EBIT methodology. The conditions that may trigger a review of future EBIT allowance methodology are outlined in Chapter 6.

4.7. We will continue to coordinate across EBIT and Financial Resilience and Controls (FRC) workstreams to come to a view on setting the efficient notional supplier in a way that results in cohesive outcomes across both workstreams.

4.8. In our statutory consultation on strengthening financial resilience, we set out our objective to protect current and future consumers by developing a more resilient energy supply market. We want to remove incentives for excessive risk-taking with consumer money

(the moral hazard) whilst enabling an environment for investment and sustainable competition. Suppliers should have sufficient capital and sustainable business models to ensure they are sufficiently resilient to market shocks and that customers are shielded from the impacts of supplier failures as far as possible. This must all be achieved at the lowest cost to consumers. This means that the notional supplier should be operating in a more resilient market where suppliers are better financed and thus more able to access efficient capital. Our view is that while work on proposals on financial resilience will be coordinated with our work on setting the EBIT allowance and the final capital adequacy requirements will be informed by the capital employed level, these amounts are unlikely to be exactly identical. This is because when the capital employed number is translated into a capital adequacy number, we are likely to use slightly different approaches to achieve specific FRC policy objectives.

Overview of responses

4.9. We asked stakeholders if they agreed that it was reasonable to use an efficient theoretical supplier-based approach, and to comment on what efficient theoretical supplier assumptions we should use.

4.10. A consumer advocate and some suppliers were supportive of utilising an efficient theoretical supplier approach, but some respondents said that was contingent on further engagement and development of the approach. A supplier queried if this approach was justified given market failures.

4.11. Several suppliers said that the notional supplier should be representative of an independent or stand-alone supplier, to avoid setting the EBIT allowance or price cap below their efficient costs, and noting that there was no requirement or expectation that a supplier should be part of a larger group. Respondents said that not adopting that approach would exclude independent suppliers from the market. Some suppliers also said that Ofgem should not assume trading arrangements or guarantees. A consumer advocate said that the approach should be representative of the market to avoid overcompensating some suppliers. One respondent noted concern regarding a market representative approach given a large share of the market was held by suppliers which had parent companies. Others said that the trade-off between over and under-rewarding different types of suppliers was an underlying issue which need to be addressed.

4.12. Some suppliers said the development of the approach should be based on current market conditions or should consider benchmarking to other markets. A respondent said that

previous estimates of capital requirements had not sufficiently reflected the capital requirements of independent suppliers.

4.13. Other points raised by suppliers were that the approach should assume a supplier was fully equity financed, had an industry representative customer mix and took a prudent approach to several areas.

4.14. Some suppliers said that an approach which took a bottom-up approach and considered efficient costs in discrete cost categories would be inappropriate, and could result in an unattainable level of efficiency in the round. Additionally, a supplier said that Ofgem should consider average supplier costs, to prevent excessive profits, rather than set the price cap at a perfectly efficient level.

Considerations

4.15. The need to derive a notional supplier stems from the Act which prescribes that we should set a single allowance across all suppliers.[24] Principally, the cap benchmarks efficient cost in the process of setting various allowances. Setting an efficient notional supplier for the purpose of the EBIT allowance is consistent with that approach.

4.16. We note several suppliers disagree with our proposed approach of using a notional supplier. However, we did not consider any responses suggested a credible alternative to the notional supplier approach. We do not see a link between recent supplier failures and the notional supplier approach. The failure of those suppliers relates to the specific circumstances of those suppliers. The drivers behind some of those failures are being addressed through our proposals on strengthening financial resilience.

4.17. We are still considering the advantages and disadvantages of defining the notional supplier as an independent one. On the one hand, assuming an independent notional supplier could bring the benefits of increased market entry. On the other hand, the large majority of suppliers currently operating in the market are not independent in the sense that the CMA assumed during its investigation. For instance, the large majority of suppliers do not post

[24] https://www.legislation.gov.uk/ukpga/2018/21/contents/enacted/data.htm

collateral themselves. Hence, replicating the form of notional supplier assumed by the CMA could lead to overcompensating the majority of participants in the retail energy market.

4.18. With regard to equity financing, using information obtained through previous RFIs, we observe that the large majority of suppliers are not raising long-term debt to finance their operations. This was also the case when the CMA conducted its investigation. We note though the challenge of distinguishing between short and long-term debt in some suppliers' submissions.

4.19. We discuss in more detail different elements related to the notional supplier such as third-party trading arrangement, timeframes, assumed costs, and the use of a bottom-up approach later in this chapter.

Overall capital employed approach

Context

4.20. In our August 2022 policy consultation, we set out three components of capital employed:

- working capital;
- risk capital; and
- collateral capital.

4.21. We proposed to characterise capital employed at a more granular level in order to review how changing markets conditions could have impacted capital requirements.[25]

Proposal

4.22. We propose to add fixed assets as a component of capital employed. This is to reflect that the notional supplier is assumed to hold some level of fixed assets under the cap.

[25] Ofgem (2022), Consultation on amending the methodology for setting the Earnings Before Interest and Tax (EBIT) allowance. Paragraph 4.43. https://www.ofgem.gov.uk/publications/consultation-amending-methodology-setting-earnings-interest-and-tax-ebit-allowance

Overview of responses

4.23. Stakeholders broadly agreed that these categories were representative of capital employed by suppliers and that we correctly identified the drivers for change. Most comments focused on assessing how much capital requirements had evolved in line with market conditions. Some suppliers suggested we should add fixed assets to capital employed.

4.24. Two suppliers highlighted that capital employed was not an appropriate business metric for asset light business such as energy retail. One of them specified that it did not measure return on capital employed in its supply business for any management reporting. Another supplier indicated that some of the assets identified as capital sit outside its own balance sheet and would be difficult to report.

Considerations

4.25. We recognise that establishing the capital employed requirement of a notional supplier may not align with the metrics some suppliers consider as part of their operations. However, we have not been presented alternatives to using capital employed for estimating the EBIT allowance. We welcome suppliers' views and evidence on this.

Fixed assets

4.26. Including fixed assets in the capital employed calculation aligns with the view of a notional supplier within the price cap and with standard accounting practices. We therefore propose including fixed assets within the EBIT allowance calculation.

Overview of responses

4.27. In responding to the August consultation, a number of stakeholders flagged that our approach excluded fixed assets. A couple of stakeholders understood the rationale behind it, highlighting a trend towards asset light energy suppliers and infrastructure as a service, meaning that most suppliers had few fixed assets on their balance sheet. One stakeholder mentioned that suppliers continued to invest in fixed assets such as billing systems and software. While the cap features a depreciation and amortisation allowance to recover these costs, this also involved an initial capital investment from suppliers which should be recovered.

Considerations

4.28. Including fixed assets in the capital employed calculation aligns with the view of a notional supplier under the cap – which allows the recovery of depreciation and amortisation costs[26]. This also aligns with the financial definition of capital employed = fixed assets + working capital.

4.29. We are proposing a level of fixed assets of £85 per customer. This is derived from the depreciation and amortisation costs under the operating cost allowance. The figure is derived by multiplying depreciation and amortisation cost by an assumed lifetime of six years. This is in line with the CMA's approach to amortising customer acquisition costs in the EMI model, and cross checked with reported depreciation schedules for fixed assets used by energy suppliers. We note that our estimate on depreciation and amortisation has not changed since the cap has been introduced. However, we have not identified drivers that suggest that the level of fixed assets has changed since the introduction of the cap.

Question 3: Do you agree with our proposal to include fixed assets as a component of capital employed and the suggested level?

Question 4: Do you agree that our estimate of fixed assets for a notional supplier is representative of current market conditions?

Working capital

4.30. We define working capital as capital used to cover differences between when goods and services are paid for by suppliers, and when customers pay their bills. This can also be considered as the net current assets of a supplier. We consider that the following elements may be potential drivers of changes in working capital:

[26] Depreciation and amortisation costs are a component within the operating costs allowance in the cap which reflects reduction in the value of an assets such as metering, IT and billing systems, and property.

- In the retail energy context, there is a timing difference between when suppliers charge their customers[27] and when they incur costs. At higher price levels, the difference between the monthly customer credit/debit and costs may increase, consequently this may require more working capital.
- A second driver of working capital could be the difference between when costs incur, and when they are allowed to be recovered by the cap. We address this driver in our risk capital sub-section which discusses the interaction between the price cap and the risks suppliers face.

4.31. We propose calculating working capital based independently using a model which is described in Appendix 1 and which closely aligns with the cost assumptions of the price cap. Initial results of that model would be shared with stakeholders as part of the statutory consultation. We will compare model results with capital employed figures reported by suppliers, but the diversity in levels of equity and financing structures could mean that the ability to benchmark working capital may be limited.

Overview of responses

4.32. Stakeholders agree with the drivers of working capital identified by Ofgem. A supplier argued that the gap between the announcement of the new price cap and when the new cap was reflected in customers' bills was a source of working capital. However, another stakeholder said that the differential between the cap price and market price would be diminished by the decision to have more frequent cap updates, reducing working capital requirements.

4.33. Another stakeholder mentioned that regulatory changes could require an increase in working capital. It noted that setting up mechanisms to implement the Energy Bill Support and Energy Price Guarantee schemes came at an unfunded cost to suppliers. Likewise, several suppliers mentioned that a potential decision requiring suppliers to ring fence customers credit balances (CCBs) would require capital injection.

4.34. Two suppliers highlighted a difference between mean and peak working capital. They mentioned that the cap's methodology remained flawed given it only took into account mean working capital, ignoring seasonality. Direct debit payment profiles, annual October

[27] Either by using direct debits or standard credits.

renewable obligations (ROs) payment deadlines and weather-related demand shocks would explain for higher working capital requirements in the winter. They suggested that a more prudent approach of capital employed should be guided by peak requirements.

Considerations

4.35. Stakeholders said that working capital requirements have increased over the past few years, but did not provide a method for quantifying this increase or provide figures. Data obtained through previous RFIs show a wide range of working capital per supplier, ranging from negative hundreds of £GBP to positive hundreds of £GBP per customer. This stresses the need to assess an appropriate range of working capital requirements for the notional supplier in an independent manner. More details on our approach and the model we use are provided in Appendix 1. Alongside this, our statutory consultation on Strengthening Financial Resilience proposes to set a minimum capital requirement; this would ultimately be closely informed by the capital employed number set for the EBIT allowance, though we propose in our consultation on Strengthening Financial Resilience an interim target for minimum capital requirement.

4.36. We acknowledge that working capital fluctuates over the course of a year. This means that suppliers can be under-compensated during winter months but also over-compensated during summer months, potentially resulting in a net situation. This is also why we are trying to assess a range which would take into account the difference between the lower and higher months in terms of working capital requirements.

4.37. We consider the headroom and wholesale risk allowances cover the gap between cost incurrence and cost recovery under the cap. We further discuss this under the risk capital subsection.

4.38. We also consider the impact of short-term credit facilities on working capital and capital employed requirements. The CMA estimated that suppliers had access to credit facilities as part of their trading arrangements. This approach is adopted by the cap, which capitalises the trading fees through a higher EBIT margin for a supplier trading on its own account (1.9%) compared to a supplier with trading arrangements (1.25%). The 0.65% EBIT margin difference between the two types of suppliers covers the capitalised trading fees and short-term credit facilities. We are seeking evidence on the extent to which suppliers still have access to these facilities, either through trading arrangements or other means, and the fees paid to use them. A new RFI will be published alongside this policy consultation, seeking specific information from suppliers on the different points listed in this section. We are also

interested in hearing from stakeholders on whether these fees should be included in capital employed or in operating costs.

Question 5: What do you see as the minimum level of working capital required for a supplier to be able to operate and which method should we use to set it?

Question 6: How can the relationship between wholesale prices and their volatility, and working capital be quantified?

Risk capital

Context

4.39. In the August consultation, we identified several potential drivers of risk capital requirements, including wholesale energy price volatility, shaping and balancing costs, bad debt and unexpected weather events.[28] Since, we have collated for stakeholders' views and further developed our thinking in this area.

4.40. Risk capital is the capital required by suppliers to cover costs and losses that arise due to the holding of open risks during a range of different scenarios. Risk capital is strongly linked to working capital, as it reflects the additional working capital required to ensure a supplier can withstand conditions of volatile wholesale prices or demand shock. Hence risk capital could be viewed as the additional working capital needed for suppliers to withstand market shocks. We try to separate the risk capital from the collateral capital as the latter is also considered as regulatory collateral, which protects counterparties against the risk of a supplier defaulting.

4.41. We consider in a higher and more volatile wholesale price environment, potential losses could be greater. As a result, suppliers may need to hold more capital to protect against such losses. However, we seek to find the right balance between ensuring that suppliers are remunerated for the appropriate level of risk capital they hold and protecting

[28] Ofgem (2022), Consultation on amending the methodology for setting the Earnings Before Interest and Tax (EBIT) allowance. Paragraph 4.50. https://www.ofgem.gov.uk/publications/consultation-amending-methodology-setting-earnings-interest-and-tax-ebit-allowance

consumers' interests by avoiding double counting some risks which are addressed elsewhere within the cap.

4.42. We set out our proposals and rationale for choosing the drivers of risk capital in the risk capital calculation and initial thoughts on how to measure risk capital in this section.

Proposal

4.43. We propose to include wholesale price volatility and unexpected demand shock as drivers of risk capital that suppliers need to employ. This means accounting for demand risk due to unexpected weather events and the risk of changes in expected SVT customer numbers that suppliers may face due to wholesale price volatility. These reflect volume risks that may not be fully accounted for under the other allowances within the cap.

4.44. We consider other risk drivers (eg backwardation cost, shaping and balancing cost, bad debt) have already dedicated allowances within the cap (including headroom allowance), and remunerating them through the EBIT allowance could lead to double counting of these costs and result in over-compensating suppliers.

Table 2 Summary of drivers of risk capital requirement that are proposed to be included in our calculation.

Drivers	**1st policy consultation**	**This policy consultation**
Wholesale price volatility	Yes	Yes
Unexpected demand shocks (unexpected weather conditions and risk of changes in expected SVT customer numbers)	Yes	Yes
Wholesale price levels	No	No
Backwardation costs	No	No
Backwardation costs recovery risk	No	No
Shaping and imbalancing costs	Yes	No
Bad debt costs	Yes	No

4.45. We note that estimating risk capital is a challenging and complicated task. We are currently exploring the use of the model to estimate risk capital. This model could be used to estimate the working capital needed under a range of scenarios. Those could include elevated

volume risks due to volatile wholesale and high prices, customer churn, and changes to demand. For the purpose of the modelling, we may not split between 'business as usual' working capital (most likely scenario) and risk capital (extreme market conditions scenarios). This is since the working capital needed under some more extreme scenarios is likely to be greater than 'business as usual' working capital, and adding the two together would result in double counting total capital required. A more detailed description on the potential modelling approach is provided in Appendix 1.

Overview of responses

4.46. Many stakeholders agreed with the need to assess the risk capital as a component of capital employed, noting the increase in market volatility and its associated impact on required capital has made risk capital significant. Some suppliers argued that the price cap did not reflect the full range of risks and costs that suppliers were facing, with risk capital within EBIT needing to capture residual risk components not reflected in the cap.

4.47. Many stakeholders agreed that the recent changes to the cap and the wider market, including quarterly cap updates, changes to the wholesale cost allowance, the introduction of the MSC and Ban on Acquisition Tariffs (BAT) reduced the risks and impact of volatile wholesale costs.

4.48. One stakeholder said these interventions meant that suppliers had been protected from increased systematic risks. However, some suppliers argued these interventions had not fully eliminated such risks. One supplier said that unpredictable industry costs would persist even if the volatility levels settle at a lower level in the future. In particular, two suppliers mentioned the risk of customer defaulting into SVT or switching to a fixed tariff at zero costs, but with implications on suppliers.

Considerations

Wholesale price volatility and unexpected demand shocks

4.49. We recognise that greater wholesale market volatility has increased the unexpected SVT demand, this presents higher volume risk (risk of changes in expected SVT customer numbers) to suppliers. When energy prices rise sharply, and with more customers defaulting into SVT, suppliers may incur unexpected SVT demand costs when they need to buy

additional energy for SVT customers, which are unexpected and unhedged.[29] In addition, demand shocks resulting from unexpected weather conditions and temperature are key determinants of risk capital, because suppliers face risks when matching their hedges to their changing customers' demand. Both drive the volume risks that suppliers face, which may not be fully accounted for under other allowances within the cap.

4.50. However, we consider that moving to quarterly cap updates and shortening the notice period has reduced volume risk significantly. Our estimate of volume risk shows that moving to quarterly updates will reduce volume risk by 74% compared to a six-monthly index.[30] Our estimate also shows reducing the notice period reduces the average volume risk further.[31] We also note that ex-post allowances have been granted to protect against systematic volume risks – such as the one granted in-lieu of cap period 7.

4.51. Given lack of fixed tariff contracts on the market, currently 84% customers are on SVT. We expect suppliers should be able to forecast their SVT demand more accurately than when the crisis started. This means the volume risks due to SVT drift could be less significant, however, this may reverse if the market falls quickly. Although, it is uncertain when prices will fall and how quickly this may happen, we expect that customer switching may increase again in the future, but this is likely to be balanced against lower wholesale price levels and volatility.

4.52. The introduction of MSC has further decreased volume risk. Following our February 2022 decision on short-term interventions, we have set up a requirement for suppliers to pay a MSC when acquiring new customers if wholesale prices fall below a set threshold. The MSC would reduce the risk of suppliers sustaining losses on energy that they had bought on behalf of their customers to efficiently limit their exposure in a rising market. We note that the MSC

[29] When prices fall, those consumers then move off the price cap tariff, this time leaving suppliers with unexpectedly low demand, so these suppliers are left with more energy than they need, purchased at a higher cost before wholesale prices fell.
[30] Ofgem (2022), Decision on price cap- changes to the wholesale methodology. Paragraph 3.10. https://www.ofgem.gov.uk/sites/default/files/2022-08/Price%20cap%20-%20Decision%20on%20changes%20to%20the%20wholesale%20methodology.pdf
[31] Ofgem (2022), Decision on price cap- changes to the wholesale methodology. Paragraph 4.8. https://www.ofgem.gov.uk/sites/default/files/2022-08/Price%20cap%20-%20Decision%20on%20changes%20to%20the%20wholesale%20methodology.pdf

is due to expire on 31 March 2023.[32] We further elaborate on the conditions that may require revisiting the EBIT allowance methodology in the future in Chapter 6.

4.53. We propose to include the volume risk due to wholesale market volatility and unexpected weather events in the risk capital calculation, because we consider there will be residual volume risks due to wholesale market volatility which have not been covered by the cap methodology changes, and additional volume risks due to unexpected weather events. We will collect evidence from suppliers on this through an RFI and we plan to link the analysis and evidence with stress test scenarios depending on data availability. We discuss our approach in the section below.

Wholesale price levels

4.54. Two suppliers said that risk capital requirements also varied with the level of wholesale prices and thought that this should be reflected within risk capital.

4.55. The wholesale cost allowance has increased significantly to reflect the level of wholesale prices since cap period 8. Suppliers would be able to take forward prices into account in their demand forecasting and hedging decisions. We consider the wholesale cost allowance in the cap reflects the efficient costs suppliers would incur if their hedging strategies followed the wholesale indexation. Suppliers who adopt their own hedging strategy may also be over-compensated by the cap on wholesale costs, but at the same time take an additional risk that they may not fully be able to recover their wholesale costs under the cap. Other risks due to the changes in the level of wholesale prices, for example, backwardation costs and bad debt costs are discussed in the follow sections.

4.56. We, therefore, propose not to include the wholesale price levels as a driver of risk capital in our calculation. We welcome stakeholders' views and evidence on this.

[32] Ofgem (2022), Decision on extending short-term interventions and adjusting MSC calculation. https://www.ofgem.gov.uk/sites/default/files/2022-08/Decision%20on%20extending%20Short-Term%20Interventions%20and%20adjusting%20MSCcalculation.pdf

Backwardation costs

4.57. Some suppliers commented that there were a number of additional risks and costs to suppliers as a result of being compliant with the cap, including the backwardation costs risk.[33] One supplier said the backwardation costs had increased due to increased market volatility.

4.58. In our August 2022 decision on changes to the wholesale methodology, we decided to update the wholesale methodology to include ex-ante modelled backwardation costs, which we calculate quarterly at each cap update. This approach provides suppliers with certainty on the allowance compared to an ex-post approach.[34] The recovery period of backwardation costs is also shortened to six months. We consider that the headroom and wholesale risk allowances cover the time difference between the incurrence of backwardation costs and their recovery under the cap.

4.59. We also consider suppliers could face risks due to increased market volatility even if the cap is not in place. We consider the updated methodology for backwardation costs within the cap provides a sufficient allowance to cover high wholesale prices and market volatility. Furthermore, our assessment of backwardation cost recovery method, using supplier stress testing submissions, showed a positive impact on supplier finances.[35] Therefore, we propose not to include the backwardation costs in the risk capital calculation.

Backwardation recovery risk

4.60. One supplier mentioned that there would be an additional risk that backwardation losses from previous quarters might not be fully recovered if customers switched to discounted products.

[33] The mismatch between the reference period assumed to be used in hedging and that used in the cap calculation causes basis risk, where the purchase price achieved by a nominal supplier does not match the index used in the cap calculation. Where the cost of the assumed hedging index is greater than the cap index, we refer to this as a backwardation cost, and where the cost of the hedging index is less than the cap length
index, we refer to this as a contango benefit.
[34] Ofgem (2022), Decision on price cap- changes to the wholesale methodology. Paragraphs 5.8-5.13. https://www.ofgem.gov.uk/sites/default/files/2022-08/Price%20cap%20-%20Decision%20on%20changes%20to%20the%20wholesale%20methodology.pdf
[35] Ofgem (2022), Decision on price cap- changes to the wholesale methodology. Paragraph 5.10. https://www.ofgem.gov.uk/sites/default/files/2022-08/Price%20cap%20-%20Decision%20on%20changes%20to%20the%20wholesale%20methodology.pdf

4.61. In our August 2022 decision on possible wholesale cost adjustment, we discussed the implementation issue of the potential under-recovery of the adjustment as customers move away from SVT.[36] At the time, we considered that there is insufficient evidence that there will be a significant overall impact and have also taken a range of measures to mitigate the risk of particularly low fixed contract prices in the scenarios where wholesale prices fall. We also consider the wholesale methodology includes ex-ante modelled backwardation costs, so the consequential increase to the headroom allowances and potential variable EBIT elements linked to wholesale costs will mitigate the costs to this risk. Building on our rationale set out in the August 2022 decision on possible wholesale cost adjustment, we propose not to include this risk in our risk capital calculation. We welcome stakeholders to provide views and additional evidence on this issue.

Bad debt risk

4.62. In the August consultation, we listed bad debt as a driver of risk capital. We said if levels of bad debt grew above or fell below the allowance, the supplier might no longer be compensated or over-compensated for those costs under the normal cap allowances. Consequently, suppliers might be exposed to the risks beyond the cap.[37]

4.63. One suppler said in the present environment, with growing concerns around the cost of living, suppliers were facing increasing exposure to bad debt, in terms of debt management and collection as well as in writing off doubtful debts. It suggested to adjust the cap methodology to reflect the higher probability of bad debt over the winter and to use the similar methodology recently adopted for backwardation costs. Two suppliers said the EBIT allowance should reflect additional bad debt losses and be sufficient to account for different bad debt levels, as the ability for customers to pay at high price levels was untested.

4.64. Some suppliers did not agree that the current cap methodology provided sufficient allowance to cover the bad debt costs and thought even with the introduction of the EPG, pressure on suppliers' working capital associated with high bills and bad debt risk remained significantly higher than it had ever been. One supplier commented that the increased bad

[36] Ofgem (2022), Decision on possible wholesale cost adjustment. Paragraph 5.63-5.66. https://www.ofgem.gov.uk/publications/price-cap-decision-possible-wholesale-cost-adjustment
[37] Ofgem (2022), Consultation on amending the methodology for setting the Earnings Before Interest and Tax (EBIT) allowance. Paragraph 4.50. https://www.ofgem.gov.uk/publications/consultation-amending-methodology-setting-earnings-interest-and-tax-ebit-allowance

debt and working capital allowance in the cap would have covered the bad debt costs due to high prices, so the reduction in bad debt risk resulted from the EPG would be modest.

4.65. Since the August consultation, Government has announced the EPG which is in addition to the £400 Energy Bills Support Scheme (EBSS). There are also other cost-of-living supports available to vulnerable households,[38] including a £650 one-off cost of living payment for around 8 million households on means tested benefits; and £500 million increase and extension of the household support fund available to councils to support vulnerable households. Furthermore, the latest government Autumn Statement[39] announced the EPG will be maintained for a further 12 months from April 2023 at a new level of £3000, with cost-of-living payments of £900 for those on means tested benefits, £300 to pensioners, £150 to those on disability benefits and doubling support for those on LPG or heating oil. We note that the impact of these supports have yet to be seen, but we consider these support schemes will reduce suppliers' debt levels and bad debt exposure over the winter and further cap periods.

4.66. In terms of the level for bad debt allowance, this is outside scope of this consultation. The bad debt allowance scales up with the wholesale costs and other cost components within the cap. A separate workstream within Ofgem will be looking at debt-related costs and to ensure the cap is cost reflective, as described in the Price cap programme of work letter.[40]

4.67. Given the uncertainty of market conditions and government policy after April 2023, we consider that making an upfront adjustment to include potential additional bad debt into risk capital would risk to double count and over-compensate the bad debt risk. Therefore, we propose not to include bad debt costs as a driver in our risk capital calculation. We welcome stakeholders' views and additional evidence on this.

Shaping and imbalance costs and liquidity

4.68. Two suppliers said the shaping and imbalance costs allowance might not cover the increased costs and suppliers might be exposed to this risk in current volatile and illiquid

[38] BEIS, Energy bills support factsheet. https://www.gov.uk/government/publications/energy-bills-support/energy-bills-support-factsheet-8-september-2022
[39] HM Treasury (2022) Autumn Statement 2022. https://www.gov.uk/government/publications/autumn-statement-2022-documents
[40] Ofgem (2022), Price-cap-Programme of Work: https://www.ofgem.gov.uk/publications/price-cap-programme-work

markets. One supplier said Ofgem should gather more specific and detailed evidence from suppliers in this area.

4.69. In our August 2022 first policy consultation, we mentioned that with more volatile wholesale prices, the potential risk faced by suppliers in shaping and balancing might have increased. Further details on shaping and imbalance costs are set out in our decision on possible wholesale cost adjustment.[41] In that decision we concluded that applying a percentage within the wholesale allowance would remain broadly appropriate, and that we would continue to monitor costs. Furthermore, we expect, all else being equal, that moving from six monthly to quarterly updates will slightly reduce the shaping cost for electricity if there is sufficient liquidity to trade in quarters where required.[42] However, we noted the current illiquidity issue in the forward power market. There is a sperate work stream to review the wholesale allowances including shaping, imbalance and transaction costs, as detailed in our programme of work.[43]

4.70. Therefore, we propose not to include potential 'additional' shaping and imbalance costs into risk capital calculation.

Measurement of risk capital

4.71. One supplier mentioned risk capital would not be shown on suppliers' balance sheets. One supplier suggested Ofgem should take account of the risk capital necessary to meet the stress test scenarios it had issued to suppliers. Another supplier said it might be appropriate to consider whether an additional link to volatility could be introduced (assuming a suitable measure of volatility could be defined).

4.72. We agree that risk capital is not a distinct form of equity from an accounting point of view. As part of our proposed approach, we consider risk capital as the additional working capital needed when planning for a range of possible outcomes. Our current proposal is that this additional working capital is financed through equity. However, we are keen to hear

[41] Ofgem (2022), Decision on possible wholesale cost adjustment. Paragraph 4.1-4.5. https://www.ofgem.gov.uk/publications/price-cap-decision-possible-wholesale-cost-adjustment
[42] Ofgem (2022), Decision on price cap- changes to the wholesale methodology. Paragraph 3.58-3.61. https://www.ofgem.gov.uk/sites/default/files/2022-08/Price%20cap%20-%20Decision%20on%20changes%20to%20the%20wholesale%20methodology.pdf
[43] Ofgem (2022), Price-cap-Programme of Work: https://www.ofgem.gov.uk/publications/price-cap-programme-work

stakeholder views on alternative or complimentary ways of financing this additional working capital, whether those alternative ways are currently being employed by suppliers, and any implications for the cost of that capital.

4.73. Aligning with our proposal to focus on volume risk as the key driver of risk capital requirement, we are exploring options to measure the risk capital employed for setting the EBIT allowance. Our initial thought is to apply a similar methodology for measuring volume risks as used in the following publications: i) May 2022 consultation on changes to the wholesale methodology; [44] ii) the methodology we used to measure Value at Risk (VaR) in our June 2022 consultation on extending the short-term interventions (MSC and BAT);[45] iii) August 2022 Changes to the wholesale methodology- distributional impact.[46]

4.74. We seek stakeholders' view and alternative options for measuring risk capital.

Question 7: Do you agree with our proposal to include wholesale cost volatility and unexpected demand shock as key drivers of volume risks when calculating suppliers' risk capital requirement?

Question 8: Do you agree with our assessment that backwardation, bad debt, and shaping and imbalances costs are accounted for in the existing cap allowances and that their inclusion within the EBIT allowance could lead to double counting?

Question 9: Do you propose an alternative approach for measuring risk capital which is preferable to the approach we describe in this section and Appendix 1? In your approach, how do you model the relationship between wholesale price volatility and risk capital under stress test scenarios?

[44] Ofgem (2022), Price cap- Statutory consultation on changes to the wholesale methodology. https://www.ofgem.gov.uk/publications/price-cap-statutory-consultation-changes-wholesale-methodology
[45] Ofgem (2022), Consultation on extending the short-term interventions (MSC and BAT) https://www.ofgem.gov.uk/publications/consultation-extending-short-term-interventions-and-adjusting-msc-calculation
[46] Ofgem (2022), Price cap - Changes to the wholesale methodology- distributional impacts https://www.ofgem.gov.uk/publications/price-cap-changes-wholesale-methodology-distributional-impacts

Collateral capital

Context

4.75. Collateral is the money a supplier may be required to deposit to cover certain activities such as network, balancing and wholesale liabilities. We identified three drivers of collateral capital in our August 2022 policy consultation:

- Gas and electricity power balancing: affected by the volatility wholesale gas and electricity prices
- General trading arrangements: here we distinguish between: a) larger suppliers which tend to trade through related businesses or parent companies[47]; and b) smaller suppliers which may need to post collateral. The amount of collateral is affected by overall wholesale prices.
- Collateral requirements for trading arrangements: the CMA concluded that third-party trading arrangements did not require collateral payments. To the extent that an efficient theoretical supplier is deemed to be trading under third-party trading arrangements, the question arises if these trading arrangements remain uncollateralised in a post-2021 world.

4.76. We are yet to form a view on a preferred approach. We are consulting on four options in the consideration part of this sub-section.

Overview of responses

4.77. Most suppliers said there had been a steep increase over the past few years in collateral requirements, particularly on wholesale markets. This is because collateral margins (initial and variation) are largely linked to wholesale prices. Volatility also contributes to higher capital requirements, as exchanges demand higher collateral to compensate for a greater risk of contract default. One stakeholder mentioned that initial margins requirements increased from 17% of contract value in January 2022 and peaked at over 85% in April 2022.

4.78. Another supplier mentioned that a full trade collateralisation event could require up to £2000 of capital per customer. Another stakeholder questioned the linear relationship

[47] Leveraging the credit worthiness of the overall organisation

between collateral capital and overall costs. They also noted that balancing costs had been capped by Ofgem, implying a disconnection between wholesale prices and collateral.

4.79. Several suppliers mentioned that it was no longer possible for any supplier to trade on a collateral free basis, including for suppliers using a trading partner. A stakeholder specified that trading partners usually allow for a maximum market exposure on a collateral free basis as part of their trading fees, but can demand collateral if the cap is exceeded. The stakeholder flagged that, given current wholesale prices, the trading partner's market exposure allowance only covered a small proportion of a supplier's trade. They mentioned that the trading partner could then require suppliers to post collaterals to reduce their own credit exposure to suppliers.

4.80. One stakeholder confirmed that in views of recent market developments customer books were no longer accepted as collateral by trade counterparties. However, stakeholders continued to rely heavily on Letters of Credit (LOCs) and Parent Company Guarantees (PCGs) as collateral assets.

4.81. Several stakeholders underlined the difficulty to find an approach representative of all market participants. Some of them indicated that the ability to use LOCs/PCGs was reserved to larger, vertically integrated companies, but that smaller, independent suppliers still needed to post liquid assets/cash as collateral. They argued that Ofgem's notional supplier should be independent, maintaining that wholesale collaterals should be included in our capital employed calculation. They also maintained that if it was decided to assume that the notional supplier used a trading partner, a specific operating cost allowance should be awarded to recover these costs.

4.82. Several stakeholders acknowledged that this also posed a risk of overcompensating suppliers which did not directly post assets as collateral but used LOCs/PCGs instead. Conversely some stakeholders argued that if collateral was excluded from the EBIT allowance, it would unfairly penalise suppliers which posted them.

4.83. Two stakeholders mentioned that some collateral might have been excluded from Ofgem's August consultation, such as collateral for capacity market payments.

Considerations

4.84. We have received limited evidence to quantify the increase in collateral levels over past few years - with data estimating worst case scenarios rather than actual figures. As such we are seeking further evidence on those, and the breakdown to different categories[48].

4.85. While we recognise that collateral requirements may have increased with wholesale prices and their volatility, we are considering instances when some collateral requirements could be disconnected from commodity prices. For instance, when wholesale prices increase, suppliers' hedges can be "in the money", given spot prices become higher than the contracts' strike prices. In that case, suppliers do not need collateral to cover variation margins, which are posted by the counter party to the hedge instead. This means that some collateral requirements may decrease, even in a growing wholesale price environment.

4.86. Consultation responses suggested that collateral commitments are mainly met through LOCs from a financial institution or PCGs. Collateral can also be posted by a trading partner on behalf of the supplier. In that situation, suppliers do not directly employ capital, ie depose cash/liquid assets on an escrow account. LOCs/PCGs are a promise of unlocking capital if the supplier is not able to meet its contractual obligations, rather than capital actually employed. To the extent that posting collateral is a timing issue and can be achieved with no actual capital, it could be argued there is no cost associated with a guarantee in lieu of posting collateral. Suppliers with trading arrangements pay a fee to their partner which can cover the costs for the partner to post collateral on the suppliers' behalf, but this does not require capital from the supplier. Hence, we are considering whether collateral should be excluded from the capital employed calculation, given we have received limited evidence of suppliers posting collateral assets from their own balance sheet.

4.87. Suppliers with trading arrangements pay a fee to their partner which can cover the costs for the partner to post collateral on the suppliers' behalf, but this does not require capital from the supplier. We recognise that many stakeholders mention it may no longer be possible for suppliers to trade on a collateral free basis, including for those with trading agreements. We would like to collect additional evidence on this assertion and on the extent

[48] Eg wholesale, balancing, network

to which collateral requirements/costs for suppliers with trading arrangements differ to those of suppliers trading on their own account.

4.88. We appreciate that LOCs/PCGs may come at a cost for suppliers. However, these tend to be an operating cost rather than a capital investment. Indeed, the supplier pays a fee for the contract to be set up and, if the facility is drawn, pays back with interest the amount drawn from the facility. An option would be for these fees to be recouped as an operating cost in the cap, rather than including them in capital employed. We received limited evidence of the level of those fees but are seeking feedback from suppliers. Should we choose to allow recovering of fees through the operating cost allowance, an option could be to use the fees from Bank of England's Energy Market Financing Scheme[49] as a point of comparison. However, we appreciate that these fees would likely represent the high end of the cost range and that suppliers' actual costs of trading are lower.

4.89. We also consider that in some cases the cost of capital/PCGs is borne by the supplier's parent company on the supplier's behalf. Including collateral in the EBIT calculation would allow a supplier to claim back a cost which is not borne by the licensed entity and which in some cases may not in practice result in an actual cost for the parent company. We are seeking evidence on whether and how collateral cost should be attributed from a parent company to the licensed supplier.

4.90. Most data typically collected about wholesale collateral is for energy traded on exchanges. We appreciate a proportion of energy is traded over-the-counter (OTC) and are seeking information on how collateral requirements may differ in bilateral contracts.

4.91. After reviewing the drivers, receiving stakeholders' feedback, and gathering more evidence, we are proposing four options with regards to the treatment of collateral:

- **Exclude collateral from the capital employed calculation**: This considers that the majority of existing suppliers meet collateral obligations through LOCs or PCGs, for which no capital is actually employed by the supplier. When guarantees are provided by the supplier's parent company, no cost is directly incurred by the licenced entity.
- **Include collateral in the capital employed calculation:** This assumes that suppliers still post assets as collateral, and that collateral free arrangements are no

[49] Bank of England, Energy Market Financing scheme

longer available even for suppliers using a trading partner. This aligns with the kind of supplier assumed by the CMA in 2016, but may be less reflective of suppliers currently operating in the market.

- **Include collateral fees as an operating cost allowance:** This assumes that the majority of collateral requirements are met through LOCs/PCGs, and that suppliers pay a fee for a contract to be set up, but no capital is actually employed by the supplier. The fees could be recouped as a specific operating cost allowance.
- **Hybrid approach:** Part of collateral requirements would be included in capital employed, while the remaining requirements would be included in an operating cost allowance. This reflects the fact that some industry bodies require collateral to be paid in cash (ie variation margins on wholesale energy markets). Remaining collateral obligations are covered through LOCs/PCGs, for which costs could be recovered through an operating cost allowance.

4.92. We are seeking feedback from suppliers on the different options, as well as evidence on the level of collateral or fee, and the method of calculating this, under any of those options.

Question 10: Do you have a view on a preferred approach with regards to the treatment of collateral under the cap?

Question 11: How are the collateral requirements calculated? Is it possible to quantify the relationship between collateral, wholesale prices and volatility?

Question 12: Do the wholesale collateral requirements mechanisms differ for trading on exchange vs trading over-the-counter?

Question 13: Does posting collateral affect the level of risk capital employed?

5. Cost of Capital

In this section we set out both proposed positions and, in some areas, different options for setting the cost of capital allowance. The overarching framework we propose to use is a standard Capital Asset Pricing Model (CAPM). A key component of the CAPM framework is the beta parameter, which measures the systematic risks suppliers are exposed to. We do not consider there to be strong evidence to deviate from the 0.7 to 0.8 range for beta established by the CMA. In setting the remaining CAPM parameters, the risk-free rate and total market returns, we seek to emulate previous regulatory approaches. Finally in setting these parameters we consider it appropriate to have in mind a time horizon of around ten years.

5.1. The Cost of Capital (CoC) is the minimum rate of return investors expect for providing capital to a company. In the context of setting an EBIT margin the CoC is used to determine the rate of return suppliers should make on their capital employed. By setting the Return of Capital Employed (ROCE) equal to the CoC, suppliers are able to attract the funding needed to finance their businesses.

5.2. When setting the first cap in 2018, we used the CMA's estimate of the CoC for a notional supplier. The CMA estimated a nominal pre-tax Weighted Average Cost of Capital (WACC) of 10%. In practice, this was a cost of equity figure as the CMA assumed a 100% equity financed supplier.

5.3. Alongside our August 2022 consultation, we published work we had commissioned from the consultancy CEPA which sought to update and refine the CMAs CoC estimate to reflect newer data.

Summary

5.4. Table 3 below provides a summary of the proposals and options we present in this chapter, alongside a summary of our considerations and any associated questions for stakeholders.

Table 3 Summary of Cost of Capital proposals and options, a summary of considerations and associated questions for stakeholders

Issue	Sub-issue	Proposal/Options	Considerations	Questions
Use of CAPM	N/A	We propose to use a standard CAPM framework to estimate the nominal pre-tax cost equity of a notional energy retail supplier	CAPM is used in almost all regulatory CoC decisions and is recommended in UKRN guidance.	N/A
Time horizon	N/A	We propose to set a CoC allowance which reflects a long-term (ie 10 year) horizon	Regulatory precedent suggests a longer-term horizon. A short-term CoC would be more volatile than a long-term CoC.	N/A
Risk-free rate (RFR)	Choice of benchmark	We propose using UK government gilts as the basis of our estimate of the RFR	Common practice supported by regulatory precedent and UKRN guidance.	Should the nominal CoC allowance renumerate inflation risk? If so, how? What are the relative merits of estimating the risk-free rate using recent spot rates only versus incorporating forward rates versus indexation?
	Inflation risk	(A) Nominal gilts and ILG gilts	Consideration of whether it is appropriate to include "inflation risk" in RFR, and if so where.	
		(B) Only ILG gilts		
	Maturity of gilts	We propose to use gilts with ten-years to maturity	In line with our CoC time horizon.	
	Observation period	One-month average of daily spot yields with analysis cut-off date two months prior to relevant cap period	In line with UKRN guidance and other regulatory precedents including RIIO-2.	
	Adjustments	Inflation adjustments using OBR forecasts, no adjustments for "convenience" premium	Use of OBR forecasts for inflation adjustment in line with common practice and UKRN guidance.	
	Forecast error	(A) No adjustment	Predictive value of forward rates beyond recent spot rates. Trade-off between stability of EBIT and potential forecast error.	
		(B) Uplift reflecting forward curves		
		(C) Annual indexation		
Total Market Returns	N/a	We propose to use the TMR range of 6.25% to 6.75%, with a midpoint of 6.5%, as used in the RIIO-2 price controls	RIIO-2 TMR has been subject to robust consideration. Updated lower historical inflation timeseries subject to significant uncertainty.	N/a
Asset beta	N/a	We propose to maintain an asset beta range of 0.7 to 0.8	Comparative beta analysis does not suggest beta values above 0.8. Including idiosyncratic risks could risk over-remunerating given inclusion of risk capital in capital employed.	N/a
Tax-rate	N/a	(A) 25%	Trade-off between stability of EBIT and reflecting latest tax rates.	Should the tax rate be updated? If yes, how frequently?
		(B) 25% with periodic updates		

Use of CAPM

Context

5.5. The Capital Asset Pricing Model (CAPM) is the primary approach used by regulators to estimate the cost of equity. Under the CAPM approach, the cost of equity is estimated as a function of the risk-free rate (RFR), the expected return of the market above the risk-free rate, ie the market risk premium (MRP), and the systematic risk of the relevant activity, ie the equity beta (β_e). The CMA used a CAPM approach in its 2016 EMI.

5.6. However, it is well understood that CAPM does not perfectly replicate the processes real-world investors undertake when allocating their investments. There are alternative models that allow for greater loss aversion and more complex distributions of returns than is assumed in CAPM.

Proposal

5.7. We propose to use a standard CAPM framework to estimate the nominal pre-tax cost equity of a notional energy retail supplier.[50]

Overview of responses

5.8. Several suppliers agreed that CAPM remained, on balance, the most appropriate approach for estimating the CoC. For example, one supplier pointed to the UK regulators network's (UKRN) endorsement of CAPM as the "best available model for estimating investor expectations". It also stated that it did not consider alternative models, such as the Divided Growth Model (DGM), were reliable enough to use as a primary source of evidence for setting the CoC allowance.

5.9. Other suppliers, while not explicitly disagreeing with the use of CAPM, did not endorse its use either. Two suppliers highlighted that they had not had enough time to consider alternatives to CAPM, with one noting that we had not provided a discussion of the pros and cons of alternative approaches in our consultation. Given this, these suppliers focused their

[50] The cost of equity in a standard CAPM framework is assumed to described by the following equation: Cost of Equity = Risk-free rate + (Market risk premium x β_e); where the Market risk premium = (Total Market Return – Risk-free rate).

responses on the CAPM parameters rather than the wider question of the use of CAPM in the first place.

5.10. Suppliers, including those supporting the use of CAPM, highlighted the limitations of the approach. One supplier stated that it had reservations about the application of CAPM to asset light businesses like energy retailers, but that overall it supported the use of the framework within a context where risk capital and collateral capital were also being considered.

5.11. One supplier was strongly against the use of CAPM. The supplier said that CAPM focused on compensating investors for systematic risk, the risk inherent to the entire market, whereas idiosyncratic risks such as weather risk drive investors' perceptions of energy supplier businesses and therefore attract a risk premium not captured by CAPM.[51] It noted that energy suppliers face different risks than regulated network utilities, from which the regulatory precedent for CAPM comes. For example, in contrast to regulated monopolies such as network companies, energy retailers face competition for customers who can switch suppliers.

5.12. As the standard approach to CAPM does not allow for any risk premium related to idiosyncratic risks, and due to the differences between the retail sector and regulated utilities, the supplier stated that the use of CAPM would be inappropriate. The supplier suggested that extensions to the CAPM framework can be made which incorporate idiosyncratic risks, arguing that such modified versions of CAPM or an entirely different method should be used.

Considerations

Case for CAPM

5.13. CAPM remains the workhorse model to calculate CoC within economic regulation. A UKRN-commissioned report in 2018 recommended that regulators should continue to use CAPM to estimate the cost of equity.[52] UKRN reaffirmed that recommendation in their latest

[51] Idiosyncratic or unsystematic risks are those risks which are not shared with the wider market and are often specific to an individual company or sector.
[52] Burns, P., Mason, R., Pickford, D., Wright, S., 'Estimating the cost of capital for implementation of price controls by UK Regulators,' March 2018, p.16-22 and appendices A and B. https://ukrn.org.uk/app/uploads/2018/06/2018-CoE-Study.pdf

guidance for regulators, stating that CAPM should continue to be regulators "primary approach for estimating the cost of equity".[53]

5.14. CAPM benefits from being a relatively simple, requiring only three inputs, and therefore transparent framework. Given its wide use in regulatory contexts, there is a significant body of evidence and precedent that can be used to help establish appropriate values for these three inputs.

5.15. Stakeholders will also have experience with the CAPM framework, from other contexts (such as RIIO-2 price controls) but also more generally given its wide use, helping ensure the process for deriving a CoC value is well understood and that stakeholders are able to engage in the detail of the input value choices.

5.16. While investor decision-making is likely driven by a wider set of considerations than is captured by CAPM, a UKRN commissioned study concluded that there is "strong evidence that investors still behave as if CAPM is their benchmark model".[54]

Limitations of CAPM

5.17. As with all models, CAPM makes a number of simplifying assumptions, not all of which accord with reality in all contexts. Some of these may have implications for whether CAPM is a suitable framework to use in the context of establishing a CoC for a notional energy supplier. The two assumptions we highlight here are the symmetrical distribution of expected returns and the assumed independence between the cost of equity and idiosyncratic risks.

5.18. CAPM assumes that all investors follow a mean-variance optimisation investment strategy.[55] This implies that investors express their risk appetite by simply trading off between the variance and return on a portfolio, where returns are normally distributed and therefore symmetric. In reality, investors may have more complex preferences, including placing an additional premium on avoiding extremely poor returns. As a result, where returns

[53] UKRN (2022), UKRN guidance for regulators on the methodology for setting the cost of capital — consultation. Recommendation 2 https://ukrn.org.uk/publications/ukrn-guidance-for-regulators-on-the-methodology-for-setting-the-cost-of-capital-consultation/

[54] Burns, P., Mason, R., Pickford, D., Wright, S., 'Estimating the cost of capital for implementation of price controls by UK Regulators,' March 2018, p.17 https://ukrn.org.uk/app/uploads/2018/06/2018-CoE-Study.pdf

[55] Markowitz, H.M. (1959) Portfolio Selection: Efficient Diversification of Investments

on an investment are not symmetrically distributed but are negatively skewed, investors may expect a compensating higher return.

5.19. In the context of the current energy retail market, investors may judge that they face asymmetries in the balance of risk and return and therefore seek a higher return. For example, as a result of the construction of the price cap, suppliers face volume risks in both rising and falling price scenarios. Ofgem has made changes to mitigate these risks, notably the move to quarterly cap periods and the introduction of the MSC. Other potential sources of asymmetric risk, such as the risk that backwardation exceeds contango, have also been mitigated by changes to cap design. Price cap related risks were discussed in more detail in Chapters 3 and 4.

5.20. While some degree of asymmetry in risks may remain, we do not see a case for attempting to reflect this in the CoC allowance. We are not aware of any regulatory attempts to do so in other contexts, nor of any robust way to quantify the degree of asymmetry and uplift the CoC allowance by an appropriate amount. We conclude that it is more appropriate to address asymmetric risk through the design of the price cap and through our assumptions about risk capital, where we consider a range of price scenarios.

5.21. CAPM also assumes that only systematic risk affects the risk premium required by investors. Systematic risk, expressed by the beta parameter, measures the correlation in returns between an asset and returns in the wider market (ie the rise and fall relative to the wider market). Risks that are unrelated to the wider market, often referred to as idiosyncratic risks, are assumed to not impact the return required by investors. The rationale for this assumption is that an investor's exposure to such idiosyncratic risks can in theory be eliminated through the appropriate diversification of the investor's portfolio.

5.22. However, constraints on diversification may exist resulting in investors not holding a fully diversified portfolio. Studies of real-world portfolios suggest many individual investors hold under-diversified portfolios.[56] The part of idiosyncratic risk that is not diversified may then generate a requirement from investors for a higher rate of return.

5.23. The empirical evidence of the role of idiosyncratic risk on equity returns is mixed. Some studies find a positive relationship between idiosyncratic risk and returns while others

[56] Goetzmann, W. N., & Kumar, A. (2001), Equity portfolio diversification, NBER Working Paper https://papers.ssrn.com/sol3/papers.cfm?abstract_id=294735

find no statistically significant relationship. These differing results largely reflect the use of different proxy measures of idiosyncratic risk between studies.[57]

5.24. If we do assume idiosyncratic risks impact of cost of equity, then we need to consider if we should account for this, and if so, how. We discuss this below.

Reflecting idiosyncratic risk

5.25. One supplier told us that we should attempt to incorporate an idiosyncratic risk premium within our CoC estimate. They pointed to an approach laid out in Laghi & Di Maracantonio (2016).[58] This method estimates idiosyncratic risk using between three and five factors, depending on whether the company is listed or not. These include the total asset value, the ratio between book value and market capitalisation, the ratio between EBITDA and EBIT, the interest coverage ratio and the relative volatility of a company's stock market price compared to a reference index. This measure of risk is then added to a standard CAPM cost of equity estimate.

5.26. We are not aware of any examples where this approach has been used in a regulatory context. In addition, as discussed above, the extent to which such risks do attract the requirement for higher returns is open to debate.

5.27. Furthermore, as we discuss in more detail in our approach to beta, compensating suppliers for their exposure to residual idiosyncratic risks, while also allowing for risk capital in our capital employed estimates, risks double counting suppliers' risk exposure.

5.28. For these reasons we do not propose to use modified versions of the CAPM framework in an effort to account for idiosyncratic risk.

[57] Bozhkov, S., Lee, H., Sivarajah, U. et al. Idiosyncratic risk and the cross-section of stock returns: the role of mean-reverting idiosyncratic volatility. Ann Oper Res 294, 419–452 (2020). https://doi.org/10.1007/s10479-018-2846-7

[58] Enrico Laghi & Michele Di Marcantonio (2016) Beyond CAPM: estimating the cost of equity considering idiosyncratic risks, Quantitative Finance https://www.tandfonline.com/doi/full/10.1080/14697688.2015.1124136

Time horizon

Context

5.29. When setting a CoC allowance using CAPM it is useful to have a time horizon in mind. In most regulatory contexts this would be a forward-looking time horizon, possibly aligned with the length of the price control period for example. The choice of time horizon is relevant as it has implications for the value of CAPM parameters.

Proposal

5.30. We propose to set a CoC allowance which reflects a roughly 10-year horizon.

Overview of responses

5.31. Stakeholders tended to say that the CoC should reflect current market conditions, in particular the elevated levels of risk that suppliers perceive they currently face. For example, a number of suppliers indicated that they felt the higher "short-term" equity beta range proposed by CEPA should be used. One supplier told us that energy retail businesses have shorter timescales of certainty compared with network or generation businesses.

5.32. One supplier said that a combination of both short- and long-term evidence should be used. It suggested that we should come to a long-term baseline view of the CoC but couple this with a short-term additional allowance. Under this approach the long-term CoC would be stable while the short-term allowance would be used to adjust the CoC when market conditions were unusual.

Considerations

5.33. Regulatory precedent and academic guidance points to us considering a longer time horizon. For example, the RIIO-2 price controls set their risk-free rate parameter with reference to 20-year long government bonds. Equally, a UKRN commissioned study recommended that a "fairly long horizon, for example, 10 years," be chosen when estimating the CoC.[59]

[59] Burns, P., Mason, R., Pickford, D., Wright, S., 'Estimating the cost of capital for implementation of

5.34. For a given time horizon being considered, the CAPM parameters should be estimated in a way that is consistent with that chosen horizon. In this light we view some suppliers stated preference for a higher "short-term" equity beta parameter and use of longer tenor gilts when setting the RFR as inconsistent.

5.35. The suppliers' case for considering a shorter-term horizon appears to be primarily related to ensuring that the currently elevated risks they perceive are reflected in the CoC estimate. We discuss in detail these risks in the context of setting the beta parameter later in this document. However, more generally, we do not consider the CoC assumption is the only vehicle within the EBIT allowance to address changing risks. The risk capital element of the EBIT allowance can also be adjusted. Reflecting these shorter-term risks in both the CoC and capital employed would risk double counting.

5.36. As a result, we consider that the CoC should reflect a longer-term view and will seek to align the CAPM parameters with a roughly 10-year horizon.

CAPM components: Risk-free rate

Context

5.37. The risk-free rate (RFR) provides the foundation of the cost of equity under the CAPM framework. It aims to estimate the required return on a riskless asset and is generally used twice in the CAPM equation. First as the base level of return investors require and secondly to identify the portion of equity returns which are affected by a company's expose to systematic risk – the market risk premium (MRP).[60]

5.38. The RFR is an economy-wide figure and does not vary depending on the sector being considered. A truly riskless asset does not exist, so proxies must be found. The most common proxies used are government bonds, but other debt instruments are also sometimes considered.

5.39. Once a suitable proxy asset is found, invariably some form of debt, there are a series of decisions which follow. These include:

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price controls by UK Regulators,' March 2018, p.29, recommendation 2
https://ukrn.org.uk/app/uploads/2018/06/2018-CoE-Study.pdf

[60] The Market risk premium (MRP) is also sometimes referred to as the Market Risk Premium or MRP.

i. Whether real or nominal rates of return are used (or both):
- There may be useful information in both nominal and real rates when estimating the RFR.

ii. The maturity of the asset:
- The choice of asset maturity will reflect judgements over the time horizon you are seeking to set a CoC allowance for.

iii. The observation period:
- The rate of return on the most common assets used to proxy the RFR can generally be observed on at least a daily basis. A choice therefore must be made on over which period you take your observations from and whether, or how, you summarise those observations.

iv. Adjustments:
- Adjustments to observed market values may be necessary in certain circumstances. For example, when converting a real to a nominal value, or an RPI-based measure to a CPI-based measure.
- Other adjustments to remove certain premiums from the chosen benchmark assets rate of return in order to more closely reflect the true risk-free rate may also be desirable.

v. Risk of forecast error:
- When setting a RFR for a forward-looking period, it may be more accurate to update the assumption regularly to track the latest information.
- As such a choice has to be made whether to attempt to reflect this uncertainty, and if so how.

5.40. Below we set out our current view on each of these aspects. Where we do not have a 'minded to' position, we set out a range of options, assessing the pros and cons of each as part of our considerations.

Initial view and options

Choice of benchmark

5.41. We propose using UK government gilts as the basis of our estimate of the RFR.

5.42. We do not propose incorporating evidence from other assets, such as AAA-rated corporate bonds.

Inflation risk

5.43. We examine the approaches used by the CMA, CEPA and Ofcom in coming to nominal CoC estimates. They use various combinations of both nominal and real RFR estimates, calculated using both nominal gilts and index linked gilts (ILGs). The primary distinction appears to be whether, and how, inflation risk is reflected in the CoC estimates.

5.44. We do not express a firm view on whether or how inflation risk should be compensated for in the CoC allowance. We welcome suppliers' views on these issues.

Maturity

5.45. We propose to use gilts with 10 years to maturity, matching the time horizon we propose to consider when setting a CoC figure.

Observation period

5.46. We propose to use a 1-month average of the daily spot yields observed prior to the analysis cut-off date. Where the analysis cut-off date will be 2-months prior to the beginning of the relevant quarterly cap.

5.47. For example, if an updated EBIT allowance is introduced for the July to September 2023 cap period, the analysis cut-off date would be the 1st of May 2023, meaning an observation period of April 2023.

Adjustments

5.48. Where we need to adjust observed market rates for inflation, such as adjusting RPI-based yields to CPI or to nominal values, we propose to use Office for Budget Responsibility (OBR) forecasts, from the end of their forecast period, reflecting the long-term time period we are considering when setting the CoC allowance.

5.49. We do not propose making any other adjustments to remove potential other drivers of the returns on government bonds, such as the "convenience" premium. This is in line with our proposal to not consider evidence from AAA-rate corporate bonds when setting the RFR.

Forecast error

5.50. We consider three options for dealing with forecast error:

- Do not make any adjustment to the month-average spot yield observed prior to the commencement of the updated EBIT allowance.
- Apply an uplift to the month-average spot yield, reflecting evidence from forward curves.
- Update the RFR periodically, reflecting the latest market evidence. Calculate the updated RFR on the same basis as the initially set RFR.

Overview of responses

Choice of benchmark

5.51. Several suppliers told us that reliance on gilt yields alone to proxy the RFR was inadequate. They pointed to evidence that government bonds benefit from a 'convenience premium' compared to corporate borrowing, reflecting their safety and liquidity.[61]

5.52. One supplier, in a report produced by its advisor, highlighted several examples where regulators had recognised the 'convenience premium' and adjusted the RFR implied by ILGs upwards as a result. The supplier said that we should incorporate evidence from iBoxx £ Non-Gilt AAA indices when setting the RFR.

Real versus nominal

5.53. One supplier indicated that they were unsure why CEPA had not used a nominal estimate of both the RFR and TMR when calculating the MRP given the aim is to estimate a nominal CoC. It highlighted that Ofcom, in their Wholesale Fixed Telecoms Market Review 2021-26, used nominal RFR and TMR estimates when calculating a nominal cost of equity.

Maturity

5.54. Several suppliers, responding to the approach taken in the CEPA report, expressed the view that evidence from 20-year gilts should be considered when estimating the RFR. One

[61] Oxera (2021), 'The cost of equity for RIIO-ED2'; section 3.2 https://ssenfuture.co.uk/wp-content/uploads/2021/12/A_19.3_Oxera_The-Cost-of-Equity-for-RIIO-ED2_CLEANFINAL_REDACTED.pdf

supplier referenced the CMA's conclusion from its 2016 EMI that long-maturity gilts were the most relevant to the RFR when setting a cost of equity since equites "have long (indefinite) maturity".[62]

5.55. CEPA's stated rationale for using shorter maturity gilts was that there are good reasons to expect that the investment horizon for the energy retail sector was shorter than that of the most regulated utilities. For example, unlike regulated monopolies, energy suppliers can lose customers over time. Suppliers also have less fixed assets with likely shorter asset lives than those of network companies for example.

5.56. In response to this, one supplier said that these arguments were more relevant for the risk-return profile of a supplier rather than the time horizon for investors. The supplier said that even if equity investors plan to sell after a certain period, the investment can still be considered indefinite because the valuation of the business at the time of investment would include a terminal value, which in turn would be based on the assumption of indefinite maturity. This supplier also provided evidence on the maturities used by the CMA in several of its market investigations, which it said showed using evidence from a range of maturities, from five- to 20-years, was justified.

Observation period

5.57. Suppliers didn't tend to offer a view of the observation period other than in the context of the potential for forecast error, which we discuss separately.

Adjustments

5.58. Suppliers advocated for adjustments primarily in the context of recognising the 'convenience premium' inherent in government bonds and in adjusting recent or historical rates to consider the likely future path of the interest rates. We have already discussed the potential for a 'convenience premium' in the context of the choice of benchmark assets and will discuss suppliers view on making adjustment to mitigate forecast error separately.

5.59. Outside of these two areas, one supplier offered a view on the adjustment CEPA made to ILG yields to account for the wedge between the RPI and CPI measures of inflation. CEPA

[62] CMA (2016), Appendix 9.12: Cost of Capital, Energy market investigation, para. 19 https://assets.publishing.service.gov.uk/media/576bcc3c40f0b66bda0000b4/appendix-9-12-the-cost-of-capital-fr.pdf

used market evidence on the difference between the rates on from RPI and CPI inflation swaps over different tenors to generate an estimate of the wedge between RPI and CPI inflation. They then used this to adjust the RPI-linked gilts so that they are stated in CPI terms, which is generally accepted to be a more accurate measure of inflation. The supplier suggested that this approach should only be used if there is certainty that RPI will converge to CPIH by 2030 and therefore encouraged us to consider if this was the right approach.

Forecast error

5.60. Several supplier responses indicated that they felt the simple use of recent gilt yields would be insufficient and that either an uplift was required to reflect the future path of rates or that the RFR should be subject to indexation.

5.61. For example, one supplier noted that in the RIIO-2 price controls, Ofgem had indexed the RFR allowance. The supplier said that in the absence of indexation, providing headroom for uncertainty above the spot or longer-term average rates would be an alternative approach. Another supplier directly stated that indexation would be the best approach in the context of the price cap, which may not be in place over the long-term and where there is currently no trigger to reassess the CoC element.

Considerations

Choice of benchmark

5.62. Government debt is generally seen as having very low default and liquidity risk, with ILGs also having no inflation risk, making them good candidates as proxies of the RFR. UKRN's most recent review of cost of capital decisions by UK regulators states that generally "regulators estimate the risk-free rate based on yields of RPI-index linked gilts".[63] These theoretical strengths and regulatory precedent underline our proposal to use UK gilts as the basis for the RFR. We return to the question of whether, or when, to use nominal gilts or ILGs in a later section.

5.63. The UKRN report also notes that the CMA additionally used AAA-rated corporate bond yields in coming to its redetermination of Ofwat's PR19 price controls. The CMA used ILG yields to set the lower bound of the RFR range and corporate AAA-rate yields to set the top of

[63] UKRN (2022), Cost of Capital – Annual Update Report, para 5.6
https://ukrn.org.uk/publications/cost-of-capital-annual-update-report/

the range, using the mid-point as the central case.[64] The CAA also used evidence from corporate AAA-rated yields in its final proposals for the H7 price controls. CAA used corporate yields to calculate an estimate of the 'convenience premium' (32bps) which it added to the one-month trailing average yield of ILGs to set an upper value.[65]

5.64. Despite these examples, the use of gilts alone remains common practice. UKRN guidance for regulators argues that while gilts are not perfect proxies for the RFR, they have advantages over other instruments. For example, AAA-rate corporate bonds contain risk premia that would not feature in the true RFR, such as inflation, default and liquidity risk. Ideally these should be adjusted for. However, judgement is required in doing so and with multiple adjustments the scope for introducing further error is increased.

5.65. Additionally, indices of AAA-rate corporate bonds may feature bonds of very long tenors (eg over 50 years) which are less relevant for the estimation of the RFR in most contexts. The CMA's final determination on RIIO-2 accepted Ofgem's observation that there was limited diversity in AAA-rated corporate bond indices.[66] In this example once instruments with very different characteristics from standard RFR proxies, such as very long maturities, were stripped out only one instrument remained. Adjusting this single remaining bond for liquidity and interest risk premiums resulted in a yield lower than that of the ILG rate.

5.66. Given the strong regulatory precedent and the issues associated with incorporating evidence from alternative instruments, we propose to use only UK government bonds as our benchmark assets when setting the RFR allowance.

Inflation risk

5.67. As part of the EBIT allowance, we need to set a nominal cost of capital, as the price cap is set in nominal (cash) terms. In coming to a nominal figure, both the CMA and CEPA made use of a combination of real and nominal RFR estimates based on yields from nominal and index-linked gilts. In both cases a nominal RFR, derived from nominal gilts, was used for

[64] CMA (2021), Ofwat Price Determinations, Final report, https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_---_web_version_-_CMA.pdf
[65] UK Civil Aviation Authority (2022), Economic regulation of Heathrow Airport Limited: H7 Final Proposals, Section 3: Incentives and other issues, para 9.248 https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=11472
[66] CMA (2021), Energy Licence Modification Appeals 2021, Volume 2A: Joined grounds (Cost of equity), para 5.102 https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf

the standalone RFR parameter and a real RFR, derived from ILGs, was used when calculating the MRP.

5.68. The justification given by CEPA for this approach relates to compensating suppliers for exposure to inflation risk. CEPA notes that in the context of network companies, both regulated asset values and allowed revenues are updated each year for forecast and outturn inflation. They suggest that energy suppliers under the cap do not receive a similar treatment. Given this, CEPA argue that suppliers should be renumerated for bearing inflation risk. They point out that yields on nominal gilts reflect the return that investors require for holding an asset that is exposed to inflation (ie they include an inflation risk premium). Using a nominal RFR based on nominal gilt yields for the standalone RFR parameter ensures that this risk premium is accounted for in the CAPM calculation.

5.69. The decision to not use nominal gilts to set the RFR parameter used in the calculation of the MRP reflects CEPA's judgement that there is no logical basis for the renumeration for inflation risk to scale with beta. The subsequent use of a real RFR in the MRP calculation then appears to be a matter of convenience given the use of a real TMR value sourced externally from the RIIO-2 price controls. In theory, the RIIO-2 price controls derived real TMR could be uplifted for inflation and compared to a nominal RFR based on uplifted ILG yields, though this should result in a very similar MRP.

5.70. In contrast to the CMA/CEPA approach, Ofcom exclusively uses a nominal RFR derived from ILG yields when setting a nominal CoC for BT Group in their recent Wholesale Fixed Telecoms Market Review.[67] This results in a nominal RFR that does not incorporate an inflation risk premium and therefore a nominal CoC estimate that does not reflect inflation risk. Ofcom also use a nominal TMR, calculated by uplifting a real TMR value for inflation, when setting their MRP parameter. UKRN singles Ofcom out in their annual CoC update as the only UK economic regulator they look at which applied a nominal cost of capital in most of its price controls.[68]

5.71. If inflation risk should be reflected in the CoC allowance, the use of nominal gilts might not be the only way to achieve this. For example, a standalone estimate of inflation risk could

[67] Ofcom (2021), Wholesale Fixed Telecoms Market Review 2021-26, Annex 20, Table A20.1 https://www.ofcom.org.uk/__data/assets/pdf_file/0021/216084/wftmr-statement-annexes-1-26.pdf
[68] UKRN (2022), Cost of Capital – Annual Update Report, para 2.10 https://ukrn.org.uk/publications/cost-of-capital-annual-update-report/

be added onto an RFR derived from ILGs. Equally the beta parameter may be a better home for such risks.

5.72. Often in the price control scenario, the regulatory asset base (RAB) is indexed by inflation in order to compensate investors for inflation. This does not reflect the setup in this scenario, with the capital employed values unindexed. However, the price cap itself is set to be reflective of the costs suppliers face. Revenues might therefore be considered as inflation protected. This combined with the EBIT allowance being applied as a percentage of those revenues, a case could be made that some level of compensation is implicitly provided for inflation already.

5.73. We do not express a firm view on whether or how inflation risk should be compensated for in the CoC allowance. We welcome suppliers' views on these issues.

Question 14: Should the cost of capital allowance compensate for inflation risk? If so, how?

Maturity

5.74. The CMA in their 2016 EMI report averaged yields on gilts with maturities between 15 and 25 years when setting its RFR. This reflected the CMA's view that equities have an indefinite maturity. CEPA in contrast used evidence from gilts with 5- and 10-year maturities to set the lower and upper bound of its RFR. This reflected CEPA's judgement that the investment horizon for the energy retail sector is likely to be shorter than other sectors subject to price controls, like energy networks, due to the existence of competitive pressures and shorter-lived assets.

5.75. UKRN guidance on CoC states that regulators should use long dated gilts to match the assumed investment horizon in their sector and suggest that maturities of ten to twenty years are likely to be suitable for most sectors.[69] Given this and given our earlier assessment that we are considering a ten-year time horizon when setting this CoC allowance, we propose to

[69] UKRN (2022), UKRN guidance for regulators on the methodology for setting the cost of capital - consultation, p13 https://ukrn.org.uk/publications/ukrn-guidance-for-regulators-on-the-methodology-for-setting-the-cost-of-capital-consultation/

use 10-year gilt yields when setting our RFR. The use of 10-year gilts is not out of line with the CMA's view on the indefinite nature of equities. The CMA used ten-year gilts in its 2020

5.76. The CMA's funerals market study stated, "We use 10-year yield curves to estimate the WACC as we consider long-maturity gilts to be most relevant to the RFR in the cost of equity since equities also have long (indefinite) maturity".[70]

5.77. We do not see any significant benefit from considering a wider set of maturities to establish a RFR range, and therefore focus solely on 10-year gilts.

Observation period

5.78. UKRN guidance on CoC states that current yields are likely to provide the most up-to-date proxy on the rate of return investors require on a risk-free investment and that therefore yield going back no more than a year from the analysis cut-off point should be reasonable to inform the RFR.[71]

5.79. The CMA EMI report provided a backward looking CoC, using a long historical time series of gilt yields, and so does not represent a relevant comparator to our task of setting a forward looking CoC allowance. CEPA used a one-month average of gilt yields when setting its RFR. Similarly, in the RIIO-2 price controls average daily yields for the October prior to the start of the financial year are used. Given these precedents, the UKRN guidance and our intention to update the CoC assumption more frequently, we also propose to use the average daily yield over a one-month period.

5.80. The precise one-month period used will depend on when the updated EBIT allowance is due to take effect. We currently expect that this will be the July to September 2023 price cap period. due to price cap being announced in advance of each cap period, we consider a reasonable analysis cut-off date to be the 1st of May 2023, two months prior to the relevant cap period. This would imply an RFR calculated using the average daily yields in the month of April 2023.

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[70] CMA Funerals Market Study https://assets.publishing.service.gov.uk/media/5fdb2450d3bf7f40d1221889/Appendix_R_-_WACC_18.12.20.pdf para 47

[71] UKRN (2022), UKRN guidance for regulators on the methodology for setting the cost of capital - consultation, p13 https://ukrn.org.uk/publications/ukrn-guidance-for-regulators-on-the-methodology-for-setting-the-cost-of-capital-consultation/

Adjustments

5.81. As we do not intend to use benchmark assets other than UK government bonds, the only adjustments we might need to consider are those related to inflation. Whether inflation adjustments are required will depend on the final approach taken regarding the use of nominal or real RFR estimates based on nominal gilts or ILGs (see previous section).

5.82. CEPA in their report adjusted RPI based ILGs to reflect the gap between the RPI and CPI measures of inflation. They did this using the difference in rates on RPI and CPI inflation swaps, applying this difference to observed RPI based ILG yields to generate synthetic CPI ILG yields. Their justification for the use of swaps data over the independent forecasts of RPI and CPI rested on the high frequency of the data compared to forecasts and their market driven nature.

5.83. The use of inflation swap data to calculate the RPI-CPI wedge is unusual. UKRN guidance sets out that the use long-run inflation forecasts from official sources such as the Office for Budget Responsibility is the preferred approach.[72]

5.84. In line with this recommendation, Ofcom used OBR CPI and RPI forecasts taken from the end of the forecast period (2025/26) in their recent Wholesale Fixed Telecoms Market Review. Similarly, RIIO-2 price control uses OBR inflation forecasts, specifically the fifth year of the latest OBR forecast period.

5.85. Given these precedents and UKRN guidance we propose to use the latest OBR forecasts available two months prior to the price cap period where the updated EBIT allowance comes into effect, in line with our earlier proposal around the gilt yield observation period.

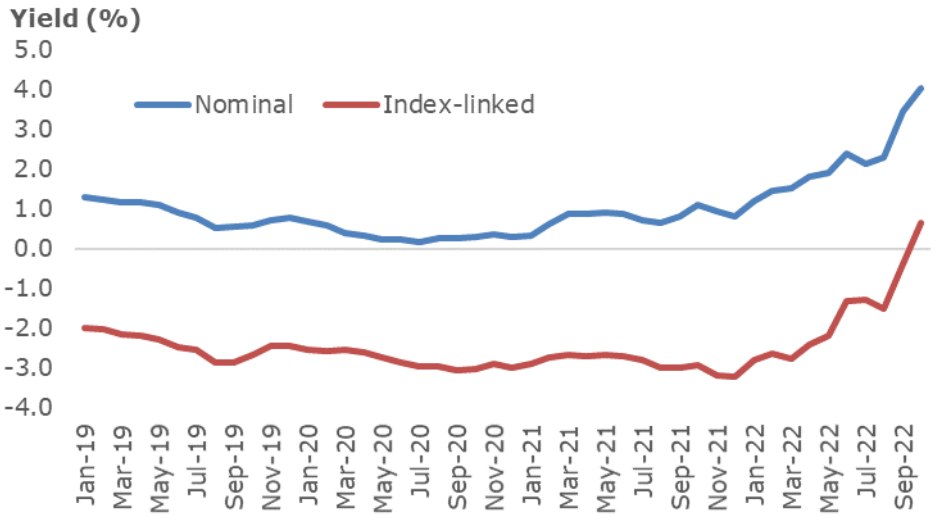
Forecast error

5.86. Setting the RFR once using a snapshot of data prior to the commencement of a price control period introduces the risk that the RFR value will not reflect the movement in rates over the course of the control period.

[72] UKRN (2022), UKRN guidance for regulators on the methodology for setting the cost of capital - consultation, p13 https://ukrn.org.uk/publications/ukrn-guidance-for-regulators-on-the-methodology-for-setting-the-cost-of-capital-consultation/

5.87. There is an expectation that rate will rise in the short to medium term. Figure 5.1 below shows the upward trend in the ten-year yields over 2022.

Figure 2: Monthly average yields on ten-year UK government gilts[73]



5.88. One way to reflect the potential for rates to rise over the ten-year horizon we have proposed is to use market-implied increases in interest rates over this period.

5.89. An example of this approach can be seen in Ofwat's draft and final determinations for their 2019 price controls.[74] They calculate the implied increase in interest rates between the date they observe in 2017 and the beginning and end of their price control period (March 2020 and March 2025). They do this for each day of yield curve data available over the course of a month. This generates multiple estimates of the implied rate rises at these two points (March 2020 and March 2025), from which they calculate the interquartile range as the low and high values separately for the two dates. They then adjust down these ranges by 20 basis points to reflect the 'term premium' embedded in forward rates. Finally, they then take the midpoint between the high and low March 2020 and March 2025 rate rise estimates to

[73] Source: Bank of England Database accessed on 10/11/2022; series IUMAMNZC and IUMAMRZC Bank of England Database: https://www.bankofengland.co.uk/boeapps/database/fromshowcolumns.asp?Travel=NIxSTxTIxSUx&FromSeries=1&ToSeries=50&DAT=RNG&FD=1&FM=Jan&FY=2019&TD=11&TM=Nov&TY=2022&FNY=&CSVF=TT&html.x=93&html.y=39&C=N5&C=UEY&Filter=N

[74] Ofwat (2017), Delivering Water 2020: Our final methodology for the 2019 price review, Appendix 12 https://www.ofwat.gov.uk/publication/delivering-water-2020-final-methodology-2019-price-review-appendix-12-aligning-risk-return/

generate a final high and low range. This range is then added onto the cotemporaneous yield range based on 10-year and 20-year gilts.

5.90. Ultimately however this approach was rejected by the CMA in their redetermination of these price controls.[75] The CMA cited evidence that forward rates do not offer a better assessment of future spot rates than current spot rates and that in flat or falling markets they are likely to give an actively misleading input into any RFR estimate. UKRN guidance on setting the RFR also advocates the use of contemporaneous gilt yields stating that "setting a risk-free rate by reference to recent data, without the use of forward rate adjustments, is likely to be preferable."[76]

5.91. An alternative, which addresses the risk of forecast error without the use of potentially misleading forward rates, is indexation. This is where the RFR, and consequently the CoC, is updated on a periodic basis to reflect the latest market data. This has the advantage of ensuring the RFR always reflects recent market data but comes at the cost of increased volatility in the CoC and therefore EBIT allowance. In practice this would require us to design and publish a new Appendix model for the EBIT allowance, or to modify and extend the EBIT input sheet in the main published DTC model.

5.92. We do not express a preferred approach in this consultation and would welcome stakeholders views on the relative merits of using recent spot rates versus forward rates versus indexation.

Question 15: Do you have a strong preference between setting the risk-free rate using recent data, forward rates or recent data but with indexation?

[75] CMA (2021), Ofwat Price Determinations, Final Report, paragraph 9.234 https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_---_web_version_-_CMA.pdf

[76] UKRN (2022), UKRN guidance for regulators on the methodology for setting the cost of capital - consultation, p13 https://ukrn.org.uk/publications/ukrn-guidance-for-regulators-on-the-methodology-for-setting-the-cost-of-capital-consultation/

CAPM components: Total Market Return

Context

5.93. The Total Market Return (TMR) parameter, sometimes called the Expected Market Return, measures the return expected by the marginal investor from holding a diversified portfolio of all investible securities. The difference between the TMR and RFR is the Market risk premium (MRP), which represents the additional compensation investors require for being invested in the market compared to the RFR. Under the CAPM framework, the MRP is multiplied by the beta parameter to give the risk premium specific to a given company.

5.94. The TMR is not specific to any sector and tends to be thought of as a relatively stable component of the cost of equity. As a result, the TMR is often estimated by looking at historical equity returns over a long period of time.

5.95. The CMA used a TMR range of 5% to 6.5% in their EMI report, reflecting a judgment made in a previous determination. CEPA use a range of 6.25% to 6.75%, reflecting the range used in the RIIO-2 price controls (T2, GD2 and ED2[77]).

Proposal

5.96. We propose to use the TMR range of 6.25% to 6.75%, with a midpoint of 6.5%, as used in the RIIO-2 price controls.

5.97. If we use a nominal RFR when estimating the MRP we will adjust this range using OBR CPI forecasts.

Overview of responses

5.98. Several suppliers, while generally supportive of the use of RIIO-2 determinations to set the TMR parameter, noted that a more recent historical inflation back-cast time series was released by the Office for National Statistics (ONS) in May 2022 and that the RIIO-2 TMR

[77] RIIO-ED2 draft determinations

estimate should be updated to reflect this newer data.[78] One supplier told us that taking account of this new data increases the TMR to approximately 7% in real (CPIH) terms.

5.99. A supplier also repeated a concern it shared as part of its RIIO-2 submission. This relates to the TMR estimate being based on the geometric average of historical returns with an uplift applied, rather than being calculated using the arithmetic average.

5.100. Finally, one stakeholder told us that the TMR should be set on a broader set of assets than just UK equities and that the CMA had previously agreed with this position, noting that there is some evidence suggesting total returns across all asset classes are lower than those on equities only.

Considerations

5.101. We consider deferring to the TMR used in the RIIO-2 price controls is justified as the parameter is not context-specific and the RIIO-2 approach has been subject to CMA scrutiny.[79] The CMA found that a TMR point estimate of 6.5% and a range of 6.25% to 6.75% was "not wrong". This conclusion included consideration of the approach taken to uplift the geometric mean.

5.102. We do not feel it is necessary to update the RIIO-2 TMR to reflect the more recently published CPIH historical series. The ONS back-cast of CPI and CPIH inflation are only indicative and are not as robust as official national statistics (such as current inflation series). As with any historical modelling, there is a large degree of uncertainty involved. Moreover, the 6.5% TMR used in the RIIO-2 determinations does not reflect any one estimation method, but instead incorporates a wide variety of evidence and methods.

5.103. We acknowledge the theoretical arguments in favour of using a wider set of investment assets when considering the TMR, and the likely downward pressure that would put on TMR. However, we consider the practical challenges of doing so and the robust

[78]ONS (2022), Consumer price inflation, historical estimates and recent trends, UK: 1950 to 2022 https://www.ons.gov.uk/economy/inflationandpriceindices/articles/consumerpriceinflationhistoricalestimatesandrecenttrendsuk/1950to2022

[79] CMA (2021), Final determination, Volume 2A : Joined Grounds : Cost of equity, Page 66-101 https://assets.publishing.service.gov.uk/media/617fe5468fa8f52980d93209/ELMA_Final_Determination_Vol_2A_publication.pdf

regulatory precedent for the dataset used in coming to the RIIO-2 TMR values as sufficient to justify the continued focus on equities.[80]

CAPM components: Systematic risk (Asset beta)

Context

5.104. The equity beta in the CAPM framework represents a company's exposure to systematic risk and is measured as the correlation between the returns of the company and returns in the wider market (eg how a listed company's share price tends to rise and fall in relation to the wider market).

5.105. Ideally this correlation can be calculated directly by regressing the observed returns of individual listed companies, or a portfolio of companies, on the returns of a wider diversified index of equities. However, if no – or limited – relevant companies are listed, this is not possible. In these circumstances, significantly more judgement is required in establishing reasonable proxies from within the relevant sector – or from other sectors – for which beta estimates do exist. This is effectively the situation we find ourselves in with regard to our notional standalone energy supplier, for which we wish to establish a CoC estimate.

5.106. By definition, the market-wide (or average) equity beta is equal to one. A key determinant of beta is leverage: the level of a company's debt to equity. However, as we are concerned with estimating the beta of a notional supplier – which we assume to be 100% equity-financed – we need to remove the impact of leverage on the betas of the proxies we consider. An unleveraged measure of beta is often called the asset beta. Assuming an average leverage of 30% implies that UK equities have, on average, an asset beta of 0.7.

5.107. The current CoC figure used in EBIT, taken from the CMA 2016 EMI report, assumes an asset beta of 0.7 to 0.8, suggesting approximately average exposure to systematic risk.[81] This was based on evidence from two main sources: UK grocery retailers (which had asset betas between 0.55 and 0.65) and the Canadian energy retailer Just Energy (which had an asset beta of between 0.9 and 1.2 at the time).[82]

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[80] The RIIO-2 TMR calculation uses the Credit Suisse Global Investment Returns Yearbook ("DMS Yearbook") as its source of data on annual returns.
[81] As we assume our notional supplier is 100% equity financed the equity beta is the same as the asset beta (or unlevered beta).
[82] CMA beta estimate ranges reflects monthly and quarterly data between January 2007 and March 2014

5.108. CEPA, in their report published alongside the August 2022 consultation, sought to update the CMA's assessment of beta using newer data. They concluded that 0.7 to 0.8 remained a plausible long-term estimate of beta. However, they also considered that a beta as high as 1.0 to 1.2 could be justified in the short-term (given the elevated risks suppliers face under current market conditions) where those risks are not accounted for elsewhere within the price cap.

Proposal

5.109. We propose to maintain an asset beta range of 0.7 to 0.8.

5.110. This reflects our proposed long-term time horizon for the CoC, our inclusion of risk capital in our capital employed estimates, and a lack of strong empirical evidence from comparative beta analysis to support higher values.

Overview of responses

5.111. Several suppliers indicated that they favoured the use of CEPA's short-term beta range of 1.0 to 1.2, as it better reflected their assessment that suppliers face increased risks due to market volatility and the design of the price cap.

5.112. Areas of increased risk cited by suppliers included volume risk from SVT churn and unexpected SVT demand as well as the risk of backwardation exceeding contango. Suppliers acknowledge the steps taken to mitigate these risks, such as the move to quarterly updates, the market stabilisation charge and the recovery of backwardation costs – but concluded that these mitigations were only partial, and that residual increases in risk remained.

5.113. One supplier said they believed the increased level of risk would likely persist even after markets stabilise. It said it would therefore be wrong to assume beta would revert towards the long-term range of 0.7 to 0.8. More generally, the supplier said that we should not use historical data to set future allowances when the future looks very different from the past.

5.114. Several suppliers expressed agreement with the high-level approach CEPA had taken to assess the appropriate beta, but again also stressed the increased risks they face. Some suppliers also noted CEPA's suggestion that these increased risks may not be best accounted for via a higher CoC, but rather through explicit cost allowances in the cap. Similarly, one supplier said that if we do not reflect these risks in a higher CoC via beta, then we must recognise it via an increase in the risk capital element of capital employed.

5.115. Other stakeholders told us that they disagreed with CEPA's use of Centrica as a comparator and a cross-check when assessing beta. They disagreed with CEPA's observation that the increasing share of Centrica's operating revenue coming from "supply & services" had made it a more useful comparator for an independent supplier. Suppliers noted that while "supply & services" made up the largest share of operating income in 2019 and 2020, the "services" largely referred to activities unrelated to that of an independent energy supplier (eg gas boiler insurance). According to one stakeholder, operating income from "supply" alone represented just 14% of operating income in 2019, compared to 50% when combined with "services". Another supplier criticised the CEPA report more generally for an overreliance on evidence from suppliers with elements of vertical or horizontal integration.

5.116. Several suppliers identified airlines within the aviation industry as having similar risks to those of energy suppliers, and therefore may serve as reasonable points of comparison when setting beta. One supplier said that both airlines and energy suppliers operate in competitive markets with consumer behaviour largely driven by price, both need to hedge a significant proportion of their costs, and both run relatively asset-light business models. Both suppliers also noted that airlines are not subject to a price cap or equivalent, which they stated would serve to increase the beta of energy suppliers compared to airlines.

5.117. Another supplier told us that CEPA's suggestion of a higher short-term beta and lower long-term beta would result in a pro-cyclical EBIT allowance (ie would be higher when prices are high and lower when prices are low). The supplier told us that suppliers need a stable EBIT in normal times, allowing them to build up a buffer ahead of a crisis, and that this would provide investors with confidence that any investment provided during an energy crisis would be paid back over time.

5.118. Finally, one stakeholder disagreed with the view that suppliers are currently exposed to greater systematic risk. It said that recent regulatory decisions had transferred risk from suppliers to customers. As examples, they referenced: the market stabilisation charge, quarterly cap updates, the inclusion of backwardation costs and changes to balancing costs.

Considerations

Beta comparisons

5.119. Establishing a plausible value, or range, for the asset beta of a UK-based supply-only business, in the absence of relevant UK listed companies, results in this exercise containing a significant element of judgement.

5.120. We approach this exercise by seeking to establish whether there is sufficient empirical evidence to justify a deviation from the beta range established by the CMA. We rely on the comparative beta analysis carried out by CEPA in doing this.

5.121. Evidence from within the energy sector shows asset betas of large vertically integrated energy companies with UK retail business have long-run asset betas between 0.4 and 0.7. In theory, we might expect the asset betas of companies with more diverse revenue sources – including from generation or possible networks – to have lower betas on average than an energy supplier.

5.122. However, the two companies CEPA identified as independent energy suppliers exhibit asset betas at the lower end of this range.[83] These represent a limited sample, and as a result CEPA stated that it did not consider it appropriate to use these estimates to draw conclusions about an appropriate asset beta for a notional independent supplier. While we accept that evidence from these companies alone is insufficient to reach a conclusion, they are nonetheless the two most directly relevant observations we have available and do not provide evidence in favour of increasing the current 0.7 to 0.8 beta range – in fact the opposite.

Table 4 Asset beta estimates by CEPA

Type	Company	Asset beta
Large vertically integrated	Centrica	0.68
	SSE	0.55
	EDF	0.48
	E.ON	0.51
	Iberdrola	0.45
	RWE	0.62
Standalone energy suppliers	Telecom Plus	0.40
	Just Energy	0.48

Notes: Asset betas shown are taken from CEPA report and are based on a 10-year estimation window, 30 April 2012 to 29 April 2022, and converted from equity to asset betas using the average gearing over that window.

[83] CEPA also considered Good Energy Group as an example of a UK listed independent energy supplier but excluded it on the basis of wide bid-ask spreads indicating low liquidity and therefore unreliable beta estimates.

5.123. When considering beta comparators outside of the energy sector, CEPA assessed that: grocery businesses had asset betas between 0.4 and 0.6, high street retailers between 0.6 and 1.0 and airlines between 0.9 and 1.2. As discussed above, some suppliers made the case that airlines should be considered reasonable comparators. In contrast, we judge that there are fundamental differences between the market for energy and the market for air travel that suggest airlines will be subject to greater systematic risk, even under current energy market conditions.

5.124. Demand for air travel is significantly more discretionary than the demand for energy. Consumption of some level of energy is a necessity in a way that is not the case for air travel. We would therefore expect airline returns to be more sensitive to overall economic or market conditions, suggesting a higher asset beta. This fundamental difference has not changed as a result of high energy prices. We would therefore expect the current asset beta of an energy supplier to be below that of an airline.

Systematic versus idiosyncratic risks

5.125. Most suppliers emphasised their assessment that the risks they face have increased since the CoC value (set by the CMA) was established. As set out in an earlier section, we are minded to set the CoC allowance using a standard CAPM approach. Under such an approach, the beta parameter only represents systematic risk. Establishing which, if any, of the risks (that suppliers have identified as having increased) are likely to strengthen the correlation between energy supplier returns and wider market returns – and thus leading to a higher asset beta – also relies primarily on qualitative judgements.

5.126. It is possible that the returns of our notional energy supplier and wider market returns are more strongly aligned under current conditions. For example, in the face of very high energy prices, it is possible that consumer demand for energy may become more sensitive to price and therefore more volatile, resulting in higher volume risk for suppliers and increasing the volatility of their returns. At the same time, high energy prices have been a key driver of general inflation – depressing consumer demand more widely and contributing to higher interest rates – which is likely to impact the returns of the market much more widely.

5.127. It is also possible that some of the risks suppliers identify as having increased should be considered idiosyncratic rather than systematic. For example, the residual risk identified associated with the existence of a dead-band around the backwardation allowance is highly specific to retail suppliers and is unlikely to have a bearing on the returns of the market more widely. Even if some increased risks do exhibit greater correlation with the market, the expected or realised cost associated with that risk may already be reflected by an allowance

within the cap – such as for debt-related costs. In such cases, also reflecting the risk via a higher CoC could result in overcompensation.

5.128. CEPA, in coming to their judgement that a higher "short-term" beta might be justified, acknowledged that some of the drivers behind a higher beta might not be "purely systematic risks from the perspective of CAPM".[84] They stated that placing too much emphasis on the assumptions of CAPM, in particular with respect to systematic risk and beta, could result in Ofgem "underestimating investors' required returns in the current market".[85]

5.129. To the extent that systematic risks have increased, or idiosyncratic risks do generate a demand from investors for a higher return, we do not believe using qualitative judgements to set an arbitrarily higher beta represents an analytically robust approach. The empirical evidence we have on asset betas does not point to values above 0.8, with the two suppliers that CEPA identified having asset betas substantially below this.

5.130. Even in a scenario where it was possible to robustly calibrate an uprating of the asset beta to reflect these qualitative judgements, we consider doing so risks overcompensating suppliers in the context of our proposal to include risk capital within our capital employed assumptions.

CAPM components: Tax rate

Context

5.131. Our aim is to establish a nominal pre-tax cost of capital. This is because the price cap aims to provide suppliers with sufficient pre-tax cash revenue to meet their efficiently incurred costs.

5.132. The CAPM framework provides us with a post-tax cost of equity estimate; we therefore need to convert this into a pre-tax figure. This is done by scaling the post-tax figure by 1 / (1 - *t*) where *t* is the tax-rate faced by energy suppliers over the relevant period.

5.133. In setting the tax rate parameter, we have two distinct options:

[84] CEPA (2022), Default Tariff Cap cost of capital, p32 https://www.ofgem.gov.uk/sites/default/files/2022-08/CEPAReport_DTCCostofCapital_2022.08.24.pdf
[85] CEPA (2022), Default Tariff Cap cost of capital, p32 https://www.ofgem.gov.uk/sites/default/files/2022-08/CEPAReport_DTCCostofCapital_2022.08.24.pdf

- Static value based on planned corporation tax rate: The main rate of Corporation Tax (CT) will increase to 25% from 1 April 2023. We would therefore use a 25% value when converting the cost of equity from a post-tax figure to a pre-tax one.
- Periodic updating: Given uncertainty about future corporation tax rates, we could update the value used to reflect the latest real-world position on a periodic basis.

Overview of responses

5.134. We did not receive responses related to this issue.

Considerations

Static value based on planned corporation tax rate

5.135. This has the advantage of being simple to implement and understand. However, as we are setting the CoC with a ten-year timeframe in mind, using a static value may result in a growing difference between the rate we use and the actual rate.

Periodic updating

5.136. Under this approach, the tax rate used would be updated on a periodic basis, ensuring that it reflected the rate faced by companies at the time. This option would complement the indexation option described for the RFR, and so while it would be possible to do one and not the other, it would seem sensible to either do both or neither.

5.137. As with the RFR indexation approach, the primary disadvantage of this approach is that it would increase the volatility of the CoC value and therefore EBIT allowance, reducing the level of certainty for investors and energy suppliers.

Question 16: Should the tax rate be updated? If yes, how frequently?

6. Amending the EBIT allowance methodology

This chapter sets out our analysis of the options for implementing a calculated return on capital employed as an allowance under the cap. Our proposed approach is to:

- Use a hybrid approach to scale EBIT with the overall cap level, made up of a fixed component that does not change between price cap periods and a variable component that scales with the overall cap level.
- Review the EBIT methodology and its parameters in future only when there are *significant* changes to the context in which suppliers operate.
- Apply the EBIT allowance in a way that does not change the ratio of unit charge to the standing charge.

We welcome stakeholder views on this approach.

Context

6.1. In 2018, we decided to implement the EBIT allowance as a fixed percentage of the cost allowances in the cap (excluding headroom and VAT).[86] The rate was set at 1.9% and based on the CMA's estimate of Return on Capital Employed (ROCE) as a percentage of EBIT.[87]

Equation 1: EBIT allowance calculation

$$\text{EBIT allowance} = \frac{1.9\%}{1-1.9\%}\left(\begin{array}{c}\text{Wholesale allowance} + \\ \text{Network allowance} + \\ \text{Policy cost allowance} + \\ \text{Operating cost allowance} + \\ \text{Payment method uplift}\end{array}\right)$$

[86] https://www.ofgem.gov.uk/sites/default/files/docs/2018/11/appendix_9_-_ebit.pdf
[87] The percentage applied is 1.9%/(1-1.9%). This is in order to account for the EBIT allowance itself.

6.2. For each new cap period, the EBIT allowance amount in £ is recalculated based on changes in the cost allowances, but the percentage margin is kept constant. Hence the EBIT allowance largely scales with the overall cap level.

6.3. In the August consultation, we asked for stakeholders' views on:

- Whether a fixed percentage rate was the most appropriate method to implement the EBIT allowance; or whether a fixed cash figure, a hybrid (partly fixed and partly variable) approach, or a percentage rate subject to a cap and collar would be more appropriate.
- When the EBIT allowance parameters and methodology should be reviewed in future, and what conditions would justify or require such a review.

6.4. The themes of those two questions remain the primary focus of this chapter.

Implementation of the EBIT allowance within the cap

6.5. Our bottom-up calculation of EBIT estimates the return on capital employed, based on multiplying together estimates of capital employed by the cost of capital. The analysis has to be conducted at a specific point in time, and give an estimate linked to the conditions prevailing at that time. This could potentially be July 2023 (cap period 10b) when the revised EBIT allowance is due to be implemented.

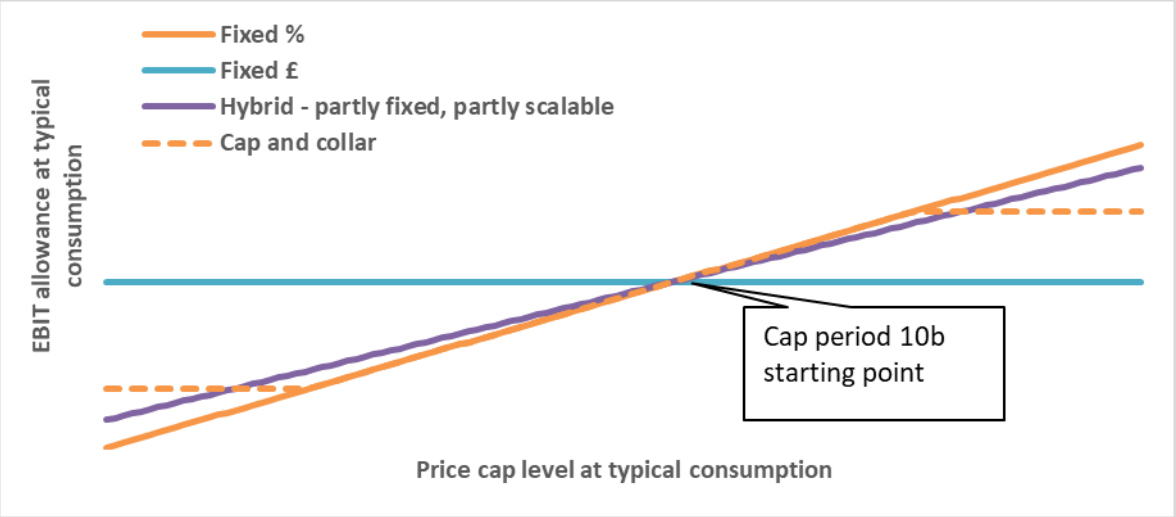
6.6. In the August policy consultation, we presented four options on the relationship between changes to the price cap level and the EBIT allowance (or in other words – how the allowance could scale):

- **A fixed percentage approach** (*existing approach*) – set a percentage margin based on the cap level and ROCE when the new EBIT allowance is implemented. This approach would be appropriate if the capital employed required by a supply business scales linearly with the overall cap level.
- **A fixed cash amount** – setting an estimate of ROCE as the cash figure. The EBIT allowance would only change if ROCE was re-estimated periodically. This approach would be appropriate if there was little or no relationship between the level of cost allowances and capital needed; or if periodic reviews were a sufficiently flexible mechanism to adapt to changing conditions.
- **A hybrid approach** – setting a partly fixed EBIT return and using the estimate of ROCE to calibrate what the residual scaling component should be. The larger the share of capital employed considered to be fixed, the less the EBIT allowance would vary

with changes in wholesale prices. This approach would be most appropriate if part of capital employed scales and part remains fixed in response to changes in costs.

- **A fixed percentage within a cap and collar** – set as with a fixed percentage approach, with the addition of upper and lower bounds. This would be most appropriate if there is a linear relationship within a certain range of prices.

Figure 3: EBIT allowance scaling illustration



6.7. As can be seen from the chart above, at lower price cap levels, a hybrid approach would result in a higher EBIT than a fixed percentage; but at higher price levels EBIT would increase less quickly. A fixed cash approach would not vary at all, and a cap and collar approach would set limits on variation.

6.8. Our view is that the hybrid approach is preferable to the other approaches as it is most reflective of how capital requirements vary at different overall cap levels. It recognises that some components are unlikely to scale with the cap (e.g. fixed assets or ringfencing of ROs).[88]

6.9. We have received qualitative information on the relationships between capital employed and the overall cap level, or the level of wholesale price volatility — but we have received limited quantitative evidence of these relationships so far.

[88] Pending final decision in the financial resilience workstream. See consultation: https://www.ofgem.gov.uk/publications/statutory-consultation-strengthening-financial-resilience

6.10. We propose a hybrid approach with fixed and scaling elements:

- The intercept of the line set at the return on the fixed capital employed components (potentially fixed assets and RO-ringfenced payments).
- Assuming a linear relationship between cap level (excluding headroom, VAT and the EBIT allowance itself) and the EBIT allowance.

6.11. Setting the slope of the line using two points:

- Point 1: the return on the fixed capital employed components at cap level of zero.
- Point 2: the return on capital employed estimate at the cap level in period 10b[89] (excluding headroom, VAT and the EBIT allowance itself).

6.12. We consider the above approach strikes an appropriate balance between cost reflectivity and simplicity. We welcome stakeholder views on alternative quantifiable approaches.

Overview of responses

6.13. Respondents to the consultation did not favour a fixed figure amount approach. They considered that most of the elements of capital employed scaled linearly with changes in the overall cap level, in particular: working capital, collateral capital and risk capital. Ofgem agrees with respondents that capital employed broadly varies with changes in the overall cap level and thus a fully fixed approach would be inappropriate. On the other hand, we are of the view that some components may stay fixed over time.

6.14. Few respondents commented on the cap and collar approach in depth, other than a few noting the potential unintended consequences of introducing an artificial rigidity.

6.15. Several suppliers supported a continuation of the fixed percentage approach, arguing that it was most likely to be cost-reflective. They said that any sub-linear scaling elements were offset by elements that scaled more than linearly.

6.16. Several respondents supported a hybrid model of some kind, with a partly fixed element and partly scaling element. Respondents were not generally explicit about what the

[89] This could change should we decide to start implementation in a different cap period. Regardless, our proposal is that point two would be the cap level at the start of the implementation period.

fixed element and scaling elements should be, but one highlighted RO payments as a fixed cost. A few respondents supported a hybrid approach that included a volatility component.

Considerations

6.17. We agree with respondents that overall capital employed varies with changes in the overall cap level, and so a fully fixed approach would be inappropriate. At the same time, we consider some components such as fixed assets and RO ringfencing do not vary. Hence a hybrid approach is likely to be more cost reflective than a fixed percentage or a fixed figure amount approach.

6.18. In theory, wholesale price volatility can also drive capital employed levels. However, we have not been provided with evidence on how to establish a relationship between volatility and capital employed. We also consider that scaling the EBIT allowance based on volatility could unduly complicate the calculation of the EBIT allowance. We welcome stakeholder views on a method that could be used to link between wholesale price volatility and capital employed levels, but at the same time be balanced against simplicity of setting the EBIT allowance, and its suitability with the concept of a notional supplier.

Question 17: Do you agree that a hybrid approach strikes an appropriate balance between cost reflectivity and simplicity? Do you agree that it is the most appropriate approach to implement in practice?

Question 18: Do you agree that fixed assets and potentially RO ringfencing should be considered as part of the fixed components? Which other components may be fixed?

Question 19: Should the EBIT calculation include a component that adjusts based on market volatility? How could such an approach be quantified and implemented?

Timing of reviews of the EBIT allowance methodology and parameters

6.19. Our hybrid approach proposal for the EBIT allowance ensures that allowance is responsive to changes in overall price cap level. Nevertheless, some changes to circumstances may mean that underlying assumptions, such as on base capital employed level and cost of capital, need reviewing.

6.20. We propose to review the methodology and parameters subject to changes in the context which suppliers operate. Those could include *significant* changes to:

- Wholesale price levels or their volatility;
- Energy retail regulation or policy; and,
- Structure and number of suppliers that operate in the market.

6.21. We note that the EBIT allowance is only one way of addressing changes to the risk that suppliers are facing. In the first instance, we aim to reflect changes in risk as part of existing cap allowances or ex-post adjustments when needed.

6.22. It is also worth noting that, following amendments made through the Energy Price Act 2022, the cap is no longer subject to a sunset clause and is an enduring policy – although the Secretary of State may give notice at any time that the tariff cap ceases to have effect. If the cap remained due to end in 2023, the likelihood of a need to review EBIT again would be small. Under the new enduring regime, the possibility of significant changes in the context in which supplier operate has increased.

Overview of responses

6.23. Some respondents suggested that periodic reviews could take place every few years. Others suggested that the most important factor would be whether there have been market or policy changes that suggest a re-examination of the allowance assumptions and methodology may be needed.

6.24. Several respondents noted that if Ofgem reviewed the profit allowance methodology frequently, that would add regulatory risk and reduce investor confidence, thus increasing the cost of capital for suppliers and making it harder for them to attract financing.

6.25. Most respondents agreed that there should now be a review of the EBIT allowance due to the changing market conditions. This being said, several expressed a desire that the review take more time to conclude and take a holistic view across other elements of the price cap and financial regulation, rather than a narrow technical review in isolation. We decided to publish a policy consultation to gather further evidence before moving to statutory consultation.

Considerations

6.26. We note a trade-off between a long-term EBIT allowance and one that is periodically reviewed; the former provides more certainty to investors about their returns. On the other hand, keeping the EBIT allowance methodology unchanged in the face of significant changes to supplier circumstances could lead to excess profits – ultimately borne by consumers – or excess losses, which may compromise suppliers' financeability.

6.27. We therefore consider that a review based on the conditions set out in our proposal above strikes a good balance between certainty (the allowance methodology is kept unchanged unless there are significant changes) and confidence that the allowance is responsive to market shocks, such as the energy crisis we are currently facing.

6.28. On the current timing of reviewing the EBIT allowance, we set out our reasoning for a case for change in Chapter 3. This represents significant changes in the context in which suppliers operate and echoes our proposal in this section.

Question 20: Do you agree that Ofgem should not schedule periodic reviews for the EBIT allowance methodology? If you disagree, how frequent should those reviews be?

Question 21: Do you agree with the conditions we identified as constituting significant changes to the context in which suppliers operate? Are there any other changes that should be included?

Applying the EBIT allowance to nil consumption cap and typical consumption cap

6.29. Currently, the EBIT allowance is applied to the cost allowances in the nil consumption cap in the same way as the typical consumption cap: the same 1.9363% uplift is applied to the relevant allowances. This means that the EBIT allowance does not change the ratio of standing charges to unit rates as it varies over time.

6.30. If the EBIT allowance continues to be set as a fixed percentage, the above result would continue. If the EBIT allowance is set with a hybrid approach, it could be implemented in the nil consumption cap in two ways:

- Option 1: the EBIT allowance in the nil consumption cap is set as the fixed amount, with the typical consumption cap including the fixed and scalable element.

- Option 2: the EBIT allowance in the nil consumption cap is set as the equivalent percentage rate of the fixed and scalable element, applied to the typical consumption cap level – keeping the ratio of standing charge to unit charge unchanged.

6.31. Option 1 is arguably more cost reflective, as the fixed component of capital does not reduce with lower consumption and the allowance provides a return consistent with this. However, this approach may lead to distributional implications, disadvantaging low consumption households (given it is likely to result in a higher EBIT allowance for those households). In our 2018 decision, we departed from cost reflectivity in setting the allowances in the nil consumption cap so as not to increase them beyond existing market practice. We therefore propose to implement option 2, in which the EBIT allowance does not change the ratio of standing charges to unit charges.

Q22: Do you agree with our proposal to apply the EBIT allowance in a way that does not change the ratio of standing charges to unit charges?

Appendix 1 – Working and risk capital modelling approach

Introduction

A1.1 Ofgem commissioned CEPA to develop a financial model of a notional efficient energy supplier, which informs the setting of a level of working and risk capital that we plan on using to inform the EBIT allowance calculation.

A1.2 It is a bottom-up financial model that estimates the notional efficient energy supplier's capital employed requirements (fixed assets plus working capital) using some simplifying assumptions. The model solves equity injection needed to keep the notional supplier financeable over a two-year time horizon.

A1.3 We may use this model to estimate a range for the level of capital employed for the notional supplier under different market scenarios. Under the base case scenario, the range shows the level of capital employed the notional suppliers would need to operate in a wholesale price environment which represents a stable and high wholesale cost market based on our simulation modelling results (discussed in input section). We use this range as the fixed assets and working capital requirements for the notional supplier. Then we explore the potential implications of stressing the notional supplier's finance under different market scenarios, for example, elevated volume risks due to volatile wholesale prices and customer churn. The difference in the range between scenarios could indicate the need for risk capital.

How the model works

A1.4 The model calculates the starting shareholder equity injection needed and assumes the notional supplier maintains a positive net cash balance or prespecified liquidity ratio over the two-year period. This simulates the capital the supplier would be requiring a return on.

A1.5 Combining this and model inputs, the model produces the notional supplier's monthly balance sheet. From the balance sheet, we can obtain a measure of capital employed as fixed assets plus working capital (or risk capital under a range of scenarios). The model assumes £85 of fixed assets per customer (as discussed in Chapter 4) when producing the financial statements output.

A1.6 To produce the notional supplier's balance sheet and cashflow statement we represent an ongoing supplier (as opposed to a new entrant), so we incorporate some opening balances into the model. This includes opening fixed assets, direct debt balance, standard credit debit balances, fuel liabilities, RO liabilities, and tax liabilities.

A1.7 The model also produces the notional supplier's balance sheets under different scenarios, including forecast wholesale prices scenarios and associated volume risks costs. The modelling approach for forecasting wholesale prices and volume risks costs is the same as we used in our August 2022 paper – Changes to the wholesale methodology - distributional impact[90] and May 2022 consultation on changes to the wholesale methodology.[91]

A1.8 The difference in the working capital requirements between a high wholesale price scenario with elevated volume risks and base case scenarios could be viewed as the level of risk capital that the notional supplier should be holding.

Key assumptions

A1.9 The key assumption is that we are modelling an efficient notional energy supplier serving only default tariff /SVT customers. Therefore, the key inputs to modelling the notional supplier's costs and revenues are the allowances and the assumptions that underpin them. Details are discussed in the inputs sub-section below.

A1.10 As discussed in Chapter 4, we assume the notional supplier does not have access to long term credit, so it is 100% equity funded. The model focuses on solving the notional supplier's operational cashflow, as such, it assumes the notional supplier neither receives the EBIT allowance nor pays dividends. This is a conservative assumption which maintains that profit is directly distributed as a return to shareholders.

A1.11 The model is sensitive to the starting point in which the supplier operates. Hence, if we start the two-year period after the winter, the model notional supplier is building-up positive cashflow due to positive customer balance (requiring a lower equity injection). Conversely, if the model starting point is before the winter, the notional supplier accumulates a negative cashflow due to negative customer balances. We would carry out sensitivity tests to measure the effect of different starting points.

[90] Ofgem (2022), Price cap-Changes to the wholesale methodology- distributional impacts https://www.ofgem.gov.uk/sites/default/files/2022-06/Price%20cap%20-%20Changes%20to%20the%20wholesale%20methodology%20-%20Distributional%20Impacts.pdf
[91] Ofgem (2022), Price cap- Statutory consultation on changes to the wholesale methodology. https://www.ofgem.gov.uk/publications/price-cap-statutory-consultation-changes-wholesale-methodology

Key inputs

Cost items

Fuel costs

A1.12 The model assumes the notional supplier incurs efficient fuel costs reflecting what it can recover if it hedges according to the cap (3-1.5-12) [92]. We use the monthly average of wholesale cost allowance (including backwardation costs, this reflects the updated wholesale methodology) for each three-month cap period, although in practice wholesale costs vary month-to-month within the cap period.

A1.13 In addition, we estimate wholesale cost allowances for future cap periods as inputs in the model, ie from July 2023 onwards (aligning with when we currently expect to issue a decision on the EBIT allowance). We use a stochastic modelling of current energy prices forecasted forwards to estimate the wholesale costs for four quarters as the inputs for fuel costs in the model, and the next four quarters are based on the fourth quarter's forward inputs. This is consistent with the approach that we used in our changes to the wholesale methodology through our consultation and decision and distributional impacts papers.[93] Using historical gas and electricity forward curves, we applied stochastic modelling to forecast a wide range of potential price paths (we ran 5,000 simulations). This gives us a distribution around the currently observed forward curves.

A1.14 From a cashflow perspective, we assume fuel expenditures are paid in the month after delivery (ie the month after they are incurred). We consider this is the standard practice of commercial contracts in the sector.

Other costs

[92] We express the price cap formula in an index with the format X-Y-Z [A], where X is the price observation period, Y is the lag period between the end of the observation period and the start of the price cap period starting, Z is the length of forward contracts observed and A is the period for which the cap is in place, all in months. So for example a 3-1.5-12 [3] index for delivery starting 01 October 2023 means a 3 month observation period running from mid-May to mid-August where 12 month forward prices are observed. There is then a lag of 1.5 months from mid-August until the cap starts on the 01 October. And the cap runs for three months from 01 October to 31 December.
[93] Price cap - Changes to the wholesale methodology - distributional impacts https://www.ofgem.gov.uk/sites/default/files/2022-06/Price%20cap%20-%20Changes%20to%20the%20wholesale%20methodology%20-%20Distributional%20Impacts.pdf

A1.15 The model also assumes other costs, including policy costs, network costs, operating costs and depreciation costs are incurred by the notional supplier efficiently and can be recovered through the cap allowances. Those are based on the current cap methodology and policies.

A1.16 We also make assumptions of the timing of payments for these costs from a cashflow point of view. For example, we assume fuel costs are paid in the month after delivery. However, the timing of the payment can impact suppliers' working capital/cashflow. The model has built the flexibility to test these impacts of different payment timing choices.

Revenue items

A1.17 For each cap period we calculate a standing charge and unit rate using, summing up the calculated cap allowances. We derive a customer base for each fuel and meter type that reflects the UK average for the split between single-rate and multi-rate electricity meters, and the UK average split by payment type for each meter type. The aim is to generate a notional supplier that represent the 'average supplier' in terms of customer base. Across the customer base, the average annual consumption is set for each fuel and meter type.

A1.18 Total earned revenue each month is the sum of revenue from standing charges and unit rates. The standing charges for each cap period are multiplied by the customer base and number of days in each month to derive total standing charge revenue. Unit rate charges for each cap period are multiplied by the relevant customer numbers for each fuel and payment type, multiplied by the monthly demand figure.

A1.19 From a cashflow perspective, we make different assumptions about the timing of income from customers depending on the payment method:

- **Direct debit** customers payments are smoothed over the year so that they pay similar monthly amounts in summer as they do in winter. We replicate this by dividing annual consumption by 12 and multiplying the smoothed consumption by the relevant DTC unit rate and standing charge
- **Standard credit** customers pay one month in arrears, assuming that they are billed at the end of each relevant month.

Appendix 2 – Consultation Questions and RFI

Questions for all stakeholders interested in responding to the policy consultation

Chapter 2

- *Question 1: Are there any issues we should consider in relation to our proposed 1 July 2023 implementation?*

Chapter 3

- *Question 2: Do you agree with our assessment on the case for change?*

Chapter 4

- *Question 3: Do you agree with our proposal to include fixed assets as a component of capital employed and the suggested level?*
- *Question 4: Do you agree that our estimate of fixed assets for a notional supplier is representative of current market conditions?*
- *Question 5: What do you see as the minimum level of working capital required for a supplier to be able to operate and which method should we use to set it?*
- *Question 6: How can the relationship between wholesale prices and their volatility, and working capital be quantified?*
- *Question 7: Do you agree with our proposal to include wholesale cost volatility and unexpected demand shock as key drivers of volume risk when calculating suppliers' risk capital requirements?*
- *Question 8: Do you agree with our assessment that backwardation, bad debt, and shaping and imbalances costs are accounted for in the existing cap allowances and that their inclusion within the EBIT allowance could lead to double counting?*
- *Question 9: Do you propose an alternative approach for measuring risk capital which is preferable to the approach we describe in this section and Appendix 1? In your approach, how do you model the relationship between wholesale price volatility and risk capital under stress test scenarios?*
- *Question 10: Do you have a view on a preferred approach with regards to the treatment of collateral under the cap?*
- *Question 11: How are the collateral requirements calculated? Is it possible to quantify the relationship between collateral, wholesale prices and volatility?*
- *Question 12: Do the wholesale collateral requirements mechanisms differ for trading on exchange vs trading over-the-counter?*
- *Question 13: Does posting collateral affect the level of risk capital employed?*

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- *Question 14: Should the cost of capital allowance compensate for inflation risk? If so, how?*
- *Question 15: Do you have a strong preference between setting the risk-free rate using recent data, forward rates or recent data but with indexation?*
- *Question 16: Should the tax rate be updated? If yes, how frequently?*

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- *Question 17: Do you agree that a hybrid approach strikes an appropriate balance between cost reflectivity and simplicity? Do you agree that it is the most appropriate approach to implement in practice?*
- *Question 18: Do you agree that fixed assets and potentially RO ringfencing should be considered as part of the fixed components? Which other components may be fixed?*
- *Question 19: Should the EBIT calculation include a component that adjusts based on market volatility? How could such an approach be quantified and implemented?*
- *Question 20: Do you agree that Ofgem should not schedule periodic reviews for the EBIT allowance methodology? If you disagree, how frequent should those reviews be?*
- *Question 21: Do you agree with the conditions we identified as constituting significant changes to the context in which suppliers operate? Are there any other conditions that should be included?*
- *Question 22: Do you agree with our proposal to apply the EBIT allowance in a way that does not change the ratio of standing charges to unit charges?*

Questions in EBIT capital employed RFI

For the following questions, please provide unless specified a figure as of October 2022 and indicate, when available, figures for domestic SVT customers only.

- *Question 1: Do you have access to a short-term/overdraft credit facility?*
- *Question 2: If yes, who provides that facility?*
- *Question 3: If yes, what is the cost of this facility? Eg arrangement fees, commitment fees, interest margins*
- *Question 4: Do you trade on your own account or do you use a trading partner?*
- *Question 5: If using a trading partner, what are the typical trading fees?*
- *Question 6: If using a trading partner, does the partner allow for collateral free trading?*
- *Question 7: If the amount of collateral free trading is capped, what is the maximum collateral free trading allowance?*
- *Question 8: Do you use letters of credits/letters of guarantees to meet some of your collateral obligations?*

- *Question 9: On average, what is the percentage of total collateral held in cash over the past two years?*
- *Question 10: How do you finance risk capital? This can include cash, equity, undrawn facilities, etc*

For the following questions, please provide a monthly figure over a two-year period and indicate, when available, figures for domestic SVT customers only.

- *Question 11: How much working capital did you hold at the specified month?*
- *Question 12: If you have access to a short-term/ overdraft credit facility, how much was drawn from that facility at the specified month?*
- *Question 13: If you have access to a short-term / overdraft credit facility, what was the maximum amount which could be drawn from that facility at the specified month?*
- *Question 14: How much collateral did you hold at the specified month?*
- *Question 15: How much wholesale collateral did you hold at the specified month?*
- *Question 16: What was the percentage of the initial margin in the wholesale collateral's total margins (initial + variation)?*
- *Question 17: How much network collateral did you hold at the specified month?*
- *Question 18: How much balancing collateral did you hold at the specified month?*
- *Question 19: How much collateral did you hold per customer at the specified month?*
- *Question 20: How much did you estimate your risk capital per customer at the specific month?*
- *Question 21: How many SVT customers did you have at the specific month?*
- *Question 22: How much gas and electricity did you sell to SVT customers at the specific month? Please provide total volumes for the month*

Appendix 3 – Privacy notice on consultations

Personal data

The following explains your rights and gives you the information you are entitled to under the UK General Data Protection Regulation (UK GDPR).

Note that this section only refers to your personal data (your name address and anything that could be used to identify you personally) not the content of your response to the consultation.

1. The identity of the controller and contact details of our Data Protection Officer

The Gas and Electricity Markets Authority is the controller, (for ease of reference, "Ofgem"). The Data Protection Officer can be contacted at dpo@ofgem.gov.uk

2. Why we are collecting your personal data

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

3. Our legal basis for processing your personal data

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest. i.e. a consultation.

3. With whom we will be sharing your personal data

We may share consultation responses with BEIS (including your personal data, if that is necessary under the above legal basis) when requested

4. For how long we will keep your personal data, or criteria used to determine the retention period.

Your personal data will be held for six months after the project, including subsequent projects or legal proceedings regarding a decision based on this consultation, is closed.

5. Your rights

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data
- access your personal data
- have personal data corrected if it is inaccurate or incomplete
- ask us to delete personal data when we no longer need it

- ask us to restrict how we process your data
- get your data from us and re-use it across other services
- object to certain ways we use your data
- be safeguarded against risks where decisions based on your data are taken entirely automatically
- tell us if we can share your information with 3rd parties
- tell us your preferred frequency, content and format of our communications with you
- to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at https://ico.org.uk/, or telephone 0303 123 1113.

6. Your personal data will not be sent overseas

7. Your personal data will not be used for any automated decision making.

8. Your personal data will be stored in a secure government IT system.

9. More information For more information on how Ofgem processes your data, click on the link to our "Ofgem privacy promise".[94]

[94] Ofgem privacy policy: https://www.ofgem.gov.uk/ofgem-privacy-policy