

ENA Response to
Ofgem RIIO-3 SSMC
Finance Annex
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Introduction

This response is submitted on behalf of ENA's TO, GDN and DNO members. It therefore does not consider any sector-specific or company-specific evidence. Members will provide any such evidence in their individual responses to the RIIO-3 Sector Specific Methodology Consultation (SSMC).

This submission is supported by the following reports:

- NERA, Additional Cost of Borrowing for the RIIO-3 Price Control
- Frontier Economics, Initial consideration of break-even inflation for price control purposes
- Oxera, RIIO-3 cost of equity
- Frontier Economics, Equity Investability in RIIO-3
- Frontier Economics, The low beta puzzle

These reports provide some of the detailed evidence in support of our positions.

Executive summary

The context in which RIIO-3 financial policies will be determined is very different to the RIIO-2 context. Macroeconomic conditions have changed significantly since the RIIO-2 determinations. The monetary policy environment has abruptly changed in response to major global shocks that have affected both real and financial markets. Since the RIIO-GD2 and -T2 decisions, yields on Index Linked Gilts (ILGs) have increased by around 3.5% - a huge increase over a relatively short period of time. Over the same period of time, the Bank of England base rate has increased from close to zero to 5.25% today. The era of cheap money is gone. Ofgem will need to adapt its regulatory financial policies and decisions to recognise the very different circumstances under which networks will need to raise finance during RIIO-3.

All energy networks face heightened risks relative to RIIO-2. These risks will be reflected in investors' perception of the risks associated with investing in energy networks and therefore in the financing costs that networks will bear. For electricity transmission networks, the scale and pace of investment programmes in RIIO-3 in support of the changes needed to achieve net zero will be unprecedented. The sheer number and scale of projects and programmes, and the associated delivery challenges, compressed outages, planning and consenting challenges, and reputational challenges will be at a scale never experienced before. Gas networks will need to maintain safe and reliable gas supplies for as long as the network is energised and customers are reliant upon it. They will need to do this against the backdrop of asset stranding risk, and the potential challenges of transforming their assets to serve future alternative gas/heating vectors over an uncertain proportion of their network. All networks face further risk increases due to supply chain, inflationary and workforce availability pressures, increasing threats to the resilience and reliability of their networks arising from the effects of climate change and increasing threats such as cyber security. All these factors will further increase financing costs for RIIO-3 beyond the increases that will arise due to changes in the macroeconomic environment.

Customers and society have never been more reliant on the provision of safe and secure energy supplies. The consequences for customers and society of getting RIIO-3 financing decisions wrong would be very significant. If the allowed rate of return is insufficient, then there is a clear risk that companies may be unable to attract the capital needed to finance the investment required, or retain existing capital. If networks cannot attract and retain the required capital, then this will immediately hamper the ability of any company to deliver what customers and society require of them.

Against this backdrop, Ofgem is right to introduce the concept of investability into the RIIO-3 framework, but it is equally important for gas networks as it is for electricity networks. Investability assessment must be a central component Ofgem's design of the RIIO-3 financial framework and must be applied to existing and new debt and equity. This is a point that has also been picked up by the new Chair of GEMA at recent industry events.

For cost of debt allowances, any potential changes in response to the "inflation leverage effect" must be considered and tested very carefully and in a manner that continues to recognise the need for regulatory stability and predictability. It has not been shown that the current arrangements are a detriment to customers over the longer term. We believe investor confidence will be best achieved by retaining the status quo position on the treatment of RAV indexation, as applied in RIIO-2, for RIIO-3 (which is reliant on independent CPIH inflation forecasts provided by Office for Budget Responsibility (OBR)).

In any case, significantly more work is needed to develop the detail on all options to address the "inflation leverage effect", including whether they deliver on financeability and investability objectives or require consequential changes to other aspects of the price control package.

Additional borrowing cost allowances will need to increase in RIIO-3 to reflect changes in market rates, improved allowance estimation approaches and efficient costs incurred by networks that are not compensated in Ofgem's RIIO-2 approach. NERA estimates additional cost of borrowing of 57 bps p.a. for RIIO-3, with a range of 54 to 59 bps, compared to Ofgem's RIIO-2 allowance of 25 bps. Additionally, NERA estimates an infrequent issuer premia of 14 bps p.a, with a range of 10-18 bps. NERA's analysis does not take account of any sector-specific or company-specific factors.

For cost of equity allowances, market evidence shows that rolling forward Ofgem's RIIO-2 approach would determine a range and point estimate that is too low – such a price control would not be investable. Ofgem will need to make adjustments to its RIIO-2 Capital Asset Pricing Model (CAPM) parameter estimates to reflect latest market conditions and new evidence. Firstly, Ofgem will need to adapt its evaluation of CAPM parameters, including Risk Free Rate (RFR), Total Market Returns (TMR) and equity beta to determine a more appropriate cost of equity range. The selection of a beta range for RIIO-3 will require particularly careful consideration due to beta data volatility. There is no reason to expect that the risk of energy networks will have decreased in RIIO-3, either in absolute terms or relative to the wider economy. Indeed, there is evidence that increasing risks should be reflected in increasing beta values.

We believe that it is possible to make the changes necessary to secure an appropriate cost of equity range and point estimate and remain compliant with the UKRN Guidance. These changes would be consistent with regulatory precedent and would promote regulatory certainty and stability. Oxera recommends a cost of equity range of 5.08 - 6.48% (CPIH real). Oxera's analysis does not take account of sector-specific forward-looking risk.

To test whether any point estimate within the range is investable, both Oxera and Frontier Economics recommend using tests that consider whether, for energy networks, the return on equity is sufficient given the return on debt, and the evident difference in risk between these two classes of investment. Equity investability cross-checks consistently show that only values towards the upper end of the Oxera CAPM range would leave energy companies investable. Evidence from Frontier Economics' hybrid bond cross check indicates that the cost of equity should fall in the range 5.8% to 8.5%, with a central estimate of 6.7%. Oxera's asset risk premium (ARP) - debt risk premium (DRP) cross check currently supports a cost of equity towards the upper end of the Oxera range (~6.48%). Taking the range of investability evidence into account, Frontier Economics concludes that an appropriate allowed cost of equity is likely to be at least in line with the top end of Oxera's estimated RIIO-3 range, and if anything higher than this.

We look forward to meeting with Ofgem to explore our evidence in more detail.

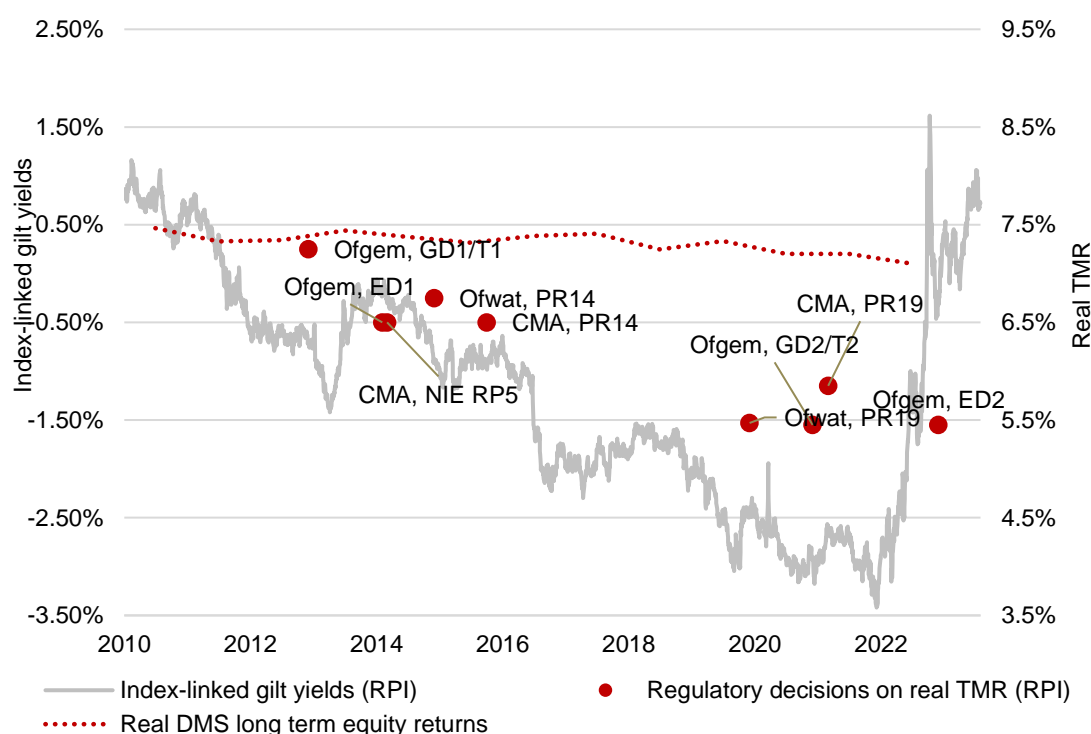
The context in which RIIO-3 financial policies will be determined is very different to the RIIO-2 context

Macroeconomic conditions have changed significantly since the RIIO-2 determinations and since the UKRN Guidance was developed

The RIIO-2 financial framework was determined during a period of sustained negative real gilt rates following the global financial crisis. Ofgem calibrated its returns for RIIO-ED1 and RIIO-2 in light of these prevailing economic conditions, lowering its estimates of TMR and therefore cost of equity over time in response to the fall in gilt yields and subjective assessment of wider market evidence including interest rates.¹ The UKRN guidance for regulators on the methodology for setting the cost of capital ("UKRN Guidance") was developed and consulted on during the same era of low-cost finance.

Macroeconomic conditions have changed markedly since then. The monetary policy environment has abruptly changed, in response to major global shocks that have affected both real and financial markets. As shown in figure 1, since RIIO-2 decisions, yields on ILGs have increased by around 3.5% - a huge increase over a relatively short period of time.

Figure 1 - Long run TMR as estimated by Dimson, Marsh and Staunton (DMS), regulatory decisions on TMR and yields on 20 year ILGs



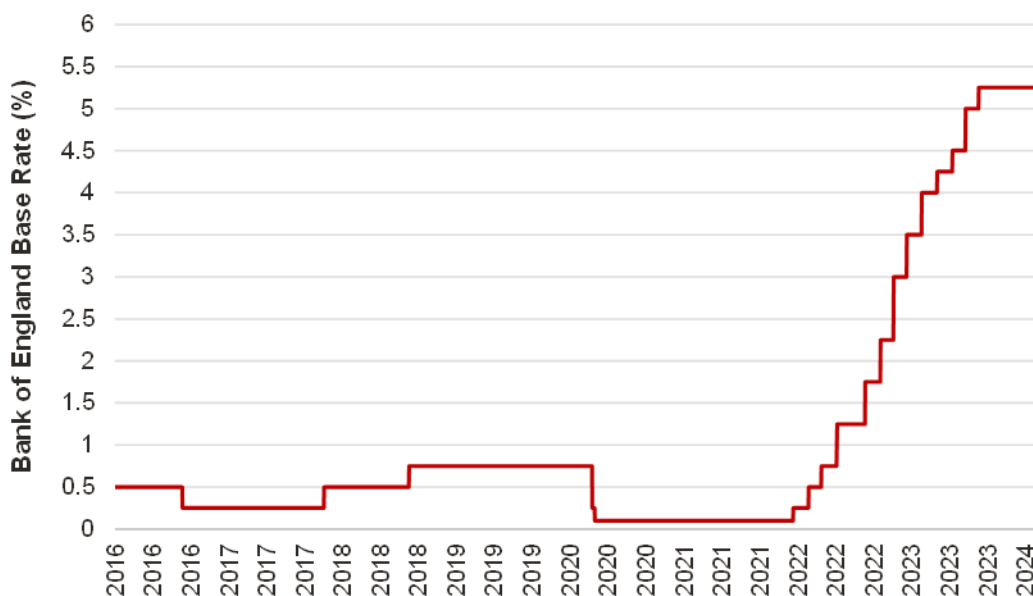
Source: Bank of England, DMS, Frontier Economics²

¹ Frontier Economics, Equity Investability in RIIO-3, section 2.1.1, 5 March 2024

² Frontier Economics, Equity Investability in RIIO-3, section 2.1.1, 5 March 2024

Over the same period of time, as shown in figure 2, the Bank of England base rate has increased from close to zero to 5.25% today.

Figure 2 - Bank of England base rate



Source: Bank of England

The era of cheap money is gone. Ofgem will need to adapt its regulatory financial policies and decisions to recognise the very different circumstances under which networks will need to raise finances during RIIO-3.

Heightened risk for all energy sectors in RIIO-3

All energy sectors face heightened risks relative to RIIO-2. These risks will be reflected in investors' perception of the risks associated with investing in energy networks and therefore in the financing costs that networks will bear. We highlight some of the most significant here. Networks will explain further risks that they will face in RIIO-3 in their own responses.

The energy system is undergoing a period of significant transformation as it supports the changes needed to achieve net zero, including decarbonisation of the power sector by 2035.³ While the precise path to be taken to achieving net zero remains uncertain, and is likely to be uncertain for some time, all National Grid ESO's 2023 Future Energy Scenarios show marked increases in use of electricity as well as an ongoing need for gas network availability into the medium term.⁴

³ Details available at [Plans unveiled to decarbonise UK power system by 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035)

⁴ Available at [Future Energy Scenarios \(FES\) | ESO \(nationalgrideso.com\)](https://www.nationalgrideso.com/future-energy-scenarios)

For electricity transmission networks, the scale and pace of investment programs in RIIO-3 will be unprecedented. Networks will need to deliver larger programmes than ever, meet customer requirements that are more uncertain and variable than ever and at much greater pace, with large penalties and risk of licence enforcement for late delivery. The sheer number of new projects, scale of projects and programmes, and the associated series of compressed outages means networks will be exposed to even greater risks associated with avoiding and managing delays, network faults, and major incidents. This requires a step up in operational procedures, capabilities, systems, and complexity in management of operations. Investors in electricity transmission networks will inevitably factor this increasing risk into the returns they expect for their investment.

With the need for significant investment, the planning and consenting challenges, public opinion, and the reputational challenges posed to electricity networks are at a scale never experienced before. This pressure from politicians and from external stakeholder groups regarding the impact of this investment on the environment and communities will have a knock-on effect on the deliverability, costs, and risks of delivering necessary investment.

Gas networks will need to maintain safe and reliable gas supplies for as long as the network is energised and customers are reliant upon it. They will also need to manage the potential challenges of transforming their assets to serve future alternative gas/heating vectors over an uncertain proportion of their network. They will need to do this against the backdrop of asset stranding risk. Debt and equity investors in gas networks face the risk that any money they invest (or have invested in the past) may not be fully recoverable, and will inevitably factor this risk into the basis on which they are willing to invest and the returns they expect for investing in gas networks. Investors in both gas and electricity networks will carefully observe developments in Ofgem's policy for addressing potential RAV stranding as an indication of the stability and predictability of GB energy regulation.

All networks face further risk increases due to supply chain, inflationary and workforce availability pressures. Increased global demand for network investment has resulted in the supply chain being significantly constrained. There is pressure to secure supply chain capacity, terms and conditions, and the pace required to achieve dates. The overall complexity of the supply chain, its need to scale, and the financial exposure to supplier failure, quality risks, and resource constraints exposes networks to supply chain risks at a scale never seen before.

All networks also face increasing threats to the resilience and reliability of their networks arising from the effects of climate change and increasing threats such as cyber security. Weather patterns are significantly changing due to the impact of climate change and provide an ever-growing risk of interruptions to capital delivery and to penalties due to service interruptions. Network companies also face a heightened security risk relative to the rest of the market due to the combination of increasing world instability, increasing global interconnectivity, and energy networks being critical national infrastructure. These risks may be partially addressed by specific allowances and investments, but the increased threat is unlikely to be fully mitigated and will require continuous improvement as threat actors also become more advanced.

All these factors will further increase financing costs for RIIO-3 beyond the increases that will arise due to changes in the macroeconomic environment and thus put greater risk to both debt and equity investability.

The stakes have never been higher

Customers and society have never been more reliant on the provision of safe and secure energy supplies. Growing energy demand and the critical role it plays in our lives underscore the importance of safe, secure, and

reliable energy supplies. This has become a top priority on the energy policy agenda, with government recognising the critical nature of energy supplies.

The combined effects of the investment that networks will need to deliver over the RIIO-3 period, the risk of RAV stranding, changes to the macroeconomic environment and investor expectations and the risks that networks will carry in RIIO-3 mean that it is more important than ever that Ofgem gets its policies and decisions for RIIO-3 right.

The consequences for customers and society of getting RIIO-3 financing decisions wrong would be very significant. If the allowed rate of return is insufficient, then there is a clear risk that companies may be unable to attract the capital needed to finance the investment required, or retain existing capital. If networks cannot attract and retain the required capital, then this will immediately hamper the ability of any company to deliver what customers and society require of them.

Financeability and investability

Investability⁵ assessment must feature heavily in Ofgem's design of the RIIO-3 financial framework and must be applied to both existing and new equity

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

Ofgem has a statutory duty to have regard to the need to secure that companies are able to finance the activities which are the subject of obligations imposed by or under the relevant legislation. The current macroeconomic climate, combined with the increasing risks to which all networks are exposed, means that the effective and appropriate discharging of this duty is even more important than ever.

Ofgem has invited views on whether a broader assessment of investability in addition to its traditional assessment of financeability may be necessary and has benefits for consumers.⁶

ENA believes that Ofgem is right to recognise the increasingly important role of investability in its financial frameworks. We believe that it is imperative that Ofgem expands its assessment of financeability to account for investability and that the concept of investability must ensure that companies remain investable from the perspective of both debt and equity investors. Contrary to Ofgem's position in its SSMC⁷, we believe that is equally important for gas networks as it is for electricity networks.

Ofgem's historical approach to assessing financeability has focussed on debt financeability. We set out in the next section some required improvements to Ofgem's debt financeability. However, the key gap that we see investability filling is the need to assess investability from the perspective of all investors, so equity investors must also be included in this assessment.

ENA asked Frontier Economics to consider how equity investability could be used and assessed. Frontier Economics' conclusions are set out in its report that is attached to our submission.⁸ This work shows how equity investability must focus on assessing whether the equity return on offer is competitive versus the set of other opportunities that exist in the wider international capital market.

Frontier Economics explains that equity financeability considerations apply equally to all equity investment in order to retain existing equity and attract new equity.⁹ It explains that, because today's "new" investor, will be tomorrow's "old" investor, if Ofgem was to only apply the concept of investability to new investors, any investor would rationally appraise the full set of signals sent by Ofgem regarding their future returns and come to the conclusion that Ofgem's new policy was one where it offers attractive introductory rates, followed by a long period of lower rates. Such an approach would also be destructive to investor confidence as it would send a stark signal to equity investors that they should not expect to receive the required rate of return as soon as it was no longer necessary to raise fresh equity.

⁵ Investability is a non-statutory concept, and does not have any clear definition. However, it cannot be less than, and can only be additional to, the requirements of Ofgem's statutory financing duty. The legal meaning and effect of that duty is currently one of the subjects of a judicial review brought by Wales & West Utilities Ltd against the CMA. All observations in this section are entirely without prejudice to the arguments advanced by Wales & West in the High Court as to the correct statutory interpretation of that duty.

⁶ Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 5.13, 13 December 2023

⁷ Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 1.6, 13 December 2023

⁸ Frontier Economics, Equity Investability in RIIO-3, 5 March 2024

⁹ Frontier Economics, Equity Investability in RIIO-3, section 3.2, 5 March 2024

As set out earlier in this response, Frontier Economics explains that a meaningful investability cross-check must reflect the incremental return that equity requires over debt.¹⁰

It notes that investability can also be tested by considering the ‘inferred’ cost of equity from cross-checks, including those used by Ofgem at RIIO-2. However, it also notes that all such cross-checks come with imperfections and limitations. Nonetheless, given the weight placed by Ofgem on such cross-checks in the past, there is merit in considering what cost of equity cross-checks now show, and whether they now support moving allowed returns back up. While these cross-checks cannot provide a highly reliable estimate of the actual cost of equity of GB regulated energy networks, they can inform on the overall trends in equity returns.

If the equity investability tests are failed, one would not rationally expect an equity investor to deploy capital in a proposition that has been shown to be unattractive versus readily available competing opportunities.

The benefits for customers of introducing such an investability framework for RIIO-3 are clear: if the RIIO-3 framework does not provide an equity return that is competitive versus the set of other opportunities that exist in the wider capital market, networks will be unable to finance activities that customers and society need them to deliver.

We set out the results of Frontier Economics’ assessment of such investability tests later in our response.

The risks that networks will face during RIIO-3 mean that robust debt financeability assessment is more important than ever

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

In addition to the introduction of an equity investability framework as set out above, Ofgem’s approach to financeability for RIIO-3 must include:

- Retaining tests of licensees’ ability to maintain strong investment grade credit rating, including consideration of how credit rating views may evolve;
- Testing that companies remain financeable into the long term, and that decisions taken for RIIO-3 do not simply solve issues for that price control period whilst it “stores up” problems for future periods; and
- Robustly testing the financeability of companies against credible risk scenarios, including investment funded via uncertainty mechanisms and sensitivity to variations against key financial forecasts.

¹⁰ Frontier Economics, Equity Investability in RIIO-3, para 7, 5 March 2024

Allowed return on debt

Any potential changes in response to the “inflation leverage effect” must be considered and tested very carefully

FQ2. Do stakeholders have evidence in support of, or opposition to, one or more of the updated indexation or inflation remuneration methodologies under consideration?

We agree with Ofgem’s November 2023 decision to rule out an out or underperformance true up in respect of the inflation leverage effect during RIIO-1 and RIIO-2.¹¹ We agree that such an approach would have resulted in net detriment to consumers overall. Ofgem needs to continue to recognise the need for regulatory stability and credibility in the way that it considers possible changes for RIIO-3. As explained earlier in this response, there is need for investability and certainty in all energy sectors and a real danger that investor confidence is damaged if Ofgem tries to fix something that is not broken, or implements a future mechanism that does not improve on current arrangements.

ENA members will provide their own feedback on the options to address the “inflation leverage effect” in their individual responses.

All companies agree that:

- It has not been shown that the current arrangements are a detriment to customers over the longer term. We believe investor confidence will be best achieved by retaining the status quo position on the treatment of RAV indexation, as applied in RIIO-2, for RIIO-3 (which is reliant on independent CPIH inflation forecasts provided by OBR). In any case, significantly more work is needed to develop the detail on all options, including whether they deliver on financeability and investability objectives or require consequential changes to other aspects of the price control package;
- Forecasts of long-term inflation should be credible and independent. We do not support the use of Bank of England break-even inflation: the case to use it has not been made; and
- Great care should be taken when considering any fundamental changes to notional company assumptions.

We expand on these further in the following sections.

More work is needed to develop the detail of all options, including whether they deliver on financeability and investability objectives or require consequential changes to other aspects of the price control package

The “options” to address the inflation leverage effect considered in the SSMC explore possible changes to components of the price control that have been fundamental cornerstones of the regulatory framework since privatisation (real cost of debt and indexation of the RAV by inflation) which all investors have relied on in making their decision to invest in the UK energy sector.

Ofgem has only provided very high-level details of its possible future approaches in its SSMC. Much more detail will be required for networks to be able to determine whether any of the mooted mechanisms are practicable and improvements on the RIIO-2 approach. Crucially, changes to RAV indexation or cost of debt allowances

will affect the financeability and investability of networks. The assessment of whether any changes deliver on financeability and investability objectives must be a key component of this assessment.

These are key components of the wider price control financing package, which in turn interact with many other aspects of the price control, including delivery of investment, innovation and efficiency. The implementation of any changes for RIIO-3 must therefore also consider the consequential impact on the operation of other components of the price control in order to maintain an appropriate and internally consistent price control package. Depending on Ofgem's ultimate decision, changes could be required to many aspects of the price control package including NPV calculations supporting investment appraisals, revenue timing adjustments, and incentive design and strength. These consequential effects must also be assessed in detail as part of Ofgem's decision making process.

Forecasts of long-term inflation should be credible and independent. We do not support the use of Bank of England break-even inflation; the case to use it has not been made

Ofgem has stated that in the event that it does not opt for option 1 or 2 to address the leverage effect, it would "review the long run assumption to consider whether there is a more appropriate measure of long-term inflation expectations priced into debt".¹² Ofgem has then indicated that it could use break-even inflation as the relevant long-term assumption.¹³ Ofgem notes that prior to 2030 break-even inflation is aligned to RPI therefore a RPI-CPI wedge will need to be applied for years up to 2030, to express break-even inflation in CPI-real terms.

Any measure of long-term inflation expectations that is to be used in the design of the RIIO-3 price control needs to be both independent and credible. We consider that Ofgem's logic is flawed and its analysis of the issue incomplete. Ofgem has not:

- defined the meaning of an "appropriate" measure of long-term inflation;
- been clear why it is necessary to review the long-run inflation assumption and what is wrong with the long-term OBR forecast currently used at RIIO-2;
- evaluated other potential alternatives for long-term inflation assumptions; or
- shown evidence to suggest that break-even inflation is a superior measure of long-run inflation when compared to alternatives including OBR forecasts.

Frontier Economics explores these issues further in its attached report.¹⁴ It concludes that Ofgem's assessment of potential future reliance on break-even inflation for regulatory purposes is flawed and its analysis of the issue incomplete.¹⁵ It is clear that further research is needed on the most appropriate long-term inflation assumption.¹⁶

We believe that this area merits considerably more investigation.

Great care should be taken when considering any fundamental changes to notional company assumptions so that regulatory stability and predictability is not undermined

Ofgem is considering removing the notional assumption for ILD alongside options 1 and 2 in order to seek to eliminate the "leverage effect" for the notional company.¹⁷ Companies will provide views on whether they

¹² Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 2.39, 13 December 2023

¹³ Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 2.40, 13 December 2023

¹⁴ Frontier Economics, Initial consideration of break-even inflation for price control purposes, 5 March 2024

¹⁵ Frontier Economics, Initial consideration of break-even inflation for price control purposes, page 1, 5 March 2024

¹⁶ Frontier Economics, Initial consideration of break-even inflation for price control purposes, page 8, 5 March 2024

¹⁷ Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 2.43, 13 December 2023

support such a change in their own responses. However, all companies recognise that such a move would be a fundamental change to notional company assumptions and that, therefore, there are some key principles that Ofgem must consider before introducing any such change.

Networks' actual financing structures will often differ from Ofgem's notional assumptions, sometimes by a small amount and sometimes considerably. For this reason, the actual impact on performance for individual companies during RIIO-3 will be different to any chosen notional company assumption.

Networks typically make long term financing decisions that reflect their long-term investments. The ILD market has been, and continues to be, an important part of the debt markets providing such long-term finance. Access to all debt markets will be increasingly important and networks are concerned that removing the ILD assumption would send the wrong signals to the important ILD market.

Where networks have long-dated ILD on their debt books, they will have included it in their portfolios because they considered that it was efficient and prudent to do so, as reflected in Ofgem's ILD assumptions to date. Options to make changes to embedded debt structures to align with significant changes to notional company structures are limited, can usually only be unwound over time and are generally expensive. For this reason, Ofgem's suggested removal of the ILD may lead to a wholesale divergence from most licensees' actual positions.

Amongst other factors, many companies take Ofgem's notional company assumptions into account when making their long-term financing decisions, sometimes very explicitly and sometimes more indirectly. Any changes made may therefore influence companies' future actual financing decisions and costs over the medium term. In turn, these will flow through to costs ultimately borne by customers (for example via the increased costs of transitioning away from index linked debt).

In order not to undermine regulatory stability and predictability in the development of the RIIO-3 price control and impede investability, Ofgem needs to:

- articulate its rationale for its proposed approach very clearly, and in a way that supports regulatory stability and predictability if such an unusual and fundamental potential change is not to unsettle networks and investors;
- justify whether its notional company structure is achievable by networks; and
- assess whether any change in notional company assumptions will precipitate supply and demand issues in the wider market – i.e. send out the wrong incentive impulse to networks and potential ILD investors - that may ultimately lead to increased costs being borne by customers.

Additional borrowing cost allowances will need to increase in RIIO-3 to reflect changes in market rates, improved estimation approaches and costs incurred by networks that are not compensated in Ofgem's RIIO-2 approach

FQ5. Do stakeholders have any additional evidence for us to consider in our review of the additional borrowing allowances or infrequent issuer premium?

ENA asked NERA to refresh its assessment of additional borrowing costs required for RIIO-3. NERA's analysis and evidence sources are set out in the appended report.¹⁸

NERA estimates additional cost of borrowing of 57 bps p.a. for RIIO-3, with a range of 54 to 59 bps, compared to Ofgem's RIIO-2 allowance of 25 bps. Additionally, NERA estimates an infrequent issuer premia of 14 bps p.a. A breakdown of NERA's conclusions is set out in the following table.

bps per year	NERA's estimate ¹⁹
Transaction Costs	6
Liquidity/ Revolving Credit Facilities (RCF) Costs	13
Cost of Carry	12
CPIH Premium	18-23 (mid point 21)
New Issue Premium (NIP)	5
Additional Cost of Borrowing	54-59 (mid point 57)
Small Company/Infrequent Issuer Premia*	10-18 (mid point 14)
Total	64-77 (mid point 71)

* NERA's analysis shows all GDNs (except for SGN Southern) and all DNOs qualify as infrequent issuers, whereas TOs do not qualify except for SPT.

NERA's analysis demonstrates that an increase is required to RIIO-2 additional borrowing cost allowances as a result of a number of factors including:

Changes to market rates for additional borrowing costs e.g.:

- higher short-term borrowing rates increasing a number of additional borrowing costs including liquidity costs/ RCF costs.

Improvements to Ofgem's RIIO-2 basis for estimating additional borrowing costs e.g.:

¹⁸ NERA, Additional Cost of Borrowing for the RIIO-3 Price Control, 22 February 2024

¹⁹ NERA, Additional Cost of Borrowing for the RIIO-3 Price Control, slide 2, 22 February 2024

- the upper bound of NERA's Small Company/Infrequent Issuer Premium is based on illiquidity premium estimated using the bid-ask spread differential between sub-benchmark issues and issues at and above £250m, in recognition that Constant Maturity Swaps (CMS) do not provide risk hedging for credit risk.

Costs that were not recognised by Ofgem at RIIO-2 that should be included in allowances for RIIO-3, e.g.:

- the costs associated with drawing down RCF to fund working capital/ operational needs;
- new issue premium costs, consistent with CAA's approach to the H7 price control for Heathrow;²⁰ and
- the strong evidence of an enduring CPI-CPIH differential that is borne by companies but is not compensated in Ofgem's RIIO-2 approach to determining cost of debt allowances.

NERA's analysis excludes sector or company specific factors that may increase additional borrowing costs further. NERA recognises that its estimates may need to be revisited in light of Ofgem's ultimate decisions regarding the wider operation of the RIIO-3 price controls (such as the introduction of new financial resilience measures that may drive up costs, any changes to notional company assumptions that may change the required calculation of allowances or confirmation of allowed expenditure allowances leading to changes in new debt assumptions) and potential further changes to macroeconomic environment and debt capital market considerations.

²⁰ CAA, H7 Final Decision, Section 3: Financial issues and implementation, CAP2524D, para 9.176, March 2023

Allowed return on equity

FQ6. Do stakeholders agree with our interpretation and proposed application of UKRN Recommendations 2-7?

Macroeconomic conditions have changed significantly since the RIIO-2 determination and since the UKRN Guidance was developed. Therefore, Ofgem needs to adapt its approach to setting allowed returns to reflect this new reality, thereby safeguarding the investability of the sector.

In this section we estimate a reasonable range for the cost of equity allowance for RIIO-3, building on the estimate from the CAPM parameters, and then cross-check that range against latest market evidence to test whether it provides an investable offer.

Evaluation of Capital Asset Pricing Model (CAPM) inputs shows that a significant increase is required to Ofgem's RIIO-2 cost of equity range

ENA asked Oxera to estimate a reasonable range for the cost of equity allowance for RIIO-3, based on estimates of CAPM parameters. Oxera's analysis and evidence sources are set out in the appended report.²¹ Oxera's analysis does not take account of sector-specific or forward-looking risk in RIIO-3.

Summary of Oxera's CAPM parameter ranges

CPIH real	Oxera low	Oxera high	Oxera mid
RFR	1.84%	1.84%	1.84%
TMR	6.50%	7.50%	7.00%
Equity beta (at 60% gearing)	0.70	0.82	0.76
Cost of equity	5.08%	6.48%	5.78%

Ofgem's RIIO-2 cost of equity decision incorporated a number of judgements as to how data should be interpreted to inform ranges. Those judgements were made during a period of "lower for longer" interest rates and tended to result in CAPM parameter ranges, in particular TMR ranges, that were calibrated towards the lower end of ranges that could be justified by available evidence.^{22,23}

Oxera's approximation of rolled forward values for Ofgem's RIIO-2 approach, incorporating Ofgem's RIIO-2 judgements, suggests a range of 4.75% - 5.77%.²⁴ This range is higher than the RIIO-2 range as a result of updating the RFR in line with significant increases in government gilt rates.

²¹ Oxera, RIIO-3 cost of equity, 23 February 2024

²² Oxera, RIIO-3 cost of equity, section 2.2.4, 23 February 2024

²³ Frontier Economics, Equity Investability in RIIO-3, section 2.1.1, 5 March 2024

²⁴ Oxera, RIIO-3 cost of equity, page 12, 23 February 2024

Oxera's CAPM range is considerably higher than Oxera's approximation of the rolled forward Ofgem RIIO-2 approach. The mid-point of Oxera's range is 52 bps higher than the mid-point of the rolled forward RIIO-2 range.

The difference in cost of equity ranges between Ofgem's rolled forward RIIO-2 approach and Oxera's approach is driven by changes to the estimation of two of the CAPM parameters: RFR and TMR.

Oxera's approach to estimating the RFR includes two changes to Ofgem's RIIO-2 approach²⁵:

- Using a historical average of 20-year gilt and AAA-rated corporate bond yields to account for the gilt convenience premium; and
- Adding a historical average of the CPI–CPIH wedge to derive the total RPI–CPIH wedge.

Oxera's approach to estimating the TMR includes two changes to Ofgem's RIIO-2 approach²⁶:

- Relying primarily on the historical ex post approach (long-term arithmetic mean of one-year returns, using CPIH backcast inflation for 1950–88), while covering the historical ex ante TMR estimation within its range; and
- Recognising that some increase in the TMR is a logical consequence of the large increase in interest rates. Oxera notes that adjusting the TMR range in response to changes in gilt yields would be consistent with historical regulatory approaches and that its proposed increase to TMR range would be a relatively small change in the context of the observed increase in the UK government gilt yields.

Oxera explains in its report that these differences in approach to estimation of CAPM parameters remain consistent with the UKRN Guidance.²⁷ We explain the need for these required changes in the following sections.

The RFR estimate must be adjusted to account for the gilt convenience premium

The concept of the gilt convenience premium will be familiar to Ofgem. Oxera outlines its latest analysis of the gilt convenience premium in its report.²⁸

The convenience premium is caused by excess demand for highly rated government bonds driven by regulatory requirements and the use of government bonds in hedging strategies - such as interest rate hedging. It reflects the money-like safety and liquidity characteristics of government bonds. It results in yields on government bonds violating the Modigliani–Miller (MM) theorem. Put another way, without adjustment for the convenience premium any RFR derived solely from government bond data will not reflect the zero beta risk that the CAPM framework requires.

Academic research has confirmed the existence of a convenience yield in government bonds, including those issued by the UK government.

Oxera recommends that the estimate of the RFR should be based on the historical average of ILGs and AAA-rated bonds in order to account for the convenience premium. This is consistent with the methodology applied by the Competition and Markets Authority (CMA), the UK Civil Aviation Authority (CAA) and Northern Irish

²⁵ See Oxera, RIIO-3 cost of equity, section 2.1, 23 February 2024 for Oxera's full assessment of RFR

²⁶ See Oxera, RIIO-3 cost of equity, section 2.2, 23 February 2024 for Oxera's full assessment of TMR and equity risk premium (ERP)

²⁷ Oxera, RIIO-3 cost of equity, section 2.1.4 and 2.2.6, 23 February 2024

²⁸ Oxera, RIIO-3 cost of equity, section 2.1.1, 23 February 2024

regulator (UREGNI). Oxera calculates a five-year average convenience premium estimate (the period that matches the length of the price control period) of 0.11%.

There is strong evidence of the existence of a material CPI-CPIH wedge which must be factored into Ofgem's calculations of both cost of debt and cost of equity for RIIO-3

FQ8. Do stakeholders agree with our proposed methodologies where not specifically covered by the UKRN Guidance recommendations or our approach in previous price controls, such as the proposed approach to converting the RPI-real yields to CPIH-real inputs in the RFR calculation?

Ofgem proposes to use CPI as a proxy for CPIH in a number of its price control calculations. Both Oxera's report on CAPM parameters for cost of equity and NERA's report on additional borrowing costs identify the existence of a CPI-CPIH differential that must be reflected in Ofgem's calculations.^{29,30} The UKRN Guidance does not comment on the CPI-CPIH wedge.

The quantum of the CPI-CPIH "wedge" at any one point in time is volatile. However, over time the difference between the two indices has exposed networks to a difference that is not compensated in allowances for risk free rate or cost of debt allowances.

We disagree with Ofgem's suggestion³¹ that the 14 bps average difference between the indices between June 2013 and June 2023 can be taken to suggest that no recognition needs to be made in allowance setting. 14 bps is a significant size in the context of price control calculations. The difference between CPI and CPIH to which networks have been exposed during RIIO-2 has been significant and is contrary to Ofgem's assessment that the impact of the transition to CPIH indexation would be value-neutral to investors.³²

There are a number of ways in which the enduring difference can be estimated for the purposes of adjusting future allowances to reflect both the likely average divergence between CPI and CPIH throughout RIIO-3 and the ongoing volatility of that difference. Oxera estimates an appropriate adjustment of 33 bps³³, and NERA estimates adjustments in the range of 40 to 50 bps.³⁴

Further work is required to explore how Ofgem should best determine the quantum of appropriate upwards allowance adjustments for RIIO-3 and also how the volatility of the difference and therefore the risk that networks will continue to manage relative to those allowance adjustments should be compensated.

We would like to discuss possible approaches with Ofgem prior to its SSMD.

Ofgem's approach to TMR averaging and deflation should be reviewed

To estimate the TMR using the historical ex post approach, one needs to make choices regarding which averaging method to use and how to deflate nominal historical returns to estimate the real historical returns. Ofgem will be familiar with the options and decisions that need to be taken from its RIIO-2 discussions.

²⁹ Oxera, RIIO-3 cost of equity, section 2.1.2, 23 February 2024

³⁰ NERA, Additional Cost of Borrowing for the RIIO-3 Price Control, slide 12, 22 February 2024

³¹ Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 3.39, 13 December 2023

³² Ofgem, RIIO-2 Final Determinations – Impact Assessment, 8 December 2020

³³ Oxera, RIIO-3 cost of equity, section 2.1.2, 23 February 2024

³⁴ NERA, Additional Cost of Borrowing for the RIIO-3 Price Control, slide 12, 22 February 2024

It is not clear from Ofgem's RIIO-2 decision how much weight was placed on each of the TMR methodologies it considered. However, it is clear that Ofgem deployed its judgement to determine a TMR range that was towards the lower end of ranges that available evidence supported.

Ofgem sets out in its SSMC that it plans to consider a range of “*appropriate timeframes, averaging methodologies and potential adjustments*” in estimating its historical ex post TMR range.³⁵

Oxera sets out its clear rationale for relying on the long-term arithmetic mean of one-year returns in its TMR range in its report.³⁶ Oxera concludes that:

*“in the absence of serial correlation, using a non-overlapping one-year arithmetic average remains a more robust estimation methodology than using the geometric average as a basis and adjusting it upwards for the potential impact of serial correlation.”*³⁷

Oxera also explains the inflation data series that it considers most appropriate to use.³⁸ Of note, Oxera recommends using the new CPIH backcast inflation series for 1950–88 as the new backcast CPIH series addresses the most concerning errors found in the previously existing CPI backcast.

Historical ex ante approaches to estimating TMR are subjective and prone to hindsight bias – considerably more weight must be placed on historical ex post than the historical ex ante estimates of TMR

Oxera examines historical ex ante approaches to estimating the TMR in its report and has looked into the details of two ex ante TMR approaches as guided by the UKRN Guidance.³⁹ Oxera observes that while the aim of historical ex ante approaches is to be forward-looking, the sensitivity of input assumptions and degree of subjectivity involved in historical ex ante approaches and lack of public and undisputed data availability make them less reliable than the historical average of actual returns. Oxera concludes that only limited weight, if any, should be placed on historical ex ante approaches in estimating the TMR. This is in line with the CMA's position in its PR19 decision that historical ex ante approaches do not add information to the arithmetic average.

Nonetheless, Oxera calculates an adjusted version of the DMS decompositional approach to arrive at its historical ex ante TMR estimation of 6.53%. However, Oxera puts little weight on this evidence in deriving a reasonable range for the allowed TMR. It notes, however, that this value falls within its proposed TMR range. It further notes that the historical ex ante approach produces TMR estimates that are incompatible with the changed market environment.

Some increase in the TMR range is a logical consequence of the large increase in gilt yields and would be consistent with historical regulatory approaches

The era of cheap money is gone. Ofgem will need to adapt its regulatory financial policies and decisions to recognise the very different circumstances under which networks will need to raise finances during RIIO-3. In particular, Ofgem will need to increase its TMR range in response to the current macroeconomic conditions.

³⁵ Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 3.52, 13 December 2023

³⁶ Oxera, RIIO-3 cost of equity, section 2.2.1, 23 February 2024

³⁷ Oxera, RIIO-3 cost of equity, section 2.2.1, 23 February 2024

³⁸ Oxera, RIIO-3 cost of equity, section 2.2.1, 23 February 2024

³⁹ Oxera, RIIO-3 cost of equity, section 2.2.3, 23 February 2024

Both Oxera and Frontier Economics describe the clear evidence of how regulators, and Ofgem in particular, have historically adjusted the TMR range downwards in response to changes in gilt yields.^{40,41} Now that gilt yields have increased considerably, it is logical and consistent that Ofgem increases its TMR range accordingly. We consider that Ofgem increasing TMR in this manner would be consistent with regulatory precedent and would promote regulatory stability and certainty. Indeed, it would be irrational to expect a circa 3.5% increase in gilt yields to have no effect on the appropriate level of TMR.

Oxera's proposed increase to the TMR range would be a relatively small change in the context of the significant observed increase in the UK government gilt yields. (i.e. TMR only increases by 15% of the increase in gilt yields). It would be a less significant change in the TMR compared with Ofgem's response to such changes in interest rates in the past. For example, the change in TMR between RIIO-ED1 (6.45% RPI-real) and RIIO-GD&T2 (5.45% RPI-real) corresponded to 53% of the change in gilt yields. Oxera considers that its proposed change to TMR range is consistent with the view that the TMR is broadly stable.

⁴⁰ Oxera, RIIO-3 cost of equity, section 2.2.4, 23 February 2024

⁴¹ Frontier Economics, Equity Investability in RIIO-3, section 2.1.1, 5 March 2024

The selection of a beta range for RIIO-3 will require particularly careful consideration due to beta data volatility. There is no reason to expect that the risk of energy networks will have decreased in RIIO-3, either in absolute terms or relative to the wider economy. Indeed, one would expect that increasing risks should be reflected in increasing beta values.

FQ9. What comparators and/or timeframes are likely to provide the most accurate estimate of beta for the energy network sectors on a forward-looking basis?

The significant volatility in betas during the COVID-19 pandemic period and following the Ukraine crisis requires careful consideration.

Oxera concludes that Ofgem's RIIO-2 asset beta range is an appropriate baseline beta, before accounting for sector-specific forward-looking RIIO-3 risks

ENA asked Oxera to consider a reasonable beta range for RIIO-3. Oxera sets out its analysis and conclusions in its report.⁴² Oxera calculates two-, five- and ten-year average beta estimates for National Grid, UK water and European energy comparators and observes a very wide range of results: asset betas varying from 0.28 to 0.39. The wide range that is observed in the market data is driven by the significant volatility in betas for utilities during the COVID-19 pandemic period and following the Ukraine crisis.

Oxera observes a number of issues to consider in deciding on a beta range. It takes account of a range of factors, including:

- that there is no reason to expect that the risk of energy networks will have decreased in RIIO-3, either in absolute terms or relative to the wider economy; and
- the existence of a statistical anomaly as regards the estimation of betas for a sample with below-market-average risk (i.e. betas that are less than one), where empirical observations indicate that the difference in realised returns between low- and high-beta stocks is lower than anticipated by CAPM predictions, and regression results from a sample of low-beta stocks will exhibit downward bias.

Oxera concludes that Ofgem's RIIO-2 asset beta range (0.32–0.37) is an appropriate baseline beta, before accounting for forward-looking RIIO-3 risks. It opts for this approach for a number of reasons:⁴³

- the need to narrow down the wide range of beta estimates derived from its range of regression windows, rolling averages and comparators;
- if Ofgem's RIIO-2 methodology is applied to the latest market data, a similar estimate is observed;
- Ofgem, Ofwat and the CMA have all previously expressed a preference for longer-term beta approaches that point to a similar estimate;
- Oxera agrees with the reasons behind regulatory support for longer-term beta estimates, before accounting for sector-specific forward-looking risks, in the specific context of RIIO-3; and
- an allowance towards the upper end of the range is consistent with the need to address the low-beta anomaly.

⁴² See Oxera, RIIO-3 cost of equity, section 2.3, 23 February 2024 for Oxera's full assessment of beta estimation.

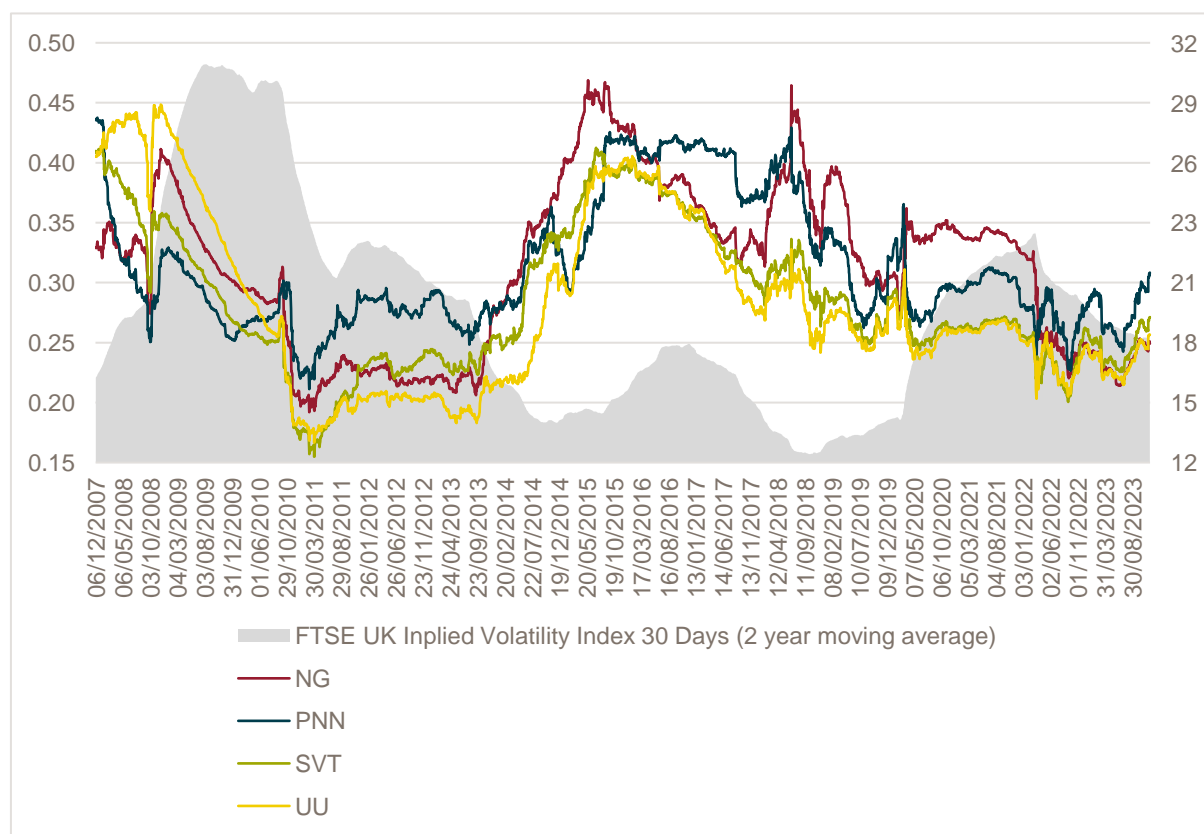
⁴³ Oxera, RIIO-3 cost of equity, pages 10 and 11, 23 February 2024.

This translates to a re-levered equity beta range of 0.7 to 0.82 at 60% gearing.

Recent low betas are negatively correlated with high market volatility – little weight should be placed on them

ENA asked Frontier Economics to comment on prevailing estimates of beta and, in particular, the low beta values that are observed during the COVID-19 pandemic period and following the Ukraine crisis. Frontier Economics' analysis and conclusion are set out in its report.⁴⁴ Frontier Economics observes that utilities betas tend to be negatively correlated with market volatility, implying that utilities beta levels decrease when market volatility increases.

Figure 3 - 30d implied volatility and (unlevered) utility betas estimated using a 2-year estimation window



Source: Frontier Economics based on Bloomberg data⁴⁵

Note: Unlevered betas, 2 year averaging window, daily frequency of the underlying data for beta estimation. Frontier Economics considers a 2-year moving average of the VIX index as the VIX index is inherently forward looking, while betas are inherently backward looking. Using a 2-year moving average attempts to 'match' the appropriate time period of market volatility to the beta estimation windows.

⁴⁴ Frontier Economics, The low beta puzzle, 5 March 2024

⁴⁵ Frontier Economics, The low beta puzzle, page 4, 5 March 2024

As well as finding a negative relationship between market volatility and the beta of utilities, Frontier Economics also finds a positive relationship between market volatility and the forward-looking market-implied Equity Risk Premium (ERP).

Frontier Economics identifies two potential issues associated with reliance on betas from period of market volatility, (a) when combined with an ERP estimate that is not forward looking so as to reflect high market volatility, the result would under-estimate the cost of equity; and (b) the beta estimate itself may be unreliable owing to high volatility even if paired with an appropriate ERP.

Pairing beta values from periods of market volatility with a largely stable, but not fixed, TMR would create a mismatch and under-estimate the cost of equity

In the context of the prevailing approach to setting allowed returns in the UK, any reliance on betas from periods of market volatility could present a problem.

When setting the allowed equity returns, regulators have preferred to rely on a construct where TMR is stable, albeit not fixed. UK regulators typically estimate the TMR and RFR independently and directly, and then infer the ERP as the difference between the two. The implication of this long run approach is that the ERP in regulator's CAPM formula moves in the opposite direction to the RFR. Since RFR has risen materially in recent years, and since TMR will not increase one-for-one with RFR, within the UK regulatory construct, the inferred ERP will fall significantly.

As Ofgem does not propose using a forward-looking TMR/ ERP estimate, this means that Ofgem needs to take extra care when choosing a beta estimate from the potential range of evidence based on various historical estimation windows, such that as little as possible weight is put on periods of high market volatility.

Frontier Economics concludes that it is clear that the effect of using beta estimates under high market volatility within the standard GB regulatory methodology for determining TMR and calculating ERP would under-estimate the cost of equity. Ofgem needs to consider whether its overall assessment of cost of equity, stemming from its choice around beta and TMR, is sufficient when taken together.⁴⁶ Put another way, the low betas seen in times of market volatility can only be paired with the high forward-looking market-implied ERP that is also seen in times of market volatility.

Beta estimates from periods of market volatility may be inaccurate even if paired with an appropriate ERP

Frontier Economics notes that some researchers and commentators question whether beta estimates made over estimation windows where markets are highly volatile should not be used at all. A well-known finance text summarises this as a potential pitfall of beta estimation for academics and practitioners alike who wish to estimate betas:

*"Research has shown that volatility affects the accuracy of beta estimates. at times when the market is highly volatile, beta estimates are less reliable, as are the correlations of individual stock returns with returns on the market...This means that estimating betas during periods of high volatility of market returns **will generally provide less reliable estimates of beta** than during periods of low volatility."⁴⁷[emphasis added.]*

⁴⁶ Frontier Economics, The low beta puzzle, page 6, 5 March 2024

⁴⁷ Pratt & Grabowski (2014), Cost of Capital – applications and examples, fifth edition, page 277

The selection of a beta range for RIIO-3 will require particularly careful consideration due to beta data volatility

Frontier Economics concludes that Ofgem will need to take extra care when choosing a beta estimate for RIIO-3. Many of the shorter estimation windows are likely to be affected by estimation issues, and it would be wise to place as little weight as possible on periods of high market volatility. It notes that, of the candidate set of standard estimation windows, this consideration would point towards maximising reliance on 10-year betas at this time, although, if market volatility levels continue to tail off, then 2-year estimates may prove potentially less problematic down the line, subject to the usual due diligence around potential distortions.⁴⁸

The increasing energy network risks for RIIO-3 may merit increases to the regulatory allowed beta relative to RIIO-2

Frontier Economics notes that, while considerations around volatility dictate that one cannot place reliance on two- and five- year betas at this time, ten- year betas are least likely to take appropriate account of emerging forward looking risk that could materialise during RIIO-3. This then raises the question as to whether ten- year betas, while largely clear of volatility problems, may require uplifting to better reflect crystallising sector risk.⁴⁹

As explained earlier in this response, all energy sectors face heightened risks relative to RIIO-2. These risks will be reflected in investors' perception of the risks associated with investing in energy networks and therefore in the financing costs that networks will bear. There may be a need to increase the regulatory allowed beta relative to RIIO-2 to reflect these increasing risks.

Such forward looking risks were not considered in the work that ENA asked Oxera to undertake. RIIO-3 business risk may not be adequately captured within those cost of equity estimates. Networks may provide further evidence in support of specific changes to beta estimates to reflect future risks in their own responses.

⁴⁸ Frontier Economics, The low beta puzzle, section 4, 5 March 2024

⁴⁹ Frontier Economics, The low beta puzzle, section 4, 5 March 2024

Equity investability cross-check data shows that rolling forward Ofgem's RIIO-2 approach will determine a range and point estimate that is too low, and that only values towards the top of the Oxera CAPM range would leave energy companies investable

ENA asked Frontier Economics and Oxera to undertake a number of tests of whether equity returns would be sufficient if Ofgem rolled forward its RIIO-2 approach to setting the allowed cost of equity. Their analysis and findings are set out in the appended reports.^{50,51}

As set out earlier in this response, Frontier Economics explains that a meaningful investability cross-check must reflect the incremental return that equity requires over debt.⁵²

It notes that investability can also be tested by considering the 'inferred' cost of equity from equity based cross-checks, including those used by Ofgem at RIIO-2. However, it also notes that all such cross-checks come with imperfections and limitations. Nonetheless, given the weight placed by Ofgem on cost of equity cross-checks in the past, there is merit in considering what equity cross-checks now show, and whether they now support moving allowed returns back up. While these cross-checks cannot provide a highly reliable estimate of the actual cost of equity of GB regulated energy networks, they can inform on the overall trends in equity returns.

The following sections explore the nature of such tests and the evidence that they currently provide.

Tests that consider whether the return on equity is sufficient given the return on debt, and the evident difference in risk between these two classes of investment.

Investability can be tested by considering the uplift above debt returns that would be required in order to attract equity investment to the same company. These tests reflect the fact that, because of this marked difference in risk, it would be irrational for investors to opt for equity if returns with sufficiently similar rates could be earned from providing senior debt. For this reason, both Oxera and Frontier Economics recommend placing particular focus on cross-checks to debt returns.

Our evidence includes comparisons based on two methods for comparing sufficiency of equity returns relative to returns available on debt.

Oxera's ARP-DRP cross-check

Oxera's report includes its latest comparison of a measure of the ARP with the DRP.⁵³ This is a reliable cross-check of whether the allowed cost of equity is appropriately calibrated, because it is derived from market data on observed debt yields rather than built up from a theoretical asset pricing model. Oxera's report also addresses comments on the ARP-DRP framework made in previous regulatory publications, and presents the improvements that it has introduced since then.

⁵⁰ Frontier Economics, Equity Investability in RIIO-3, 5 March 2024

⁵¹ Oxera, RIIO-3 cost of equity, section 3, 23 February 2024

⁵² Frontier Economics, Equity Investability in RIIO-3, para 7, 5 March 2024

⁵³ Oxera, RIIO-3 cost of equity, section 3, 23 February 2024

The observed debt market evidence suggests that the ARP should be close to 2.15%, which implies a cost of equity towards the upper end of the Oxera estimation range, i.e. 6.48% (CPIH-real, at 60% gearing), if market conditions remain the same at the time of the RIIO-3 decision.⁵⁴

Frontier Economics' hybrid debt cross-check

Frontier Economics' report introduces a new test of equity returns relative to debt yields that focuses on hybrid debt issued by networks to infer required equity returns.⁵⁵

Hybrid bonds are securities that combine debt and equity characteristics. For example, hybrid bonds can be of very long tenor – covering multiple decades, making them more similar to the perpetual nature of equity. These securities can also have debt-like qualities, including periodic coupon payments, however, in certain circumstances there can be a higher degree of flexibility over when these are paid. Hybrid bonds also sit between senior debt and ordinary shares in a company structure, being eligible for payments prior to equity-holders, but after senior debt-holders.

Since the yield on these hybrid bonds is directly observable, with an appropriate assumption on the proportion of equity like feature of the hybrid bond, an expected return on equity can be implied from a relatively simple formula. This allows estimates of the cost of equity to be compared to the level implied by the yields of hybrid bonds. If the allowed equity return is set below the level implied by the yields of hybrid bonds, then the RIIO-3 package violates the principle of equity investability. Rational investors would therefore not invest equity capital.

Frontier Economics finds that evidence from hybrid bonds indicates that the cost of equity should fall in the range 5.8% to 8.5%, with a central estimate of 6.7%.⁵⁶ This suggests that a simple roll forward of Ofgem's RIIO-2 CAPM approach (which results in a cost of equity range of 4.75 – 5.77%⁵⁷) would result in a cost of equity that is too low, even if a value is taken from the top of the range. It also suggests that an appropriate allowed cost of equity is likely to be at least in line with the top end of Oxera's estimated RIIO-3 range (i.e. 6.48%) – and if anything higher than this.⁵⁸

Tests that consider whether the return on equity is sufficient versus the equity return on offer from competing investment opportunities, and other wider cost of equity cross-checks, including those used by Ofgem at RIIO-2

Frontier Economics also explores equity-based cost of equity cross-checks in its report.⁵⁹ In these cross-checks, investability can be tested by considering the 'inferred' cost of equity from cross-checks, including those used by Ofgem at RIIO-2.

Frontier Economics notes that such approaches are challenging and that all come with imperfections and limitations. This was highlighted at RIIO-2, where it was argued that all these equity cross-checks were flawed, incomplete and biased to the downside.

⁵⁴ Oxera, RIIO-3 cost of equity, page 75, 23 February 2024

⁵⁵ Frontier Economics, Equity Investability in RIIO-3, section 5, 5 March 2024

⁵⁶ Frontier Economics, Equity Investability in RIIO-3, para 14, 5 March 2024

⁵⁷ Oxera, RIIO-3 cost of equity, page 12, 23 February 2024

⁵⁸ Frontier Economics, Equity Investability in RIIO-3, para 18, 5 March 2024

⁵⁹ Frontier Economics, Equity Investability in RIIO-3, detailed analysis in section 6 – summary results section 4, 5 March 2024

However, given the weight placed on cross-checks by Ofgem in the past, Frontier Economics concludes there is merit in considering what cost of equity cross-checks now show, and whether they now support moving allowed returns back up. It notes that while these cost of equity cross-checks cannot provide a highly reliable estimate of the actual cost of equity of GB regulated energy networks, they can inform on the overall trends in equity returns.⁶⁰

Nonetheless, it builds on the cross-checks developed by Ofgem at RIIO-2, presents updated evidence on what Ofgem's RIIO-2 cross-checks now show, and considers how equity cross-check data might be used to inform investability assessment.

Frontier Economics presents the results of those equity cross-checks that it has been able to provide updated data for:⁶¹

- Infrastructure fund IRR; and
- cost of equity inferred from investment manager forecasts of TMR, supplemented by the Fernandez survey.

Frontier Economics considers that its Long Term Profitability cross-check may have a more important role to play, since this cross-check focuses directly on the profitability of competing equity investment opportunities, and hence provides a benchmark that is entirely in line with investability.⁶² It presents updated evidence on this Long Term Profitability benchmark.

The results of the equity-based cross-checks also support a view that rolling forward Ofgem's RIIO-2 approach will determine a cost of equity range that is too low and that the allowed cost of equity should be set towards the upper end of the Oxera estimation range, if market conditions remain the same at the time of the RIIO-3 decision.

⁶⁰ Frontier Economics, Equity Investability in RIIO-3, section 3.1.2, 5 March 2024

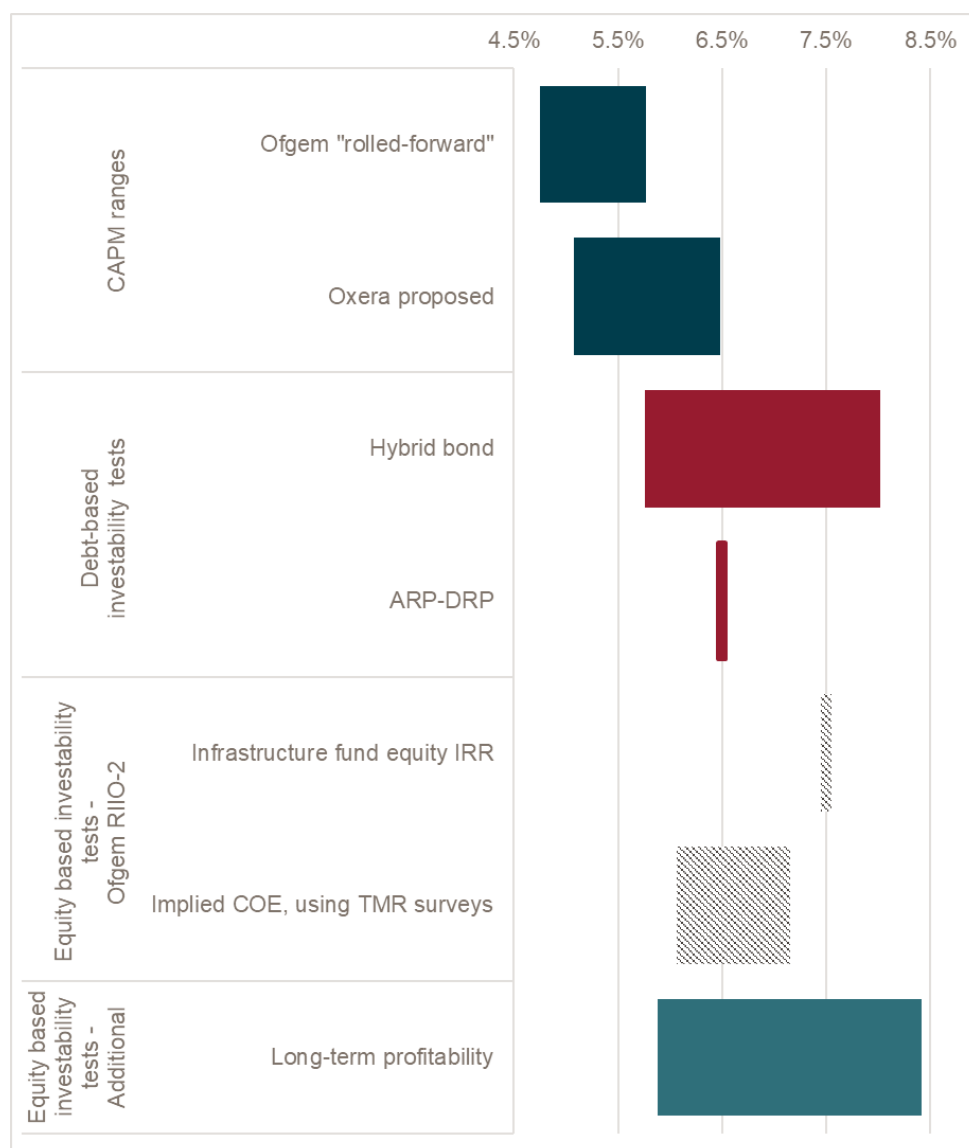
⁶¹ Frontier Economics, Equity Investability in RIIO-3, section 6, 5 March 2024

⁶² Frontier Economics, Equity Investability in RIIO-3, paragraph 9, 5 March 2024

Equity investability cross-checks consistently conclude that rolling forward Ofgem's RIIO-2 approach will determine a range and point estimate that is too low

Frontier Economics summarises the findings of the range of investability cross-checks in its report.⁶³ We replicate the summary of its findings below:

Figure 4 - Frontier Economics' investability tests of Ofgem's rolled forward RIIO-2 approach and Oxera's CAPM range



Source: Frontier Economics⁶⁴ (and Oxera)

⁶³ Frontier Economics, Equity Investability in RIIO-3, section 4, 5 March 2024

⁶⁴ Frontier Economics, Equity Investability in RIIO-3, figure 1, 5 March 2024

In summary, market evidence shows that rolling forward Ofgem's RIIO-2 approach will determine a cost of equity range that is too low – such a price control would not be investable. Even a number from the very top of that range would fail investability tests.

The range of evidence also suggests that an appropriate allowed cost of equity is likely to be at least in line with the top end of Oxera's estimated RIIO-3 range (i.e. 6.48%) – and if anything higher than this.⁶⁵ This finding seems consistent with Oxera's view that the approach it has adopted may not yet capture all relevant future risks, and that some further uplift to beta may be necessary.

The consequences of equity investability cross-check results for Ofgem's determination of RIIO-3 cost of equity: Ofgem must make adjustments to its CAPM parameter estimates to reflect latest market conditions and new evidence and select a point estimate value towards the upper end of that range

Having concluded that a roll forward of Ofgem's RIIO-2 approach to setting the cost of equity will determine a range and point estimate that is too low it is necessary to consider what Ofgem should do in light of this evidence.

Ofgem cannot simply ignore the investability cross-checks and forge ahead with setting a cost of equity on a basis that is broadly similar to its RIIO-2 approach. Setting the cost of equity too low would be irrational and would result in significant consumer harm.

Neither could Ofgem defend a decision to do so based on a "through-the-cycle" notion that somehow equity investors would be appropriately compensated in the long run.⁶⁶ Such an approach would be flawed on three bases. Firstly, it would ignore the fact that allowances determined in this manner would be insufficient given current capital market conditions and that networks would therefore be unable to attract and retain equity investors during RIIO-3 – they would be uninvestable. Secondly, even if it uplifted its RIIO-2 TMR range to reflect average historical returns, investors would recognise that Ofgem cannot fetter the discretion of future regulators in making decisions for future price controls and therefore could not be certain that returns would average out over time. Thirdly, it would also ignore the fact that Ofgem lowered its estimate of TMR over time in response to the fall in gilt yields and its assessment of wider market evidence – meaning that returns would not somehow "average out" at an appropriate level either.

Ofgem also cannot use compliance with UKRN Guidance to justify not changing its approach. Firstly, Ofgem cannot hide behind the UKRN Guidance to justify taking an approach that would fail to meet its statutory duties. Secondly, we believe that it is possible to make the changes necessary to secure an appropriate cost of equity range and point estimate and remain compliant with the UKRN Guidance.

This strong market evidence is clear. To respond to this evidence, Ofgem needs to:

- Make adjustments to its CAPM parameter estimates to take account of latest market conditions and new evidence (as set out in this response); and
- Select a point estimate towards the upper end of that range.

⁶⁵ Frontier Economics, Equity Investability in RIIO-3, para 18, 5 March 2024

⁶⁶ As suggested in Ofgem, RIIO-3 Sector Specific Methodology Consultation – Finance Annex, para 3.84, 13 December 2023

The UKRN Guidance sets out that:

“Recommendation 7: Cross checks may be used to sense check the CAPM derived point estimate. However regulators should only deviate from the mid-point of the CAPM cost of equity range if there are strong reasons to do so.”⁶⁷ (emphasis added)

The market evidence that determining a point estimate that is too low to secure investability is strong evidence that Ofgem must select a point estimate towards the upper end of an appropriately adjusted CAPM range.

⁶⁷ UKRN, UKRN guidance for regulators on the methodology for setting the cost of capital, page 30, March 2023

Financial resilience

Ofgem already has a comprehensive suite of obligations and mechanisms in place regarding dividends and their reporting. Networks take those obligations very seriously

FQ15. What is your view on the proposed financial resilience measures? Are these appropriate and/or are there any other measures that you would propose?

Ofgem already has in place a very comprehensive set of obligations and mechanisms to manage financing, financial resilience and dividend distribution. These include board level obligations and key roles for companies' auditors. The current arrangements include financial resilience reporting requirements that impose additional requirements on any companies that fail to meet certain resilience criteria. Companies take their regulatory and fiduciary, etc duties and obligations very seriously, and Ofgem can investigate and, if appropriate, take action if it believes those obligations are not being met.

Ofgem's requirements for reporting of dividend policy and dividends distributed are extensive. In particular, the Regulatory Financial Performance Reporting requirements were introduced to collect accurate and consistent information from networks to help customers and stakeholders to understand networks' performance on a comparable basis.

We recognise that companies may have historically interpreted those various requirements, and in particular reporting requirements, in slightly different ways and have sometimes presented information in differing formats. We would be happy to work with Ofgem to explore where further clarification of the requirements would be beneficial.

Next steps

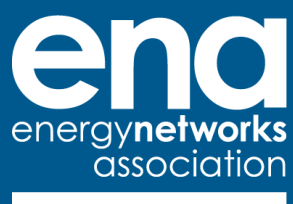
We trust that ENA's evidence is helpful to Ofgem in the development of its RIIO-3 finance policies. We would like to meet with Ofgem to explore our evidence in more detail, and to provide Ofgem with access to our advisers.

In a number of cases, it will be too early for Ofgem to make a firm decision at SSMD. This may be for one of a number of reasons, including:

- There are a lot of new concepts being considered, however the associated methodologies have not been consulted on. The impact on networks, customers and stakeholders may not be fully understood by SSMD. This process should not be rushed.
- We have identified some areas that need more consideration.
- Some finance decisions are, in turn, dependent on other RIIO-3 decisions that may not be made until later in the price control process. If a price control is to be developed that works as a cohesive and comprehensive package those interacting decisions must be taken together.

We urge Ofgem to keep its options open in its SSMD rather than to make hasty decisions now that may need to be reversed later in the process.

We stand ready to work with Ofgem and look forward to discussing our proposals and evidence with you.




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