

Part C: Finance Annex Questions

Our response to each of the specific questions raised in the SSMC is set out below. We have drafted these responses so they can be read standalone for readers who may need to focus on specific areas. Therefore, for those reviewing the entire response, there will be some repetition within these responses.

Allowed return on debt

Key messages:

- We support the use of a RAV weighted indexation approach
- We are supportive of Ofgem's options 1 and 2 for the inflation remuneration. Both options have merit and fully address the leverage effect. We do not support option 3 as it fails to address the leverage effect
- We support Ofgem reviewing the index linked debt assumption under options 1 and 2. Debt market capacity is such that we expect index linked debt will only be able to finance a smaller part of our RAV in the future (expected c.20% by the end of RIIO-3)
- Evidence provided in this response and by the ENA demonstrates that additional borrowing costs exceed the current allowance of 25 bps

FQ1. Do stakeholders consider there to be good reasons to deviate from the overall approach set out under UKRN Recommendation 8?

We are broadly supportive of the overall approach set out in the UKRN recommendation 8.

We note however that the detailed commentary in the UKRN guidance refers to the significant control networks have on the timing and nature of debt etc. NGET will be going through a period of high growth and the assumption that networks have significant control over the timing of debt issuance may not hold for RIIO-ET3. The quantum of debt financing required each year is such that if NGET were to seek to delay debt issuance it may encounter increased issues with debt market capacity. This could result in higher cost or potentially failure to achieve the financing required.

As per our response to FQ2 we are also concerned that Ofgem's proposals risk not being fully consistent with this recommendation.

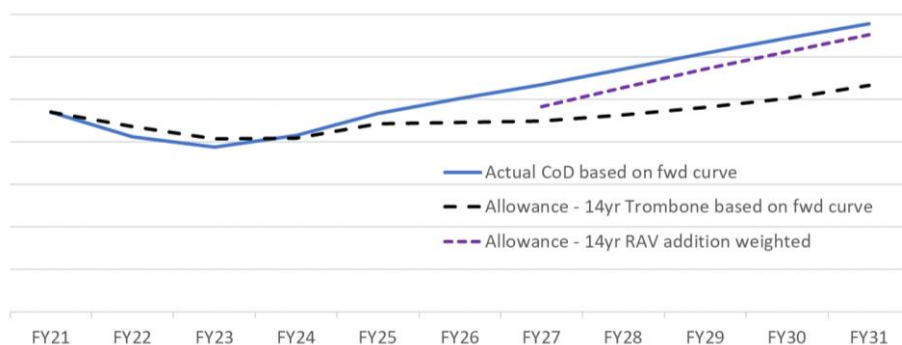
FQ2. Do stakeholders have evidence in support of or opposition to one or more of the updated indexation or inflation remuneration methodologies under consideration.

We address the points relating to the indexation and inflation methodologies separately.

Indexation methodology

We agree with Ofgem that an unweighted trailing average is no longer an optimal method to calculate the allowance.

We illustrate the problem with continuing with an unweighted trailing average with the graph below which shows we would under recover our cost of debt even if outturn rates were in line with forward rates.



Source: National Grid. Assumes actual cost of debt at the beginning of T2, new debt issued flat to iBoxx Utilities 10yr+ Index, and NGET's projected capex

We are supportive of the approach outlined in paragraph 2.15.

Ofgem currently ensures the allowance matches efficient costs for the notional network through the calibration exercise. In the past this has resulted in Ofgem either amending the length of the trailing average or, as in the case of RIIO-ED2, adding a calibration adjustment. In paragraph 2.17 there is an intent to increase consistency between price controls. We would encourage Ofgem to give further explanation of how the calibration exercise will reconcile a desire to increase consistency of the trailing average length between price controls with Ofgem's current approach of complying with UKRN recommendation 8 by setting allowances to recover the expected efficient debt costs of the sector as a whole. It would be inappropriate for the methodology to result in debt allowances on an ex-ante basis that are expected to over or under fund debt costs for a price control period.

Inflation methodology

With the updated inflation methodology proposals, we are supportive of options 1 and 2 (nominal COD or inflating the RAV with the long run assumption for fixed rate debt). Both options fully address the leverage effect.

Option 1 has the advantage of most transparently funding cash interest costs without requiring other offsetting financeability adjustments elsewhere in the price control. With significant RAV growth expected, it is preferable to address such financeability challenges at source.

We acknowledge the potential drawback detailed in the SSMC that there could be a near-term consumer bill impact, but we consider the impact presented to potentially be overstated in the electricity transmission sector. It is highly likely that cash measures will be required as part of the price control to ensure financeability. Such measures are partly required to offset the negative financeability impact of currently providing for a real cost of debt allowance rather than nominal. Providing for a nominal allowance might therefore be expected to reduce such a requirement and reduce the near-term impact on consumer bills.

We are also supportive of option 2 as an alternative approach to fully address the leverage effect for the notional company and we proposed this as an alternative that avoids the consumer bill impact associated with option 1.

We note that Ofgem may choose to change the long run inflation assumption under both options 2 and 3. Given that option 2 fully addresses the leverage effect we do not consider it necessary to change the assumption under option 2. Increasing the assumption would likely have a negative impact on credit metrics and increase financeability challenges requiring additional offsetting cash measures to be used. Any reduction in the allowed real return may also damage the investability of the sector.

In our response to the inflation call for input we were supportive of Ofgem taking no action in relation to the inflation leverage effect. Ofgem's decision was to reject that 'do nothing' option. Ofgem expresses a clear view in paragraph 2.26 that "Variation in returns to equity driven by high or low inflation over the short run, even if balanced over the long run, may undermine the legitimacy of the price control". We acknowledge this view. Recent experience has demonstrated that inflation can be difficult to accurately forecast. We do not support option 3 (different long run assumption) as it does not address the leverage effect and will retain the variations in returns to equity which Ofgem itself believes may undermine the legitimacy of the price control.

We understand from the SSMC working group discussion that Ofgem only intends to review the ILD assumption under options 1 and 2. We agree with this given that a reduction in the ILD weight under option 3 would increase the leverage effect by increasing the proportion of the RAV subject to the effect. As explained in our response to FQ3 below, we support a reduction in the ILD assumption.

The SSMC suggests the use of breakeven inflation implied between nominal and index linked gilts as an alternative long-term forecast. Breakeven inflation is not a forecast or expectation of inflation, it is the difference in yield between two types of gilts. As explained by Frontier Economics¹, the pricing of gilts and index linked gilts includes inflation risk premium, liquidity premium, potential additional convenience premium brought by ILG over nominal gilt, and supply and demand dynamics in general which are unrelated to inflation expectations. Also, a simple look at the data demonstrates that breakeven inflation is not a credible alternative for the long-term inflation assumption.

¹ Frontier Economics, Initial consideration of break-even inflation for price control purposes, March 2024, p6. Hereafter this document is referred to as 'Frontier Economics - Break-even inflation for price control purposes' only.

In anticipation of aligning RPI with CPI-H in 2030, we would expect the data to reflect this anticipated event. As explained in the Frontier Economics report² if the breakeven inflation data accurately reflected investors' future inflation expectations, we would expect to observe a discernible drop in the forward implied 1-year breakeven inflation rate. In other words, any reasonably good inflation indicator should show a drop in the 1-year forward rates before and after 2030, as RPI is brought into line with CPI-H. Such a drop is not observed undermining the reliability of breakeven inflation data as a robust indicator of CPI-H inflation going forward. As explained by Frontier Economics³ this evidence suggests that the underlying data from which the BoE break-even inflation curve is derived contains unexplained anomalies and should not be relied on.

The Frontier Economics report is also clear that Ofgem has not established that an alternative inflation forecast is required, and further work would be required to establish the pros and cons of the various alternatives.⁴ One of the advantages of the current long run assumption is that it is rule based and transparent, i.e., Ofgem consistently uses the forecast from an independent report that is published regularly. If Ofgem does choose to modify the long run inflation assumption it is important that any alternative is rule based and anchored to a credible source of forward-looking forecasts.

FQ3. Do stakeholders have views on the potential approaches to implementation of the proposed methodology changes, including assumptions relating to ILD weights?

We are supportive of reducing the index linked debt (ILD) assumption. The expected growth in the RAV, and limited market capacity for ILD, is such that the NGET actual company is likely to see the ILD proportion of the debt book fall, to circa 20% by the end of RIIO-3. Although it is possible to increase the proportion of ILD synthetically using derivatives, it can be costly to do so, and Ofgem has historically not taken inflation derivatives into account when calibrating the cost of debt allowance.

As well as market capacity, a further reason for reducing the ILD assumption is that natural ILD has historically been more expensive than nominal rate debt.

We agree that any changes to notional ILD assumptions need to be implemented carefully. Ofgem's regulatory precedent and UKRN recommendation 8 both base debt allowances on notional capital structures rather than actual. Of the options proposed we think the option in paragraph 2.46 (a) is most consistent with this.

We recognise however that companies that had previously issued more ILD than the notional level to reduce their inflation exposure may now find that they become more exposed by the changes that may be made. Ofgem confirmed in a working group that company bespoke transition measures may be an option and that it is best to avoid imposing additional costs on networks through the choice of transition approach and time period. We agree with this approach and believe company specific circumstances should include the choice of transition period and allow for a consideration of the maturity of existing ILD. Networks could propose a suitable transition approach in their business plan submissions.

We do not support option 2.46 (c) as it removes the risks and rewards for a licensee to deviate from the notional company assumptions and exposes consumers to the interest rate mix chosen by shareholders.

FQ4. Do stakeholders wish to propose any other alternatives that have not been proposed?

Our response to FQ3 includes a proposal for companies to include company specific transition plans relating to changes in the ILD assumption in their business plans. This proposal reflects the fact that existing ILD proportions, and maturities, have been set based on company specific considerations in the context of the prevailing regulatory treatment at the time. Company specific proposals will help to avoid unnecessary transition costs.

Also, we note in FQ5 below that while our preference is for CPI/CPIH basis risk to be addressed through the additional borrowing costs allowance, an alternative approach would be to index the proportion of RAV for ILD to CPI instead of CPIH.

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

The allowance for additional borrowing costs should continue to include allowances for transaction costs, liquidity / revolving credit facilities, cost of carry, and for CPIH issuance/basis mitigation until at least 2030.

² Frontier Economics - Break-even inflation for price control purposes, p7-8

³ Frontier Economics - Break-even inflation for price control purposes, p8

⁴ Frontier Economics - Break-even inflation for price control purposes, p9

The study by NERA for the Energy Networks Association (ENA) on additional borrowing costs for the RIIO-3 price control⁵ shows an additional borrowing allowance of 54-59bps. Within the CPIH issuance/basis mitigation element of the allowance, we would like to draw out an allowance for the CPI/CPIH basis risk which should apply until at least 2030, as there is no meaningful market to manage this risk. For example, having spoken to some leading banks on this, they are only aware of one CPIH swap which has been transacted for £50m, compared to £3.1bn of ILD that NGET has. An alternative way to address this risk would be to index the proportion of RAV for ILD to CPI instead of CPIH.

In addition, we are supportive of an allowance for new issue premium. The iBoxx indices substantially consist of secondary market bond yields and so do not include the premium paid for a new bond issue. Although it could be argued that the calibration process effectively leads to the new issue premium being factored into the allowance for embedded debt, this is not the case for new debt. The NERA study estimates new issue premium to be 15bps, which is consistent with the Civil Aviation Authorities (CAA) final decision for the H7 price control for Heathrow.

As a result of the scale of investment required, NGET could become the largest issuer of Sterling bond debt and a significant issuer of Euro denominated bond debt in its own right to finance this investment. The amount of debt NGET will have outstanding, and the additional amount required each year will weigh on investors as they reach concentration limits. Investors would need to see NGET debt as good value compared to peers to be incentivised to go overweight in their portfolios with NGET. We see evidence of this for companies which have some of largest amount of debt outstanding in each market e.g., Pfizer in the US, Volkswagen in the Eurozone, Thames Water (even in 2019) in Sterling, and also for companies which have increased the amount of debt they have in a relatively short period of time, even after controlling for credit rating and industry sector. Debt investors have told us they have not participated in our bonds because they have reached concentration limits in our name, and also credit analyst reports mention this as the reason why some companies' bonds trade cheaply. This extra cost of financing should be reflected in a large issuer allowance for NGET, which adjusted for the projected amount of new debt, we calculate to be 9bps⁶.

We agree with the intention to continue with an infrequent issuer premium for those networks who issue infrequently.

⁵ NERA, Additional Cost of Borrowing for the RIIO-3 Price Control, February 2024, p2

⁶ We will submit this evidence separately to our SSMC response due to the large amount of data

Allowed return on equity

Key messages:

- Macroeconomic conditions have changed significantly since the RIIO-ET2 Final Determination, and there is a significant increase in the scale of investment and levels of risk now expected for ETOs in RIIO-ET3.
- A failure to set a sufficient Cost of Equity (CoE) would cause harm to consumers. Substantial new notional equity is required during RIIO-ET3 and it would be wrong to set a CoE that is below that required by investors. Such a return would not be investable and would risk delivery of the investments required for net zero.
- Cross checks based on market evidence demonstrate that a simple roll forward of the RIIO-ET2 CoE methodologies will not result in an adequate point estimate for the CoE.
- A through the cycle approach to setting CAPM parameters that results in the allowed return for a price control being knowingly set lower than the return required by investors is not consistent with Ofgem's statutory duties, particularly the financeability duty. Ofgem cannot fetter its own future discretion, so cannot simply argue that regulatory underestimation of the CoE will "balance out" over successive price controls.
- We do not support some of Ofgem's proposed approaches to implementing the UKRN guidance – some of these do not reflect macroeconomic conditions or the scale of the 'investability' challenge.
- The UKRN recommendations are largely broad in nature and allow scope for alternative approaches to implementation where justified by circumstances.
- The allowed level of equity return for electricity transmission should be appreciably higher in RIIO-ET3 than in RIIO-ET2. The evidence at this early stage in the process suggests a range of 5.8-6.9% (60% notional gearing)⁷, and we would like to engage with Ofgem to develop this analysis further.

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

FQ7. Do stakeholders consider there to be good reasons to deviate from the respective approaches set out under UKRN Recommendations 2-7?

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

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

Key Message: The RIIO-ET3 Context and task before Ofgem

The cost of raising capital has increased dramatically since the start of RIIO-ET2. Base interest rates are now many hundreds of basis points higher than seen during the 'lower-for-longer' period in which RIIO-ET1 and RIIO-ET2 were set. Capital markets have not seen returns on this scale since TPCR4. Allowed returns should increase to reflect the change in market conditions. Our proposed range detailed in this response is lower than the returns that were applied in TPCR4, when similar conditions were last experienced.

This significant and rapid evolution of capital market conditions must be reflected in an appropriate regulatory adaptation. However, the evolution in capital markets is far from the sole driver of change. Risk is increasing for companies at RIIO-ET3, with required expenditure levels set to dwarf previous price controls. These investments are complex, time pressured and critical to achieve GB's net zero targets. To fund these

⁷ Frontier Economics, Cost of equity for NGET at RIIO-3, March 2024, Table 2. We note that the risk free rate is set using a data cut-off date of 20 December 2023 and is as per the Oxera RIIO-3 Cost of Equity Report (dated 23 February 2024) prepared for the ENA.

investments, there will be a need for the notional company to raise “fresh” equity financing⁸ for the first time under the RIIO framework.

The corollary is that the RIIO framework has no precedent for the set of circumstances expected in RIIO-ET3. A simple look-back to and roll-forward of RIIO-2 will be insufficient. Ofgem must consider the circumstances and employ their full regulatory toolkit to set an appropriate Cost of Equity (CoE) which is able to attract and retain the requisite capital.

We agree that the CAPM, when properly calibrated, should remain the primary method of estimation. However, corporate finance theory follows that for equity to be investable, it must offer an adequate additional return over debt securities to reflect the hierarchy of capital structure and the risk differentials between the asset classes. This is particularly pertinent when the notional company must attract equity investment.

The overall suite of market evidence available at this early stage of the process, from a range of sources including the observed yields on hybrid bonds, points towards a range for the allowed cost of equity in the region of 5.8%-6.9% (60% notional gearing).⁹ We are keen to engage and work further with Ofgem on the evidence referred to in this response and, as new evidence and analysis is developed, move towards agreement of an appropriate range.

We detail the evidence we have created to date and where we do, or do not, agree with the Ofgem proposals within our response below.

Structure and scope of this response

There is significant overlap between the scope of questions FQ6, FQ7, FQ8 and FQ9, and so we provide a single combined response to these questions. These questions are each concerned with the application of the UKRN methodology guidance and the estimation of the CoE, including the use of CAPM, the estimation of the underlying CAPM parameters, and cross-checks. Whilst FQ9 covers slightly broader topic areas, we consider this still broadly relates to applying and interpreting UKRN guidance. We consider that the UKRN guidance incorporates a degree of flexibility for regulators, as well as a recognition that a regulator must adopt approaches which are in line with its specific statutory duties¹⁰ and which are suited to the relevant circumstances of a price control.¹¹

To aid the reader the structure of our response to these questions is as follows. First, we address the overall CAPM methodology and the ‘through the cycle’ approach that appears to have helped shape Ofgem’s proposals, before presenting evidence that market based cross checks suggest that the CoE required by investors is higher than a simple roll forward of the RIIO-2 CAPM approaches would suggest. We then discuss the estimation of the individual CAPM parameters of total market return (TMR), risk free rate (RFR) and Beta, and then the selection of a point estimate.

Alongside and as part of this response, we attach as appendices the following reports as evidence:

- Frontier Economics – The Relationship between Total Market Return and Gilt Yields
- PwC – Identifying and quantifying risks for RIIO-T3
- Frontier Economics – Triangulating Beta Evidence for Electricity Transmission in RIIO-3
- Frontier Economics – Cost of equity for NGET at RIIO-3
- KPMG – Inference analysis as a cross-check on allowed returns at ET3

We also refer to the following reports which have been commissioned by the ENA, which will be submitted by the ENA as part of its response:

- Oxera – RIIO-3 Cost of Equity

⁸ Ofgem, RIIO-3 Sector Specific Methodology Consultation (SSMC) Finance Annex, December 2023, paragraph 1.6. Hereafter this document is referred to as ‘RIIO-3 SSMC (Finance Annex)’ only. The document may be accessed [here](#).

⁹ Frontier Economics, Cost of equity for NGET at RIIO-3, March 2024, Table 2. We note that the risk free rate is set using a data cut-off date of 20 December 2023 and is as per the Oxera RIIO-3 Cost of Equity Report (dated 23 February 2024) prepared for the ENA.

¹⁰ UK Regulators Network, UKRN guidance for regulators on the methodology for setting the cost of capital, March 2023 p2, p4. Hereafter this document is referred to as ‘UKRN Guidance’ only. The document may be accessed [here](#).

¹¹ UKRN Guidance, p7

- Frontier Economics – Equity Investability in RIIO-3
- Frontier Economics – The Low Beta Puzzle in RIIO-3
- Frontier Economics – Initial Consideration of Break-even Inflation for Price Control Purposes

We also refer Ofgem to the response to the SSMC by the ENA.

The overall approach to estimating the Cost of Equity

The UKRN guidance supports the use of CAPM as the primary method for estimating the CoE. As recognised by the CMA in the RIIO-ET2 and GD2 appeals, use of CAPM involves estimation of the individual parameters it uses, and Ofgem has a responsibility to *'have regard to the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed'*.¹²

Furthermore, as also recognised by the CMA, in estimating the CoE *"the ultimate requirement should be to ensure that the overall cost of equity allowance is sufficient to attract investors and allow companies to finance their activities"*,¹³ and meeting this requirement is in the best interests of consumers (as we explain in our response to FQ14 on "Investability"). If the CAPM-derived estimate of the CoE is not sufficient to meet this requirement, then the approaches to estimating one or more of the CAPM parameters needs to be modified, and/or the regulator should "aim up" in order to reach an allowed CoE point estimate that is sufficient.

Within the CAPM, there are a multitude of methodological choices which can have a significant effect on the ultimate estimate. We also highlight that for electricity transmission in RIIO-3 the use of cross checks will be more important than ever to ensure that the CAPM is appropriately calibrated.

With regard to each CAPM parameter, we consider the UKRN methodology guidance allows scope for alternative approaches to implementation. It is clear, both from the UKRN guidance, and from the differences in approach in the CMA decisions in the RIIO-2 and PR19 Appeals, that on certain methodology questions there may be a number of possible approaches.¹⁴ The preferred choice between these may depend on the relevant circumstances, which Ofgem acknowledge in the SSMC Finance Annex:¹⁵

We aim to keep the financial policies and methodologies stable from RIIO-2, where appropriate. However, we are also cognisant that appropriate evolution, particularly to deal with macro developments that create new challenges or where updates to best practice can be identified, is likely to underpin regulatory credibility and support the ongoing attractiveness of investment in the sector. For RIIO-3, we see two macro developments as compelling us to review the way we use our regulatory finance toolkit.

We consider that the two relevant developments, from an ET perspective, are:

- There has been significant evolution within the capital markets, primarily driven by a transition into a higher interest-rate environment than that seen for the last few price controls
- There are significantly increased requirements on ETOs to complete critical investments, with the investment programme for NGET in RIIO-ET3 significantly larger than RIIO-ET2. ASTI investment alone will exceed the capex spend in the whole of RIIO-ET2. Ofgem expect funding some of this investment will involve raising fresh equity at the notional company.

Given the change in circumstances, as acknowledged by Ofgem, an acceptance by the CMA that a particular RIIO-2 approach was 'not wrong' in the circumstances of that particular price control is not a strong justification for maintaining a methodology choice for the RIIO-3 price control in new and different circumstances. Indeed, the significant change in circumstances which will be reflected at RIIO-3 means that what was 'not wrong' previously may now be so.

¹² s3A(2)(b) Electricity Act 1989

¹³ Cadent Gas Limited, National Grid Electricity Transmission plc, National Grid Gas plc, Northern Gas Networks Limited, Scottish Hydro Electric Transmission plc, Southern Gas Networks plc and Scotland Gas Networks plc, SP Transmission plc, Wales & West Utilities Limited vs the Gas and Electricity Markets Authority; Final determination Volume 2A: Joined Grounds: Cost of equity, The Competition and Markets Authority (CMA), October 2021, para. 5.723. Hereafter this document is referred to as 'RIIO-2 CMA Final Determination' only.

¹⁴ For example, the CMA included AAA Bonds in its estimate of the Risk Free Rate at PR19, but found Ofgem 'not wrong' for not doing the same at RIIO-ET2

¹⁵ RIIO-3 SSMC (Finance Annex), 1.4

Furthermore, retaining a prior approach purely because it was previously found to be 'not wrong' would be the wrong test as to what methodology should be adopted when designing a future price control: the methods chosen for each sector in RIIO-3 should not be those which were merely, in a specific prior set of circumstances and context (which, as noted above, have now fundamentally changed), found not so inferior to other methods as to be considered a clear "error". The principles of best regulatory practice (to which Ofgem must have regard under section 3A(5A) Electricity Act 1989) require Ofgem to adopt the approach that is considered better than others and is now best suited to the expected circumstances of the 5 years covered by the next price control.

Whilst there could be merit in maintaining consistency in approach from one price control to the next if circumstances were largely unchanged (as this might help give greater confidence in the stability of the regulatory framework) this is not the case when circumstances are incomparable on a number of fronts. Such consistency would in any case count for little if the resulting allowed returns are too low to attract the notional 'fresh' equity that Ofgem expect to be needed to fund the investments that are required in RIIO-ET3. We are pleased that Ofgem has acknowledged this is an important consideration through their recognition of 'Investability' (see also our response to question FQ14).

Given the investability considerations, we believe changes will be required to the CoE methodologies proposed in the SSMC. These are discussed in the remainder of our response to these questions: we first consider the concept of a 'through the cycle' approach which is referred to in the SSMC, and then provide specific observations on the separate elements of the methodology relating to cross-checks, TMR, RFR, beta, and the selection of a point estimate for the CoE.

The 'Through the Cycle' approach

We have particular concern with a "through-the-cycle" view of setting an allowed CoE that is used in the SSMC to justify certain aspects of Ofgem's proposed approach.

Our view is that adopting this terminology is an acknowledgement on Ofgem's part that their proposed approach may result in a lower level of allowed equity return during the RIIO-ET3 price control than is suggested by the evidence currently available. Given the need to consider whether investors will be sufficiently incentivised to contribute the investment required to deliver net zero, and the significant downside if they are not, this approach would not be consistent with Ofgem's statutory duties.

We understand the term predominantly refers to use of a TMR value which may not be technically 'fixed' but is mostly invariant to movements in the risk-free rates. Consequently, when interest rates are high the allowed return will be understated.

The 'Stable v Fixed' TMR debate is covered later in our response. In summary, we agree that the TMR is more stable than the ERP and do not believe the ERP should be 'fixed'. However, the TMR being the more stable parameter does not preclude that it should move directionally with the risk-free rate, though not on a one-for-one basis. In adopting a 'through the cycle' approach, Ofgem have interpreted the concept of 'stable' TMR in an overly rigid way that is, in practice, much closer to a "fixed" view of TMR. This interpretation is simply not consistent with the evidence and the pattern of past decisions.

We now examine specific reasons why a 'through the cycle' approach is not workable in practice.

First, a "through-the-cycle" approach is not workable given Ofgem's oft-stated inability (repeated in the SSMC Finance Annex¹⁶) to fetter its future discretion. Ofgem appear to expect investors to believe that in some unspecified future price control allowed returns will be set above the then prevailing level in order to offset a shortfall during RIIO-ET3 – and moreover expect investors to be willing, on this basis, to provide additional "fresh" equity before then at a time when allowed returns are below the currently required level. As Ofgem cannot fetter its future discretion, and in future price controls will need to take decisions that are (at that point) in line with its principal objective to protect the interests of consumers (as well as reflecting any new analysis, thinking and evidence then available), investors today would not and could not rely on such an approach being adopted in future price controls. This includes those times when the "through-the-cycle" approach would support higher values than other evidence.

Second, a "through the cycle" approach would not appear to be consistent with Ofgem's principal objective and statutory duties, particularly the financeability duty, as the CoE that is set in a price control should be the required level of return for the next 5 years, not a long-term "through-the-cycle" view. Indeed, Ofgem itself

¹⁶ RIIO-3 SSMC (Finance Annex), paragraph 5.14

recognises that “a 5-year review period remains appropriate for setting the allowed return and assessing financeability”.¹⁷ Such recognition is in addition to Ofgem’s previous comments on the drawbacks of longer assessment periods. In the FSNR, it was noted:¹⁸

6.27: ‘...Stakeholders also highlighted the importance of regularly scrutinising whether the approach to the estimation of cost of capital and the overall level of returns remained appropriate.’

Ofgem then responded:

6.31: ‘...we do not consider there to be evidence that the financial and financeability frameworks would be substantially improved by setting price controls over a set period different to five years. On this basis, we plan to retain the 5-year periodic review when setting allowed returns and assessing financeability’

A “through-the-cycle” approach is particularly troublesome given increased investment requirements in RIIO-ET3 will create an unprecedented need to attract new finance in the ET sector. Investors will be unwilling to provide this capital (including “fresh” equity) during the next five-year period merely on the hope of a balancing out in the long-run.

That it is the required level of equity return during the specific years of the price control that should be set by a regulator has previously been considered and clearly explained by the CC (the forerunner of the CMA) in the 2010 Bristol Water Appeal and the 2014 Northern Ireland Electricity Appeal. These decisions also explained that long-run averages were nevertheless relevant as they help to inform the expected required level of return over the relevant period:

- Bristol Water Appeal¹⁹
 - 9.6 “We are calculating the required return over the period 2010/11 to 2014/15 and, in our view, it was the expected cost of capital in that period that was relevant. Long-run averages are relevant only to the extent that they affect the cost of capital in that period. ...”
 - 9.7 “It is sometimes suggested that regulators should seek explicitly to set required return equal to some concept of long-term average cost of capital rather than the expected cost of capital for the specific price-cap period. We did not consider that this would not be consistent with our duties in this determination. Setting required return below the expected cost of capital for the period would not be consistent with our section 2(2A)(c) duty to secure that the company can finance the proper carrying out of its functions.”
- NIE Appeal²⁰
 - 13.6 “We are calculating the required return over the period 1 April 2012 to 30 September 2017 and it is the expected cost of capital **in that period that is relevant**. Long-run averages are relevant only to the extent that they affect the cost of capital in that period. They may do so for two main reasons: (a) ... (b) Asset prices and/or yields may have a tendency to revert to longer-run mean value and, if so, past levels are relevant to estimating the expected level over the relevant period.”

The above thinking is also consistent with the approach to TMR in the RIIO-ET2 and GD2 price control appeals, as observed by the CMA in its Final Determination at Paragraph 5.286, which noted that at that time: “...[Ofgem’s TMR cross-checks] suggest that the balance of **market participants currently expect returns to be lower than they have been, on average, in the past and that such expectations are, in fact, what regulators are seeking to measure in their estimates of TMR.**”

Third, a “through-the-cycle” view does not appear to have been Ofgem’s approach in prior price controls, where allowed returns have been calibrated to track the interest rate environment. In those price controls, regulators made decisions which included methodological changes, influenced by attempts to ensure alignment with the wider market conditions. Frontier note that:²¹

¹⁷ RIIO-3 SSMC (Finance Annex), paragraph 3.6, which summarised Ofgem’s FSNR Framework Decision.

¹⁸ Ofgem, Future Systems and Network Regulation (Core Document), October 2023. The document can be accessed [here](#)

¹⁹ Bristol Water Plc: Determination on a reference under section 12(3)(a) of the Water Industry Act 1991, the Competition Commission, August 2010, para. 9.6-9.7

²⁰ Northern Ireland Electricity Limited price determination: A reference under Article 15 of the Electricity (Northern Ireland) Order 1992, the Competition Commission, March 2014, para. 13.6

²¹ Frontier Economics, Equity Investability In RIIO-3, March 2024, para 56. Hereafter referred to as Frontier Economics, Equity Investability In RIIO-3

“As interest rates continued to fall regulators responded by placing greater weight on approaches that had previously played a much more limited role (or no role at all) in regulatory determinations... regulators started to place less weight on measures that were high, and more on those that were low.”

We refer to the attached reports for further discussion of how regulators have historically tracked movements in interest rates.²² However, the clear position is that it is untenable, asymmetric and incompatible with ensuring the investability of the sector for Ofgem to ask investors to accept an explicit “through-the-cycle” view to justify a lower CoE for RIIO-3, where these lead to an estimated CoE that is lower than is required for the next 5 years, and lower than is suggested by contemporary market evidence, especially given Ofgem’s previous approach of reflecting contemporary evidence of reduced market returns in the CoE at previous price controls

More broadly we note that Ofgem have recognised that RIIO-ET3 will reflect significantly new circumstances by considering whether the financeability duty should include an assessment of investability.²³ This is critical in ensuring the CoE is appropriately set, but is necessary not only due to the increased capex requirements but also the significant change in market conditions, as well as Ofgem’s new net-zero and growth statutory duties. The UKRN guidance notes that in these circumstances, regulators should consider whether the price control is properly set (emphasis added):

*‘...we recognise that material changes to market conditions, finance theory, statutory frameworks regulators operate under, and the type of asset being regulated, **could constitute a case for revising regulatory practice**’²⁴*

We consider this test of ‘investability’ should determine whether the price control has been properly calibrated so that networks are able to attract sufficient capital and address this point later in the response. We note here that while Ofgem’s principal objective under s.3A(1) Electricity Act 1989 clearly requires it to balance the interests of existing and future consumers over the short term and the longer term, there is a clear risk that underinvestment during RIIO-ET3 will result in longer-term harm to consumers and the UK Government’s net zero targets.

Cross-Checks on the allowed Cost of Equity

Paragraphs 3.81 and 3.82 of the SSMC explain that consistent with the recommendations of the UKRN guidance, Ofgem intend to use a range of cross checks to assess whether the CAPM-based estimate is appropriately calibrated relative to estimates suggested by relevant market data and other estimation methodologies but propose only to deviate from the mid-point of the CAPM CoE range if there are strong reasons to do so. At this early stage of the price control, using information currently available, evidence from new cross-checks, supported by updates to some other cross-checks that were previously considered in RIIO-2, provides a strong indication that a materially higher CoE will be needed in RIIO-3 than in RIIO-2.

NGET believes appropriate weight should be placed on a range of suitably designed cross-checks, and these include debt-derived cross checks which (at the most basic level) ensure that the CoE is appropriately positioned at a level that is sufficiently above the observable CoD to reflect the risk differentials faced by investors.

Frontier provide evidence in their paper *Equity Investability In RIIO-3* as to why these cross-checks are critically important at RIIO-3 in particular, given the focus on attracting investment. Some cross-checks can act as a test of investability²⁵ and ensure that the CAPM derived estimate is not materially understating the required return, which would deter investment. In other words, cross-checks can ensure that the allowed return is set appropriately so that the price control is sufficiently attractive to investors, given no rational investor would invest in equity without appropriate risk premia over debt.²⁶

The suite of cross checks include two new proposed cross-checks, these being (i) a cross-check based on hybrid debt²⁷, and (ii) an “inference analysis” cross-check which is based on inferring the relationship between observed debt pricing and the CoE.²⁸ In addition, the ARP-DRP cross-check which was previously

²² In particular, see Frontier Economics, *The Relationship Between Total Market Return and Gilt Yields*, March 2024. Hereafter referred to as *The Relationship Between Total Market Return and Gilt Yields*

²³ See the National Grid response to FQ14 for a detailed discussion of ‘Investability’

²⁴ UKRN Guidance, pp.8-9

²⁵ Cross-checks of the CoE are in addition to the investability test we propose in FQ14

²⁶ Frontier Economics, *Equity Investability In RIIO-3*, paragraph 6

²⁷ *Ibid*, Section 5

²⁸ KPMG, *Inference analysis as a cross-check on allowed returns at ET3*, March 2024. Hereafter referred to as *KPMG, Inference analysis as a cross-check on allowed returns at ET3*

developed by Oxera and considered in RIIO-2 has since been developed further, to (i) address the main reservations that have been previously expressed about it, and (ii) give a more objective assessment of the margin by which allowed equity returns should exceed debt yields.²⁹

At this early stage of the price control review process, using information currently available, these cross-checks show that if being set today, the CoE for RIIO-3 would need to be materially higher than the midpoint of a simple roll-forward of Ofgem's RIIO-2 CAPM methodology would suggest (5.26%, CPIH real).³⁰ Importantly, these new cross-checks and models not only inform the required level of allowed equity return in RIIO-ET3, but also show that the required return has increased significantly from RIIO-ET2.

The 3 cross-checks are explained briefly below, but we refer to the supporting reports³¹ for a more detailed explanation:

The Hybrid Bond cross-check:

There would be a clear error if the allowed return on equity was set at a level that was similar to, or below, the expected return on long-term senior investment grade debt, given the relative risk differentials. However, because the difference in relative risk between senior conventional debt and equity is significant, such a comparison to senior debt provides only a weak cross-check on equity returns. That is, if the CoE was set at a level that was only slightly higher than the yield on senior debt, it would technically meet this test but would still be at too low a level for rational investors.

As a result, Frontier Economics have developed a CoE cross-check which is based on securities that exhibit some equity like characteristics, but for which yield information is available.³² In particular, Frontier have considered the yield on several hybrid debt instruments issued by National Grid and SSE. Hybrid bonds are securities that have a blend of equity and debt like characteristics, and credit rating agencies typically consider them to be 50% equity-like (and hence 50% debt-like). Comparing the observed yield on these instruments to the observed yield on senior debt (either a bond-index, or the bonds for the issuer of the hybrid debt) can be transposed to calculate the required yield on a 100% equity like security. Evidence from the hybrid bond cross-check indicates that the CoE should fall in the range 5.8% to 8.5%, with a central estimate of 6.7%.³³

Inference analysis

We refer also to the results from KPMG's inference analysis, as presented in the report accompanying this consultation response.³⁴ KPMG's analysis is based on the relationship between companies' equity and debt risk premia, which is quantified using an approach based on Merton's Contingent Claim framework. This seeks to analyse the relative movement of equity return as the observed debt return changes, depending on a number of factors such as market leverage and risk-free rate.

By observing debt risk premia from market data, and by combining these with the expected elasticity as calculated from the other factors, a corresponding range for the CoE for a company (in this case National Grid) can be inferred. The results³⁵ show that:

- at the time of the RIIO-ET2 Final Determination the allowed CoE was **within the range implied by the inference analysis**
- a CoE that is based on a simple roll-forward of the RIIO-ET2 CAPM estimate³⁶ **lies significantly below the range** for the inferred CoE for National Grid group.

This analysis suggests that the required allowed CoE for electricity transmission in RIIO-ET3 would need to be materially higher than the RIIO-ET2 level, even if this was adjusted by using an updated RFR. We refer to section 7 of the KPMG report for detailed quantification.³⁷

²⁹ Oxera, RIIO-3 Cost of Equity, Oxera, March 2024, Section 3. Hereafter referred to as Oxera, RIIO-3 Cost of Equity

³⁰ See Oxera, RIIO-3 Cost of Equity, Table 2.15 for the rolled forward CAPM CoE estimate, at 60% gearing

³¹ See Oxera, RIIO-3 Cost of Equity, Section 3 for discussion of the ARP-DRP cross-check; see KPMG, Inference analysis as a cross-check on allowed returns at ET3 for the Inference Analysis Cross-Check; see Frontier Economics, Equity Investability In RIIO-3, section 5 for the Hybrid Bonds cross-check

³² Frontier Economics, Equity Investability In RIIO-3, section 5

³³ *Ibid*, paragraph 113

³⁴ KPMG, Inference analysis as a cross-check on allowed returns at ET3

³⁵ *Ibid*, Figure 10 and Table 7

³⁶ The roll forward approach adopted by KPMG maintains Asset Beta (0.349), Notional Gearing (55%) and Total Market Return (6.50% CPIH real) as per the ET2 position. The risk-free rate and CPI-RPI wedge is updated with latest market data. See KPMG, Inference analysis as a cross-check on allowed returns at ET3, Section 4

³⁷ It is likely that this figure is somewhat conservative, given the delta between market leverage and the notional gearing level (that is, that notional gearing has tended to exceed market leverage)

ARP – DRP cross-check

Oxera's new work for the ENA includes a cross-check on the reasonableness of the estimated CoE range using the ARP–DRP framework.³⁸ The strength of this cross-check is that it uses market-observed data on current debt spreads to test the reasonableness of a CoE that is estimated using theoretical models, such as the CAPM. This ARP–DRP cross-check was developed around the time that the RIIO-2 price control was being developed. Whilst the CMA has repeatedly recognised the logic and potential value of this cross check,³⁹ it considered it inadequately developed at the time of the RIIO-ET2/GD2 appeals to establish that the CAPM-derived estimate was wrong.

Oxera's new report now addresses the main criticism of the cross-check during RIIO-2 (as well as other reservations that have been expressed about it), which was that the required "margin" by which the ARP should exceed the DRP was not quantified. Oxera note that at 100% gearing, the ARP must equal the DRP. Through extrapolation, by calculating the observed ARP and DRP at 100% gearing levels, Oxera give an estimate of the required minimum ARP.⁴⁰

The application of the ARP–DRP framework, taking account of recent capital debt market conditions, suggests that the appropriate point estimate of the CoE in RIIO-3 should as a minimum be set close to the upper end of Oxera's CAPM range of 5.08% to 6.48%.⁴¹

The SSMC Position

Ofgem appears to acknowledge, in the SSMC, that cross-checks would likely point towards a material increase in required returns in RIIO-3. Ofgem does not dismiss the value of the cross checks, but do appear to suggest that for RIIO-3 they should not be heavily weighted as *"it is very important that [we] do not 'cherry-pick' when assessing equity premium over debt, as 'fixing' for any perceived insufficient premium in one price control period, without factoring in the through-the-cycle impact of the stable TMR approach, may lead to consumers structurally over-rewarding investors."*⁴²

We agree that the equity premium over debt is not fixed, and that it may vary. This is consistent with our view that the ERP is not fixed. However, Ofgem's broader thinking is flawed and there are fundamental problems with ignoring relevant cross-checks on the grounds of such a "through-the-cycle" view when estimating allowed CoE. These problems have already been explained, but in any case, it is not "cherry-picking" to give debt-based cross-checks more weight at RIIO-ET3 given that:

- The hybrid-bond and inference model cross-checks are new, i.e. they were not considered in RIIO-2;
- Where debt-based cross-checks (specifically ARP–DRP) that were considered previously placed a floor on the required CoE (but were perhaps at that time unable to indicate the appropriate level for the allowed CoE), it would not now be cherry-picking to give them due weight, when the methodology has been extended/improved and at a time that they are now able to show clearly that a higher required return is needed in RIIO-3 than the likely CAPM-calculated value;⁴³ and
- The valid concern that consumers do not 'over-reward' investors must be symmetrical. It is equally valid to ensure that investors are not structurally under-rewarded, particularly in the context of a need to attract capital and ensure the price control is investable. It is highly relevant to consider (and address) the risk of whether investors might not invest in equity because they can choose to invest in debt and get a better risk / reward balance. There are, as Frontier notes, potentially additional perverse consequences in this scenario as companies could be effectively encouraged to adopt higher gearing.⁴⁴

Interest rates have evolved substantially since RIIO-ET2, and it is theoretically possible that further significant movement occurs between now and the RIIO-ET3 Final Determinations, including possible reductions in interest rates. However, even in this event, it is certain that RIIO-ET3 represents a very

³⁸ Oxera, RIIO-3 Cost of Equity, Section 3

³⁹ See (i) Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations Final report, The CMA, March 2021, para. 9.3186 (hereafter 'PR19 CMA FDs'): "The Oxera analysis is based on what seems like a logical principle: that for a regulated business with capped returns, **the cost of equity used in the WACC should still be assumed to remain sufficiently above the current cost of debt to promote equity investment in the sector.** We agree that this is conceptually sensible, ..." (emphasis added); and (ii) RIIO-2 CMA Final Determination, para 5.717 : "... we accept that ARP-DRP **might ultimately gain more general acceptance** as a relevant cross-check within regulatory price control processes, the approach and its acceptance is **inadequately developed at this stage** to be sufficiently convincing"

⁴⁰ Oxera, RIIO-3 Cost of Equity, Section 3

⁴¹ This range is calculated at notional gearing of 60%

⁴² RIIO-3 SSMC (Finance Annex), para. 3.84

⁴³ Relative to the Ofgem 'Roll forward' calculation in the Oxera, RIIO-3 Cost of Equity report

⁴⁴ Frontier Economics, Equity Investability In RIIO-3, paragraph 39 (footnote 15)

different world to prior controls and market participants do not expect a reversion to the extremely low, stable interest rate environment seen during RIIO-ET2. Given this, the cross-check evidence is critical.

A range of other cross-checks were considered by Ofgem during RIIO-2 and are now referred to again by Ofgem in the new SSMC Finance Annex at paragraph 3.82. National Grid and other networks have previously expressed reservations with each of these cross-checks, for example in NGED's response to the RIIO-ED2 Draft Determination.⁴⁵

Rather than repeat our reservations in this response, we refer Ofgem to previous submissions in which they are set out, and to the discussion of these cross-checks in the new report by Frontier Economics.⁴⁶ Whilst the limitations and drawbacks of these cross-checks would limit the weight that should individually be placed on them, the fact that there is broad consensus across a range of cross-checks that the CAPM estimate is mis-calibrated provides compelling evidence that an increase in allowed CoE is required.⁴⁷

In the RIIO-3 SSMC Ofgem refers to the following cross-checks⁴⁸ which it previously considered in RIIO-2:

- A WACC cross-check on the basis of observed gearing levels at comparator companies – this appears to be the cross-check which in RIIO-2 was previously referred to as a “Modigliani-Miller” cross-check;
- A Market-to-Asset Ratio (MAR) cross-check;
- An Offshore Transmission Operator (OFTO) implied returns cross-check;
- An unadjusted investment managers' implied CoE cross-check;
- An unadjusted infrastructure fund implied CoE cross-check; and
- An adjusted (at 0.9 beta) investment managers' implied CoE cross-check.

We refer to the Frontier report for discussion of these cross checks.⁴⁹ In particular, though, we draw attention to the specific reasons why we do not agree that significant weight should be placed on MARs as a cross-check of the proposed allowed CoE.

In their new report, Frontier Economics again identify some of the problems that need to be overcome to estimate and interpret MAR values, which can include the need to disaggregate the overall market value of a company or group into constituent elements and the circularity involved in attempting to infer a required CoE from MARs when the underlying investor assumptions or expectations are not and cannot be known.

These complexities are even greater in the context of transaction MARs than for trading MARs, as the former are affected by a range of additional unknown and potentially transaction-specific factors and assumptions made on the part of a successful bidder, and hence even greater care is required when interpreting transaction MARs as it is not possible to untangle these factors.

Frontier do not attempt to infer CoE values from MARs at this stage. However, Frontier do show that trading MAR values appear to be materially lower now than at the time of RIIO-2 for the listed water companies, whose MAR values Ofgem previously considered.

Notwithstanding the previously expressed reservations concerning Ofgem's other cross-checks from RIIO-2, Frontier Economics, in its recent work for the ENA, has included updated values for some of these cross-checks, where more up-to-date information is available. Three of the cross-checks listed by Ofgem are omitted from this table:

- The “WACC” or “Modigliani-Miller” cross-check, as this is not considered an appropriate cross-check given it uses the same CAPM model including the same TMR and RFR values, as used for the main CAPM estimate of required CoE it seeks to check. Moreover, it is a fundamentally wrong application of the Modigliani-Miller theory as explained by Frontier Economics;⁵⁰

⁴⁵ See the Western Power Distribution Response, the predecessor to NGED, available here: [RIIO-ED2 Draft Determinations | Ofgem](#)

⁴⁶ Frontier Economics, Equity Investability In RIIO-3

⁴⁷ For example, in the RIIO-ET2/GD2 price controls Ofgem took the view that its cross-checks were a valuable supplement to its CAPM work (ELMA 5.637), and that by using range of cross-checks it could have greater confidence in them than, for example, the CMA was able to in the PR19 redetermination (ELMA 5.640). Similarly, in the RIIO-2/GD2 appeals the CMA reached the view that none of the cross-checks were “perfect” (5.718b); it not always possible or desirable to accurately rank and/or weight potential cross-checks as their effectiveness can depend on the situation to which they are applied (5.718b); and the most appropriate role for cross-checks is to use them to assess whether a CAPM-based estimate appears materially mis calibrated versus current market-based data (5.718c).

⁴⁸ RIIO-3 SSMC (Finance Annex), para. 3.82

⁴⁹ Frontier Economics, Equity Investability In RIIO-3

⁵⁰ Frontier Economics, Equity Investability In RIIO-3, section 6.4.5

- The OFTO implied returns cross-check, for which no new data is publicly available.⁵¹ In any case, though, it would be of limited value for a number of reasons, including that it relates to an investment that has a very different risk profile from energy network assets, and relates to the post-construction period only; and
- MARs, which are too subjective (as noted above) to be effectively converted into a CoE allowance at this stage.⁵²

Table 1 presents Frontier's updated results, together with the results from:

- The new Hybrid bond cross-check;
- The updated ARP-DRP cross-check;
- The new Inference Analysis cross-check; and
- A long-term profitability cross-check, previously proposed by Frontier

For comparability, these results are presented alongside the earlier values from the RIIO-ET2/GD2 Draft Determination (where available).

Table 1: CoE Ranges implied by RIIO-ET3 cross-checks

Cross-Check	Status	Ofgem's value from RIIO-2 ⁵³	Updated estimates ⁵⁴
Hybrid Bond cross-check	New	N/A	5.8% to 8.5% (with a point estimate of 6.7%)
ARP-DRP	New	N/A	Towards the top end of Oxera's 5.08% to 6.48% range
Inference Analysis	New	N/A	6.37% to 7.32% (at 55% gearing)
Long-term Profitability	New	N/A	5.9% to 8.4%
Infrastructure fund implied IRRs	RIIO-ET2	4.2%	7.5%
Investment Manager TMR	RIIO-ET2	5.0%	7.2%
CAPM with 0.9 equity beta and investment managers forecast of TMR	RIIO-ET2	4.3%	6.04%

The above table presents a clear pattern. Each of the cross-checks previously considered by Ofgem suggests that the required CoE is now significantly higher than at the time of RIIO-2 Final Determinations. For example, infrastructure fund cross-check evidence now indicates a required CoE which is over 3% higher (CPIH real) than was indicated for RIIO-ET2.

Whilst caution should be exercised in interpreting and using the results of cross-checks, when considered together these do illustrate the significant change in market environment since the RIIO-ET2 price control was set. A notable increase in allowed CoE is hence required for the RIIO-ET3 price control.

In conclusion on cross-checks, National Grid agrees with the view of the CMA in the 2021 Energy Licence Modification Appeals at paragraph 5.718(c), that "*the most appropriate role for cross-checks is to use them to assess whether a CAPM-based estimate appears materially miscalibrated versus current market-based data.*" The cross-check evidence that is considered in RIIO-3 needs to consider a wider set of relevant and informative cross-checks, not just the subset that was previously considered by Ofgem in RIIO-2 and due weight needs to be placed on the debt-based cross-checks (Hybrid bond; Inference model; and the now revised and enhanced ARP-DRP cross-check).

Taken together, based on current evidence, the cross-checks considered above clearly show that a CAPM estimate of CoE, if calculated using Ofgem's proposed approach to the CAPM parameters, would be materially miscalibrated and would be likely to significantly underestimate the required CoE in RIIO-ET3.

⁵¹ Frontier Economics, Equity Investability In RIIO-3, paragraph 223

⁵² At this point in time, we agree with Frontier that there is simply no way of estimating what investors may believe baseline returns will be for either RIIO-3 or PR24, and hence no way of even beginning a MAR inference exercise. See Frontier Economics, Equity Investability In RIIO-3, paragraph 208

⁵³ Ofgem, RIIO-ET2/GD2 Draft Determinations Finance Annex, July 2020, Table 24; see also the Final Determinations, Table 12 and paragraphs 3.112 to 3.121

⁵⁴ Frontier Economics, Equity Investability In RIIO-3; Oxera, RIIO-3 Cost of Equity; KPMG, Inference analysis as a cross-check on allowed returns at ET3

Testing Investability

The challenge before Ofgem is to set a CoE that adequately reflects the required level of equity returns for the specific circumstances which will be experienced by ETOs in the RIIO-ET3 price controls. Indeed, in acknowledging the step-change in infrastructure investment now needed and in light of its new “Net Zero” duty, Ofgem notes that fulfilling this duty will require it to “offer consistency, clear signals and direction so as to provide certainty and assurance to investors that projects are viable, investable and deliverable.”⁵⁵ The importance of meeting the requirement to set a CoE sufficient to attract the required investment has been made clear by various regulatory bodies, including the CMA during the T2/GD2 Appeal decision:

*“It is also our view that while regulators should use robust evidence in the process of estimating the cost of equity, the ultimate requirement should be to ensure that the overall cost of equity allowance is **sufficient to attract investors** and allow companies to finance their activities. ...”*⁵⁶ (emphasis added)

Ensuring that investors are sufficiently attracted to the investment opportunity is referred to as ‘investability’ and will be a key theme throughout RIIO-ET3 and beyond. Fundamentally, Ofgem will need to make appropriate choices – both in the methodologies it chooses and parameter estimations - to ensure that the price control is appropriately calibrated. The price control needs to satisfy Ofgem’s statutory financeability duty (section 3A(2)(b) Electricity Act 1989), the assessment for which Ofgem now recognises may need to expand to include explicit assessment of “investability”.⁵⁷ The need to secure investability for RIIO-T3 is also underscored by Ofgem’s new statutory net zero duty, as failing to secure the necessary investment in the sector would not meet consumers’ interests in the UK meeting its net zero targets (section 3A(1A)(a) Electricity Act 1989).

The question of why an investability test is needed now is addressed within the attached Frontier report. However, given i) the increased demand for capital globally and ii) reduced supply of capital as a consequence of macroeconomic conditions, a simple supply/demand curve illustrates why the cost of capital should be expected to increase.⁵⁸

Ultimately, if the CoE is set at a level that fails to attract the required capital, those would-be investors will suffer no harm since they will invest elsewhere at a return that does attract them. The harm will be suffered by consumers who will face higher energy costs and higher constraint costs as a result of investments in the transmission network being delayed or, in extremis, not built at all. Infrastructure investors have commented publicly that a desire to invest in the UK is inhibited by a lack of attractive opportunities.⁵⁹ Regulators have recognised this concept in the past relating to large infrastructure and noted the asymmetric consequences of underinvestment. In 2007, in relation to Heathrow Airport, the CC noted:

*‘...If the WACC is set too high then the airports’ shareholders will be over-rewarded and customers will pay more than they should. **However, we consider it a necessary cost to airport users of ensuring that there are sufficient incentives for BAA to invest, because if the WACC is set too low, there may be underinvestment from BAA or potentially costly financial distress.***⁶⁰

While we acknowledge this example may be some time ago, it is particularly relevant as it is i) reflective of a time where economic conditions were characterised by higher interest rates and ii) a price control characterised by a recent (and at the time, ongoing) large investment programme, in this case the conclusion of Heathrow’s Terminal Five (which opened the following year).

Of course, Ofgem must take into account consumers’ interests in receiving value for money, as well as adequate remuneration for investors. However, the solutions to each issue are not contrarian to one another, particularly when considering intertemporal fairness. In a report for Thames Water (and submitted to Ofwat) Economic Insight noted the risks to future generations of restricting investment due to focusing too heavily on reducing bill impacts in the short term through an inadequate cost of capital:⁶¹

⁵⁵ RIIO-3 SSMC (Finance Annex), para. 1.5

⁵⁶ RIIO-2 CMA Final Determination, paragraph 5.723

⁵⁷ Ofgem “...plan to develop the notion of ‘investability’, alongside [their] existing financeability assessment, to better understand whether the allowed return on equity is sufficient to retain and attract the equity capital that the sector requires”. RIIO-3 SSMC (Finance Annex), paragraph 1.6

⁵⁸ Frontier Economics, Equity Investability In RIIO-3, figure 5

⁵⁹ Financial Times, ‘UK lacks attractive infrastructure projects, says major investor’, October 13th 2023 (accessed in March 2023). Available at <https://www.ft.com/content/56f0894e-f3bf-40e6-96e4-9063be7b5501>

⁶⁰ Competition Commission, ‘A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd)’, 28th September 2007, paragraph 4.106.

⁶¹ Regulatory Options for Complex Projects, Economic Insight, February 2022. Available [here](#).

*'Investors frequently mentioned that Ofwat's **short-term focus** on bill reductions **could hinder long-term resilience and climate change objectives** – as to achieve the latter significant investment is required. One investor noted that "low level investment now destroys the benefits of future generations"'(emphasis added)*

The CMA has also recognised this challenge and the criticality of attracting investment during the PR19 appeals:

*'the current context of a material reduction in the cost of equity at the same time as a growth in investment points to a need to **proactively address the risks associated with setting the cost of capital too low**'.*⁶²

We discuss the investability challenge, including how to appropriately test for investability, in our response to FQ14 and do not propose to repeat that content here.

However, it is not possible to delineate completely between the CoE and Investability given the required solutions lie, broadly speaking, in an appropriate allowed return.⁶³ It is preferable that any disparity is remedied within parameter estimates, though this may not be possible in isolation.

We address this within the point estimate section later in the response and refer to the attached Frontier report on Equity investability in RII0-3 for a more detailed discussion on how the CoE should be adjusted for investability.

Parameter Estimation – (i) Total Market Return (TMR)

The Total Market Return (TMR) represents the return an investor can expect on the equity market portfolio. Typically, as investors' expected market return is not directly observable, regulators have estimated the TMR using averages of long-run historical returns data. This is because this method, when appropriately implemented, has been seen as the most objective method of estimation and so will generally produce the most reliable estimation of TMR. National Grid supports the use of an ex-post TMR estimate, with limited use of historic ex-ante estimates. We believe this estimate must be cross-checked against market evidence using a 'glider' to inform the scale of TMR movement required, for the given level of interest rate movement. While it is likely this latter evidence supports *larger* upwards movement in TMR than we use in our estimate, we believe this is best used as a cross-check to inform the TMR relative to the market, rather than a primary estimate.

Stable vs Fixed TMR

It is also necessary, when calculating ex-post returns, to ensure that the distinction between *fixed* and *stable* is suitably recognised. This involves considering (i) first-principles corporate finance theory and (ii) the market context in which the TMR is being set.

Historically, academic debate has focused on which of two parameters is *more* stable; the TMR, as defined above, or the equity risk premium (ERP), which represents the excess return for risk borne by equity holders over that of a riskless asset. If the TMR was held constant, or 'fixed', then the ERP would fall with each parallel increase in RFR, indicating that investors were suddenly content with a correspondingly lower risk premium. This would not be a credible position and would represent an inefficient market dynamic as investors would simply flow capital to debt markets unless the return on equity also increased.

It is equally inappropriate to describe the ERP as 'fixed'. Variations in ERP at different points in time derive from a number of factors including the market risk appetite at any one particular time⁶⁴ and the fact that part of the risk borne by equity holders relates to uncertainty of return (relative to contractual interest payments).

The market reality instead reflects a world where the TMR (like ERP) does vary with interest rates but in neither case on a one-for-one basis. We recognise that past analysis has indicated that TMR appears to be more stable than ERP⁶⁵ but this does not mean regulators need to restrict themselves to either a "fixed TMR" or "fixed ERP" approach. Instead, these two positions should be seen as two ends of a *spectrum*, and in applying the concept of a "stable TMR", the appropriate **degree of stability** – that is, where the estimate sits on the spectrum between these two endpoints – should be considered. Amongst other things, when estimating TMR this will involve reflecting:

- i. the interest rate environment in which the price control is being calibrated.

⁶² PR19 CMA FDs, paragraph 9.1281

⁶³ Though we note this is part of a wider consideration which may include, for example, equity issuance costs

⁶⁴ For example, the market occasionally sees 'flight to safety' periods, where one could expect ERP to rise relatively significantly, but temporarily.

⁶⁵ See, for example, (i) The Cost of Equity Capital for Regulated Companies, Stephen Wright & Andrew Smithers, February 2014; (ii) A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K; Stephen Wright, Robin Mason and David Miles (on behalf of Smithers & Co Ltd), February 2003

- ii. consideration of the wider context of the price control, reflecting key differences from prior precedents such as step-changes in investment scale and the need to attract investment.

The UKRN guidance also recognises that TMR will vary with the RFR.⁶⁶ The evidence from previous regulatory determinations indeed indicates that this is consistent with past regulatory decisions, notwithstanding the ‘stable’ TMR view that has been adopted in the past by regulators, as the assumed TMR has declined as the RFR has fallen. It would therefore be asymmetric to not assume the reverse.

The clear evidence indicating this relationship between TMR and RFR in past regulatory decisions has been detailed by Frontier and Oxera in the appended reports.⁶⁷ In summary, during the period of declining and ‘lower for longer’ interest rates (approx. 2008-2022) the yield on government bonds fell to all-time lows and was materially negative (in real terms) around the time the RIIO-2 price control was being set. Regulators, including the CMA, reacted by adopting methodology choices which sought to apply downwards pressure on the TMR estimate. Whether implicitly or explicitly, this was influenced by or even justified by the *expected* nature of the TMR in the new market environment; for example, in 2014, the CMA adjusted its TMR estimate, which was primarily based on this long-run historical ex-post average, noting (emphasis added):

*‘A forward-looking expectation of a return on the market of 7 per cent does not appear credible to us, given economic conditions observed since the credit crunch in 2008 and lowered expectations of returns.’*⁶⁸

The evidence⁶⁹ shows that between 2004 and 2020, the RFR (as measured by the yield on ILGs) fell from approximately 2% to approximately -2%, or in other words fell approximately 4%. In parallel, the TMR assumed by regulators fell on a like-for-like basis by approximately 1.75% (to the latest position of c.5.5% real relative to RPI). Whilst the pattern may not be perfectly linear, this indicates that even whilst maintaining a stable TMR view (as opposed to stable ERP assumption), the TMR will vary.

Frontier Economics has carried out a more detailed assessment of the relationship between nominal gilt yields as an indicator of the risk-free rate and TMR.⁷⁰ This explores the evidence for a “TMR Glider”, in which TMR varies as the RFR (represented by gilt yields⁷¹) changes, but by less than the change in gilt yields.

- This report first considers the academic evidence for a relationship between the TMR and the RFR. It finds that there is evidence of a relationship between TMR and interest rates of the kind used by regulators to estimate RFR, but this cannot be used directly in a price control setting as the findings relate to different markets and time periods which may not be relevant for setting the cost of capital for RIIO-3.
- Frontier’s report then empirically evaluates the relationship between the forward-looking required equity return (as estimated using a DDM model) and the nominal gilt yield which prevailed at the time, broadly following an approach previously developed for Ofwat.⁷²
- The results of this analysis⁷³ show that **we can expect a 0.4%-0.5% change in TMR** when interest rates change by 1%. Frontier’s preferred approach⁷⁴ is at the lower end of the range and implies a c.0.42% change in TMR as gilt yields (or RFR) change by 1%.
- Frontier then cross-check this TMR Glider against past TMR decisions by regulators since 2012, shown in figure 6 of the report.
- On inspection, figure 6 of the report suggests that for the most part the glider predicts changes in past TMR decisions well, though some exceptions are noted and explained.⁷⁵
- The report concludes that if Ofgem “rolled forward” its RIIO-2 TMR value for RIIO-3, this would lead to a TMR which is much too low, given the current RFR.
- As the TMR Glider appears able to predict changes in past regulatory decisions with reasonable accuracy – albeit with a degree of “stickiness” from one precedent to the next - this provides evidence that: a) past decisions appear to follow the trend in RFR, b) regulatory decisions have reflected market-implied TMR more than regulators have formally articulated.

⁶⁶ UKRN Guidance, pp. 16-17, and p.19: “This approach does not imply that regulators should simply pick the same fixed value for the TMR in each decision for all time, but that the TMR would be relatively less variable than the underlying RFR.”

⁶⁷ Frontier Economics, The Relationship Between Total Market Return and Gilt Yields, and Oxera, RIIO-3 Cost of Equity

⁶⁸ Northern Ireland Electricity Limited price determination: A reference under Article 15 of the Electricity (Northern Ireland) Order 1992, the Competition Commission, March 2014, para. 13.146

⁶⁹ Oxera, RIIO-3 Cost of Equity, Figure 2.6

⁷⁰ Frontier Economics, The Relationship Between Total Market Return and Gilt Yields

⁷¹ Application of this methodology does not equate to acknowledgement that unadjusted gilt yields represent an appropriate RFR, which is examined below

⁷² Refining the balance of incentives for PR19, PwC. Accessible [here](#)

⁷³ Frontier Economics, The Relationship Between Total Market Return and Gilt Yields, Table 1

⁷⁴ *Ibid*

⁷⁵ Frontier Economics, The Relationship Between Total Market Return and Gilt Yields, p20

- Based on the TMR Glider, Frontier conclude it would indicate a TMR of approximately 7.55% to 7.86% (CPIH-Real) is appropriate.
- However, Frontier do not suggest that the TMR Glider explored in their paper should be seen as an alternative way to set future TMR decisions that could replace the long-run historic approach that has been well established. Rather, it should be seen as a cross check on future regulatory TMR decisions, which takes account of market conditions and so helps inform whether a proposed price control allowed equity return package is likely to meet required investability hurdles.
- The Glider can hence serve as a useful guideline, providing regulators with a market perspective that will help make the right judgement on whether a proposed decision adequately reflects the market conditions.

Put simply, the evidence supports that the TMR is not fixed, but is more stable than the ERP. It concludes that for every 100-bps movement in RFR, the TMR is expected to move by between 40 and 50-bps (and hence the TMR moves by less than the ERP).

In the SSMC, Ofgem appear, in our view, to have correctly concluded that TMR is not fixed but have interpreted the concept of 'stable' TMR in an overly rigid way that is, in practice, much closer to a "fixed" view of TMR. This interpretation is simply not consistent with the evidence and the pattern of past decisions. A departure from this pattern risks sending the wrong message to investors:

'A TMR decision of roughly 6.5% CPIH-real, based on a RIIO-2 roll-forward methodology, would be a significant departure from both market evidence and established regulatory precedent. It risks sending a message to investors that "stable but not fixed" applies only when interest rates are falling, but not when they are rising, and we believe would undermine investor confidence'.⁷⁶

We believe the TMR 'Glider' should not be used as a primary method of estimation but should be used to cross-check whether the TMR is appropriately attuned to the market environment in which the price control is set.⁷⁷

Through the Cycle: TMR Specifics

Whilst the SSMC appears to recognise that under the approach it proposes the resulting TMR value will be lower than the evidence suggests is required during RIIO-ET3⁷⁸, Ofgem then seek to justify this through the concept of a 'through the-cycle' approach, which may allow a value that is potentially too low to be set in RIIO-ET3 on the basis that '*when setting [our] allowed return on equity we are estimating a **long-term cost of equity***'.

We disagree that adopting a 'stable' TMR equates to estimating a value for the 'long-term', and do not believe that it is contradictory to adopt a stable TMR approach whilst also considering realistic investor expectations for the upcoming price control in the context of market conditions at the time.

As already noted the UKRN guidance is supportive of a stable but not fixed TMR, and in light of the evidence above, appropriately calibrating the TMR for RIIO-3 may involve approaches such as limiting the weight applied to ex-ante estimates and revisiting methodological choices which were used at previous price controls to apply downwards pressure on the assumed TMR.

We now address the appropriate methodology for setting the TMR, including where revisions may be needed relative to RIIO-ET2.

Methodology for setting TMR

Ofgem proposes to consider ex-post historic and ex-ante historic estimates of TMR, but there remain key methodological considerations within both of Ofgem's proposed approaches. Further, it would not be appropriate to assume that ex-ante historic methods are as valuable and reliable as ex-post historic estimates, and an appropriate weighting must be applied to ensure the TMR accurately reflects investors' CoE requirements during RIIO-ET3.

Historical ex-post

Maintaining the RIIO-ET2 approach would be technically consistent with UKRN guidance, which is very broad and instructs regulators to consider one (or both) of an arithmetic average or geometric average-plus-adjustment approach applied to very long run data. However, our view remains that while historical technical

⁷⁶ *Ibid*, paragraph 4.2

⁷⁷ *Ibid*, paragraph 4.1: "While we would not propose that the Glider should be used mechanistically to set TMR, this brings a key insight.

⁷⁸ RIIO-3 SSMC (Finance Annex), paragraph 3.59

debate around ex-post TMR is extensive, important methodological questions remain, particularly in the context of TMR expectations in the current interest rate environment.

Inflation: We support the use of the CPIH backcast which provides a more reliable and robust estimate of CPIH inflation data from 1950 to 1988 than was available at prior price controls and addresses most (though not all) of the errors in the previous release. However, we do not agree that backcast *CPI* data, which the SSMC also refers to alongside the CPIH backcast⁷⁹, is appropriate, as the use of a CPI data series for a CPIH-indexed price control when a CPIH series exists is neither logical nor justified (and we note Ofgem do not attempt to justify it).

Averaging and Holding Periods: Ofgem notes within the SSMC that it proposes to consider a 'range of appropriate timeframes, averaging methodologies and potential adjustments'.⁸⁰ We understand 'potential adjustments' broadly relates to the ex-ante methods, rather than ex-post. It is imperative that Ofgem's approach is clear, transparent, and consistent with regulatory principles and this should be more clearly explained at SSMD and beyond. We consider a high bar should apply to any adjustments to ex-post data or methodologies, which should be supported by data or market expectations.

This high bar would, for example, apply to consideration of downwards adjustments designed to remedy apparent serial correlation. On this point we agree with Oxera that automatic application of such adjustments is incorrect, and instead highlight that regulators should apply statistical adjustments only where it is empirically proven as necessary. It is not correct to assume that if using an arithmetic average, serial correlation is automatically present.

In the absence of serial correlation, which Oxera demonstrate⁸¹, we agree that a 1-year non-overlapping average is the most robust and unbiased estimator of the ex-post TMR. We agree that whilst additional estimators may be useful, they do not increase the reliance or robustness of the estimator any more than the simple average. This methodological approach would produce an ex-post TMR of 7.0%.

We consider that historical ex-post is the most appropriate method for estimating the TMR as it relies on limited subjectivity and is robustly based in data. Consequently, most weight, if not full reliance, should be placed on TMR estimates derived using this method.

Historical ex-ante

Historical ex-ante approaches seek to identify which elements of the observed return were genuinely expected by investors, and which were instead a matter of good or bad luck. This second element is often referred to as 'surprise' and is important because it might be considered non-repeatable. Ex-ante methods therefore seek to temper returns implied by historical data to better reflect the genuine forward-looking expectations of investors at the time.

In our view, these ex-ante methods are structurally flawed given they necessitate arbitrary, subjective reductions to ex-post estimates and involve significant use of assumptions. Indeed, because of these weaknesses, it was historically given little weight by Ofgem. In today's market environment, where interest rates are materially higher than at RIIO-ET2, there is no case for giving ex-ante approaches any more weight than Ofgem did previously, and we would therefore urge Ofgem to give limited weight to estimates based on historic ex-ante approach to ensure the robustness of the estimate is maintained.

Whilst we acknowledge the UKRN guidance now suggests weight be placed on historical ex-ante, we reaffirm that in addition to these significant flaws a consideration of the interest rate environment should now point to higher TMR (and returns) in order to maintain regulatory consistency. Applying significant weight to ex-ante methods is likely to move returns, irrationally, further down which is likely to be particularly damaging in RIIO-ET3 where attracting investment is a critical consideration.

Notwithstanding our view that limited weight should be applied to ex ante methods, if these were to be considered it is essential that Ofgem uses properly calibrated, tested approaches. The two methods referred to by Ofgem⁸², whilst still beset by subjectivity, are considered by Oxera⁸³. These are:

- **Decomposition approach:** this approach seeks to decompose elements of the DMS data which are expected to continue, and those which aren't.

⁷⁹ RIIO-3 SSMC (Finance Annex), paragraph 3.49

⁸⁰ *Ibid*, paragraph 3.52

⁸¹ Oxera, RIIO-3 Cost of Equity, s.2.2.1

⁸² RIIO-3 SSMC (Finance Annex), paragraph 3.57

⁸³ Oxera, RIIO-3 Cost of Equity, s.2.2.3

- **Fama-French approach:** this approach seeks to estimate dividend yield and dividend growth to define expected return.

We do not consider any other approaches are credible.

We note that Ofgem refer to 'potential adjustments' within the SSMC⁸⁴ and, within working groups, clarified this predominately applies to ex-ante methods. There are two categories of 'adjustments' within the two established methods

- i. Non-data assumptions on which elements are repeatable: Decomposition Method – The CMA has noted that the expansion of Price / Dividend ratio and exchange rate impacts may be deemed as probably not repeatable. We do not challenge this assertion but do note that the subjectivity of ex-ante methods cannot ever guarantee this fact. We refer to the submitted Oxera report for the ENA⁸⁵, noting '*...[decomposing] is a subjective exercise that requires one to choose which elements to include in the decomposition, and which should be classified as 'unlikely to be repeatable. Materially, there is no guarantee that a variable that exhibits 'unrepeatable' behaviour when included in the decomposition with another variable would exhibit the same behaviour in conjunction with a third and different variable*- ii. Data assumptions (both methods):
 - a. we reject inclusion of downwards serial correlation adjustments and agree with Oxera⁸⁶ that adjustments for data error on an expected basis are not logical. The rational investor would not expect data errors to occur and would not hence apply a downwards adjustment to his or her expectations. Data errors require correction ex-post⁸⁷, not ex-ante.
 - b. We note concern that the Barclays data appears to be flawed and not credible, and peer reviewed, robust data sources would be more acceptable.⁸⁸

Subject to appropriate implementation around assumptions, these are the most acceptable ex-ante methods though we reiterate that they are fundamentally inferior to ex-post approaches. Consequently, we urge a significant degree of caution. The observed flaws in all ex-ante methods are *structural* rather than *methodological*, given all methods rely on at least a degree of assumption and subjectivity. The CMA has, in the past, acknowledged these flaws:

*"We consider that the most robust approach to estimating TMR is to use historical ex-post returns (from 1900 to the present day) as a proxy for investors' forward-looking expectations **as this method is the least reliant on assumptions and forecasts of those available to us.**"⁸⁹*

In our view, the appropriate remedy to these structural flaws is to place limited weight on ex-ante estimates. It is not appropriate, in our view, for ex-post (which is based on observed market data) and ex-ante (which is based on assumptions) to be given equal weight, either explicitly or indirectly as a consequence of calculating a point estimate or range.

Forward looking approaches

We do not consider that formal forward-looking models are any more credible than historical ex-ante methods, carrying many of the same flaws relating to subjectivity. Ofgem did, though, consider market expectations in RIIO-2 (including the views of certain investor managers) at a time when they indicated lower values for TMR than the ex-post historic method, and so in Ofgem's view supported certain decisions in relation to the detailed methodologies which had lowered the ex-post TMR estimates in RIIO-2.

Updated information on these investment managers' views of TMR is presented in Frontier's new report for the ENA and suggests that investor expectations have risen significantly since RIIO-2 and would now support a TMR value that is broadly consistent with Oxera's estimate based on the ex-post historic method.⁹⁰

⁸⁴ RIIO-3 SSMC (Finance Annex) paragraphs 3.52, 3.58

⁸⁵ Oxera, RIIO-3 Cost of Equity

⁸⁶ Oxera, RIIO-3 Cost of Equity, s.2.2.1

⁸⁷ Though we note this is only true if an error is proven to exist, in this case if returns were shown to be deterministic. Oxera finds no evidence of any serial correlation within the DMS data and hence no ex-post adjustment is necessary in this case

⁸⁸ Oxera, RIIO-3 Cost of Equity, referring Gregory, A. (2023), 'The Expected Cost of Equity in the UK Revisited', 25 July, pp. 4–5

⁸⁹ Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, CMA, September 2020, paragraph. 9.216

⁹⁰ Frontier Economics, Equity Investability In RIIO-3, section 6.4.3

This gives further support to the evidence presented above that TMR estimates for RIIO-ET3 should be increased relative to RIIO-ET2 to reflect the new higher interest rate environment, whether through suitable adjustments to the TMR estimation methodology or through the choice of TMR range and point estimate.

Weighting of the evidence and conclusion on TMR

The UKRN guidance does not dictate the weighting which should be applied to the two different methods that it recommends should be used for estimating the TMR. Instead, the guidance suggests that regulators use their judgment and consider the evidence available to regulators at the time. In this regard, for RIIO-3 it is particularly important to consider the new evidence for the relationship between TMR and RFR that has been developed by Frontier Economics,⁹¹ as well as the observed variations over time in the TMR values assumed by Ofgem and other regulators when setting price controls as gilt yields (or RFR values⁹²) have changed

As explained above, it is not the case that the historical ex-post and historical ex-ante methods are equally robust. Instead:

- most weight should be placed on the TMR estimate found using the historic ex-post method, in line with Oxera
- limited weight, if any, should be placed on the historical ex-ante approaches
- the fundamental shift in macroeconomic conditions and the regulatory precedent for moving TMR in line with interest rates justifies a TMR in the higher end of Oxera's range
- the TMR Glider evidence indicates a value even higher than the upper end of Oxera's range, though we reiterate this evidence is designed as a cross-check rather than as a primary estimation method

In line with Frontier Economics report,⁹³ our conclusion is that a value in the top half of Oxera's range should be used for the TMR, and this approach remains in line with UKRN guidance.⁹⁴

Parameter Estimation – (ii) Risk-Free Rate (RFR)

The RFR represents the return an investor can expect from holding an asset with zero risk. In UK Regulation, and more widely, the yield on government bonds is often used as a proxy because government assets carry no credit or currency risk. More specifically, index-linked bonds are often used in UK Regulation as these more directly lead to a RFR estimate in real rather than nominal terms. The use of government bonds is not the only recognised risk-free proxy, and others, such as very high-quality corporate bonds, may also be used.

We agree that ILGs are an acceptable starting point but sole reliance is not appropriate, and we support the application of a Convenience Premium to reflect the 'specialness' of government bonds in order to estimate the true risk-free rate.

Ofgem has proposed to maintain the RIIO-ET2 approach which is to maintain reliance on ILGs only. However, sole reliance on ILGs without any form of adjustment to take account of unique features of government debt will not in practice represent a true RFR available to the majority of the investment community.

We also note that the choice of the lowest possible estimator for RFR implies inconsistency with Ofgem's wider principles of 'aiming centrally' on parameters to avoid the need (in Ofgem's view) for an aiming up adjustment at a later stage. It is true that the CMA recognised use of unadjusted ILG yields as 'not wrong' in the RIIO-ET2 appeal, though this was in contrast to the PR19 appeal, where the CMA's best estimate of RFR included an adjustment. In our view, it remains appropriate (and in line with recent regulatory precedent) to apply a so called 'convenience premium' adjustment to reflect the "specialness" of government-issued debt, both for accuracy in methodology and for maintaining a consistent approach in terms of symmetrical estimates.

Convenience premium

Application of a 'convenience premium' (CP) – which is essentially an adjustment to reflect the fact that ILGs have specific features which lower their yield, known as 'specialness' – has for some time been debated within UK regulation, including in depth at RIIO-ET2. The recent UKRN guidance allows for the recognition

⁹¹ Frontier Economics, The Relationship Between Total Market Return and Gilt Yields

⁹² Though we refer to discussion on application of appropriate Convenience Premium later in the response

⁹³ Frontier Economics, Cost of equity for NGET at RIIO-3, March 2024, Table 2.

⁹⁴ For a more detailed discussion, we refer to the following reports: Frontier Economics, The Relationship Between Total Market Return and Gilt Yields; Oxera, RIIO-3 Cost of Equity

of a convenience premium and says regulators should set out the assessment of evidence before making decisions.⁹⁵ At RIIO-ET2, Ofgem elected to not apply a CP and in the SSMC, Ofgem proposes to retain this approach at RIIO-ET3.

Whilst we recognise this is one approach which is consistent with the UKRN guidance, this approach is not mandated by the guidance, and we do not agree that Ofgem should maintain the approach because the CMA noted previously it was 'not wrong'. Rolling forward a methodology which has in the past been determined to be 'not wrong' in the circumstances of a previous price control is not the same as determining an appropriate, central, symmetrical estimate which considers all available contemporary evidence, as required by the UKRN guidance. Indeed, we note that Ofgem themselves do not believe that the CMA finding a position 'not wrong' is equivalent to an endorsement.⁹⁶

We believe applying no adjustment to ILGs is incorrect and does not reflect the true RFR available to market participants. There are a number of reasons why gilts demonstrate special features and when used to estimate the RFR require consideration of a convenience premium. Academically, this has been well-discussed and includes:

- Excess demand for government bonds, driven by, for example, use as collateral in secured transactions or use by financial institutions to efficiently fulfil regulatory requirements and;
- High liquidity

The combination of these factors results in yields *below* the RFR that would be expected for a risk-free investment that lacked these special attributes of government bonds. In other words, it is not possible for market participants (other than the government) to borrow at this rate and government bonds are idiosyncratic.

In the PR24 Final Methodology, Ofwat accepted academic theory that nominal gilts at some tenors exhibit a convenience premium, converging on the position of other regulators who already apply an adjustment to government debt. Ofwat, though, asserted that there was no academic proof that the same applied to ILGs (which Ofwat also use as their reference rate for RFR). Ofwat noted:

*"...our analysis suggests there is no reason why estimates of the convenience yield derived using nominal bonds should apply to index-linked bonds"*⁹⁷

In response, KPMG, in their report for a group of water companies,⁹⁸ subsequently noted that 'a *qualitative analysis of the determinants of the convenience yield referenced in academic literature implies that the majority apply similarly to NGs [Nominal Gilts] /ILGs (and may apply more strongly to ILGs owing to their inflation protection) but NGs may be more liquid than ILGs. This suggests that the convenience yield for NGs may be a good benchmark for ILGs.*'

The report finds that there are five factors which are recognised in academic literature as applicable to nominal gilts, and that these apply equally to ILGs (or in some cases, even more so). These factors are liquidity, money like-roles, collateral, regulatory requirements and safety. We agree that it is inaccurate to suggest a CP applies to nominal government bonds but not ILGs. Ofwat's recognition of CP for Nominal Gilts therefore should translate onto RFR estimates that are based on ILG yields.

Oxera have considered the reasons and evidence for a convenience premium in their new report for the ENA.⁹⁹ We consider that application of a convenience premium is well justified in academic literature and believe an adjustment is appropriate. There are also a high number of regulatory precedents subsequent to the RIIO-ET2 Final Determination, both domestically and more widely, where a convenience premium has been applied.¹⁰⁰

Quantification: Academic Sources

⁹⁵ UKRN Guidance, p. 14

⁹⁶ Ofgem stated that: 'Regarding the SONI appeal, the CMA did not produce its own estimate of asset beta, but found instead that the UR's assumption of 0.6 was not wrong: we therefore believe that 0.6 may not reflect CMA's view, particularly for the ESO': RIIO-2 Draft Determinations – Electricity System Operator, Ofgem, July 2020, para. 5.26

⁹⁷ Ofwat, PR24 Final Methodology- Appendix 11, Allowed Return on Capital, December 2020, para 3.33 (p. 16)

⁹⁸ KPMG, Estimating the Cost of Equity for PR24, September 2023, para. 6.4

⁹⁹ Oxera, RIIO-3 Cost of Equity, section 2.1.1

¹⁰⁰ *Ibid*, p21

It is possible to use academically derived estimates for CP, though these tend to only reflect shorter time-horizons. We refer to the attached Oxera report for detailed analysis, but this measure tends to suggest an appropriate CP is that per the Diamond and Van Tassel paper in 2020 of approximately 38bps.¹⁰¹

Quantification: AAA bond yields

Historically, regulators¹⁰² and the CMA¹⁰³ have referred to the yield on very high-quality corporate debt to estimate CP. We refer, as evidence, to Oxera's report on the use of the AAA bonds and the calculation methodology. Oxera find that the evidence from AAA bonds over the past 5 years suggest a CP of 11bps¹⁰⁴, although this will need updating nearer to the RIIO-3 Final Determinations.

The estimation of RPI-CPIH wedge for RFR and other Inflation issues

ILGs are RPI-linked and so a CPIH-based price control will require an adjustment to convert yields to appropriate CPIH-real terms. At RIIO-ET2, Ofgem applied an RPI-CPI wedge based on OBR forecasts, updated annually (the 'year 5' approach). For RIIO-ED2 Ofgem considered whether use of a 20-year geometric average (based on OBR's forecast for CPI and RPI for each of the first 5 years and then the OBRs long-term assumption in subsequent years, with RPI and CPIH assumed to be equal from 2030) was appropriate but elected not to implement this approach and instead retained the year 5 approach.

Paragraph 3.40 in the SSMC Finance Annex now suggests that the alternative approach considered by Ofgem during RIIO-ED2 may be the preferred approach for RIIO-ET3. We agree that this approach appears reasonable at this stage but note that additional cross-checks may increase the robustness of this estimate and avoid reliance on assumptions.

Consequently, we agree with Oxera that an estimate of RPI-CPI that is based on inflation swaps provides a useful alternative that should also be considered, given its consistency with UKRN guidance, which states that **using inflation swaps** or long-run inflation forecasts or assumptions from official sources such as the OBR to estimate the long-run RPI or the long-run RPI-CPI(H) wedge are '**recognised as acceptable approaches by the regulators**' (*emphasis added*).¹⁰⁵

Oxera estimate that the inflation swap approach would currently give a value for 47bps for the RPI-CPI wedge, whereas Ofgem's proposed '20-year inflation forecast' approach (based on OBR forecasts) currently gives a value of 32bps¹⁰⁶.

Importantly, both of the above methods provide estimates of the RPI-CPI wedge, but for the purposes of a price control that is set in CPIH-real terms it is the wedge between RPI and CPIH that is needed when estimating the RFR from ILG yields. In this context, the distinction between CPI and CPIH has in the past been disregarded by Ofgem, on the basis that that these have typically been 'very close on average'. However, there a reasonable degree of volatility in this measure, including directionally, and we note that Oxera's report states that '*historical data from 2006, as well as over the last ten, five and three years consistently indicates that, on average, CPI was higher than CPIH*'¹⁰⁷. If ignored, this would mean that the RPI-CPIH wedge is understated, and hence so would be the RFR. Oxera estimate the CPI-CPIH wedge to be 33bps, based on the 5-year average.¹⁰⁸

Finally, we note that break-even inflation measure is flawed and there are also reasons to believe that currently the break-even inflation curve may not be pricing in inflation expectations accurately. We refer to the Frontier Economics report submitted by the ENA titled *Initial Consideration of Break-even Inflation for Price Control Purposes*¹⁰⁹ for further discussion.

Parameter Estimation - (iii) Beta

We present evidence to demonstrate that the risks faced by NGET are expected to be higher in RIIO-ET3 than in RIIO-ET2, even after considering the impact of any mitigations within the regulatory framework.

¹⁰¹ Oxera, RIIO-3 Cost of Equity, p24

¹⁰² For example, the CAA applied a 32-basis point adjustment to the Risk-Free Rate in the H7 final proposals calculated as the midpoint between ILG Yields and AAA yields; UK CAA, H7 Final Proposals- Section 3: Financial issues and implementation, para. 9.248

¹⁰³ The CMA included AAA gilts at PR19, stating: 'On balance, the CMA has accepted arguments and evidence that the ILG rate available to the government is unlikely to be a perfect proxy for the RFR, and that the 'true' rate of RFR in the market is likely to be above this level'. PR19 CMA FDs, 9.158

¹⁰⁴ Oxera, RIIO-3 Cost of Equity, Table 2.2

¹⁰⁵ UKRN Guidance, p. 15

¹⁰⁶ Oxera, RIIO-3 Cost of Equity, table 2.4

¹⁰⁷ Oxera, RIIO-3 Cost of Equity, page 34

¹⁰⁸ Oxera, RIIO-3 Cost of Equity, Table 2.5

¹⁰⁹ Frontier Economics, Initial Consideration of Break-even Inflation for Price Control Purposes, March 2024

These risks have not yet impacted company performance, and their combined future scale is as yet unlikely to be fully appreciated, and so their impact will not yet be fully reflected in observed beta values.

We therefore suggest Ofgem considers beta in two stages; firstly, an estimation of beta based on empirical data, which would apply in the absence of any increased risk. Secondly, an upwards adjustment to reflect increasing risks on a forward-looking basis. Our review of risk also demonstrates that risks are likely to be asymmetric, which should also be accounted for in setting the regulatory framework for RIIO-ET3.

NGET is at the core of the energy transition and needs to innovate in order to deliver efficiently the infrastructure and services that consumers, network users and the government's decarbonisation targets require. The ASTI programme, in particular the powerful incentives and penalties for late delivery of ASTI projects, as well as NGET's other future activities and obligations, will require NGET to take on new risks, and these risks will become particularly significant as they are cumulative and reinforce each other.¹¹⁰

Beta values that are calculated from past data are unable to reflect the increase in risk (and thus corresponding beta and required CoE) that the change in National Grid's business activities over the next price control period entails. Use of beta values that are estimated from past market data for the comparator companies used previously in RIIO-2 would only reflect the required CoE for a network that looked the same, in terms of systematic risk exposures, as in the past, i.e. could only be appropriate for energy networks on an "as-is" basis, where the network businesses' activities (and levels of activities) under RIIO-3 were expected to be very similar to those during RIIO-2 and earlier.¹¹¹ This is not a set of circumstances we are now faced with.

We therefore agree with the SSMC that *"there may be evidence to indicate that energy networks face higher or lower levels of systematic risk on a forward-looking basis in the round after accounting for relevant price control mechanisms, which may not be accurately reflected in beta samples which are backwards looking."*¹¹²

In light of changes to the nature and scale of NGET's investment programme, allied to a range of other factors including the increasingly tight supplier markets that are needed to support the delivery of the programme, there are strong reasons to believe that electricity transmission networks in RIIO-ET3 will be exposed to significantly higher levels of systematic risk than in previous price controls.

As a result, beta values that have been used previously, or might now be estimated from past market price data, will be too low for the next price control, and the increase in risk faced by NGET for the next price control will require an increase in Ofgem's estimate of beta and in the allowed CoE. In these circumstances, the estimation of an appropriate beta for electricity transmission in RIIO-ET3 is likely to involve 2 steps:

- The first is to estimate an "as-is" or business-as-usual (BAU) beta if the nature of a network's activities hadn't changed and it was exposed to the same level of systematic risk,
- The second is then to estimate how much higher the beta estimate should be for electricity transmission in RIIO-3 in order to take account of the changes in risk that will be faced by networks in this sector.

We consider each of the two steps in turn below.

Estimating the BAU Beta

The approach which Ofgem proposes in the SSMC for estimating beta values for use when setting the allowed CoE for RIIO-3 is described in paragraphs 3.73 to 3.75 of the SSMC Finance Annex and we consider Ofgem's proposed approach further below.

¹¹⁰ PwC, Identifying and quantifying risks for RIIO-T3, 2024. Hereafter referred to as PwC, Identifying and quantifying risks for RIIO-T3

¹¹¹ Short term beta values could not in any case be expected to give an indication of the impact of emerging changes in risk as such impacts are likely to be masked by the usual random fluctuations that are seen in short-term beta values

¹¹² RIIO-3 SSMC (Finance Annex) paragraphs 3.75

NGET agrees with the elements of the proposed approach at paragraph 3.73 of the SSMC Finance Annex, i.e. use of OLS regressions of relevant comparators, and of the conventional de-gearing/regearing approach, which are widely understood, reproducible, relatively simple and well-established. In general, therefore, these elements are appropriate for use by regulators when setting regulated companies' price controls, and they also have the benefit of being consistent with past regulatory practice as well as the UKRN guidance.

Frequency of data

We do not agree with the suggestion at paragraph 3.74 of the SSMC Finance Annex to consider beta values that are calculated using a range of different frequencies of data sampling. This is inconsistent with the UKRN guidance, without Ofgem having provided a justification for departing from the UKRN approach. The UKRN guidance notes that beta should be calculated using daily data samples for the comparator companies which Ofgem proposes to use: *"The use of daily data should be reasonable for the types of stocks generally considered (as they tend to be highly traded liquid stocks) rather than weekly or monthly data in regressions, as these significantly increase the analytical work involved but without necessarily producing more reliable results."*¹¹³ The UKRN guidance also gives further reasons why daily beta values should be used: *"weekly or monthly estimates are affected by the 'reference day bias' in which betas of the same frequency and estimation window can be different because of the day picked."*¹¹⁴ Weekly and monthly beta values are also generally much more volatile than daily values, consistent with their lower statistical reliability, which would make interpretation of these beta values much more difficult, subjective and problematic, and also suggests that they may be much less reliable. Furthermore, Ofgem appears to have used only daily beta values in RIIO-ET2,¹¹⁵ and whilst Ofgem has indicated that for RIIO-ET3 the methodologies that are adopted might change from those used in RIIO-ET2 if supported by evidence (particularly new evidence), the SSMC does not suggest that there is any such new evidence that would justify a change from use of beta values calculated using daily data only. For the reasons given in the UKRN guidance therefore, and as the previously identified problems with use of weekly or monthly data remain, the beta values that are used should again be calculated using daily data.

Sample length

Paragraph 3.74 of the SSMC Finance Annex also considers the timeframes that should be used for estimating beta. We agree with the SSMC Finance Annex at paragraph 3.68 that use of longer-term data involves use of more datapoints and so improves statistical reliability, and that - in the context where network companies activities and systematic risk had not fundamentally changed for a long period prior to this point - longer-term data may also give more comprehensive and reliable insight into a firm's "BAU" beta, i.e. the beta that would apply moving forward if the business activities and risk profile remain unchanged. Beta values calculated from longer-run samples of data are also more stable than those which use short samples of data, which in contrast tend to be very volatile as they can be unduly influenced by random fluctuations caused by particular drivers of market movements (both systematic and idiosyncratic) which happen to have materialised during the relevant short timeframe.

Shorter term data will only be more representative of the forward-looking exposure to systematic risks of a company if (i) this shorter-term data is not unduly influenced by other short-term market influences,¹¹⁶ which has clearly not been the case for the last few years due to the Covid pandemic and Ukraine war, and (ii) changes in future systematic risk exposures are fully understood by investors and so have had a corresponding influence on share price movements in recent years.

A further discussion of the choice of sample lengths is given by Frontier Economics.¹¹⁷

¹¹³ UKRN Guidance, p. 23

¹¹⁴ UKRN Guidance, p. 23

¹¹⁵ Ofgem, RIIO-T2 SSMD (Finance Annex), May 2019, Appendix 5; also see then Ofgem, RIIO-2 Draft Determinations – Finance Annex, July 2020, Table 11

¹¹⁶ This is not the case at present, as short-run beta values in recent years are, for example, unduly influenced by the impacts of the Covid crisis and Ukraine war, which have had a material impact on market price movements. These are both, though, extremely rare events. Moreover, their impact on network's betas may in part be a manifestation of a temporary "risk aversion" in response to these specific events, and so would not be expected to be as relevant in RIIO-3 given the step change in network activity/investment and resulting risk. It would therefore be inappropriate to base beta estimates on, or give much weight to, short sample lengths or averaging periods that have the effect of giving undue weight to market price movements from the past 4 years. By using longer sample lengths, the impact of these events is still taken into account, but without them having undue influence.

¹¹⁷ Frontier Economics, "Beta Triangulation for National Grid Electricity Transmission", March 2024

Separately, Frontier Economics¹¹⁸ has considered the apparent discrepancy between recent falls in beta estimates over shorter, more current estimation windows and the widely held perception that the business risks facing the ET sector have increased and are likely to continue to increase in future. Frontier terms this apparent inconsistency the “low beta puzzle”.

Frontier’s analysis shows that, during the period affected by the Covid-19 pandemic and Russia’s invasion of the Ukraine, volatility has been high. Frontier show that periods of high volatility are typically observed with periods of low beta and high equity risk premium, so they consider that these factors might need to be accounted for to ensure that the overall CoE reflects increased market risk. Frontier conclude that as little weight as possible should be placed on periods of high market volatility and notes that some practitioners advocate excluding from estimates of beta years with high volatility. At present, this means more reliance should be placed on estimating beta using a longer, 10-year data period, whilst recognising that adjustment may be needed for increased expected future risk. Frontier note that, since their paper brings together concerns around beta with concerns around ERP, part of the solution may come from adjusting ERP, hence TMR. They note that Ofgem may need to consider whether its overall assessment of CoE, taking into account beta and TMR, is sufficient.

For these reasons, estimates of a network’s “BAU” beta should initially be based on daily data, using longer sample lengths (e.g. 10 years) rather than shorter samples (2 or even 5 years). Importantly, such an approach would be consistent also with the approach used by Ofgem in RIIO-T2, where most weight was placed on longer samples of data as Ofgem noted these were the most robust:

“We remain unconvinced that we should place material weight on short-term equity beta results. Statistically, we believe this is dubious and intuitively we do not think there is materially more information content within short-term (e.g. 2 to 5-year) beta values compared to long-run values”¹¹⁹

Ofgem maintained this approach at FDs, noting that *In line with our methodology, we put more weight on larger samples of data, such as the 10-year estimation window or the 10-year average of the smaller windows.*¹²⁰

Comparator Firms

Paragraph 3.75 of the SSMC Finance Annex says that Ofgem currently expects to utilise similar comparator firms to those considered during RIIO-2, including listed UK energy and water networks, on the basis that these firms are likely to be more representative of the core risks faced by GB energy networks than other comparator firms. This should be seen as applying in the context of seeking to estimate a BAU beta before changes in risk under RIIO-3 are considered. We consider most weight should continue to be placed on beta for National Grid Group, as the only listed UK company which has a business that is close to a “pure-play” energy network business. This approach would be consistent with the reasoning applied by Ofgem in RIIO-2, as explained to the CMA.¹²¹

Recent analysis by Oxera¹²² has shown that while beta estimates for different sample lengths and averaging periods for the listed UK networks have fluctuated since RIIO-ET2, with some increasing and others falling, there is no strong pattern to these values to suggest that the underlying beta values for a UK energy network estimated on a “BAU” basis has changed from the value used in RIIO-2.¹²³ Oxera do, though, also discuss the statistical anomaly regarding estimation of betas for comparators with below-market-average risk (i.e. betas that are less than one), such as the UK listed networks: *“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.”*¹²⁴ Oxera

¹¹⁸ Frontier Economics, “The Low Beta Puzzle”, March 2024

¹¹⁹ Ofgem, RIIO-T2 SSMD (Finance Annex), May 2019, Appendix 5; paragraph 3.155

¹²⁰ Ofgem, RIIO-2 Final Determinations – Finance Annex, February 2021, paragraph 3.74

¹²¹ CMA, Final Determination, Volume 2A: Joined Grounds: Cost of Equity, 2021, paragraph 5.338

¹²² Oxera report for ENA: “RIIO-3 Cost of Equity”, Section 2.3

¹²³ Ofgem explained to the CMA (See Para 5.338 in the CMA’s ELMA decision) that its beta value in RIIO-2 could be interpreted as either “Broadly the average of the three 10-year measurements for National Grid; or considering all of the data with a 70 per cent weight on the pool of National Grid betas and 30 per cent weight on the pool of water betas”. Oxera’s “RIIO-3 Cost of Equity” report shows that the average of the 2 results found by applying these 2 approaches to Oxera’s updated data would also give a very similar value to Ofgem’s point value for asset beta in RIIO-2.

¹²⁴ Oxera, RIIO-3 Cost of Equity, page 66

suggest that one way to account for this effect would be to choose a beta value from the higher end of the proposed range. Oxera also observe that, “*empirically, choosing a point estimate or narrowing the range closer to its upper bound would have the same effect as putting more weight on longer-term estimates (e.g. 10Y betas), as Ofgem did in RIIO-2, since the longer-term estimates inform the upper bound of the overall range*”.¹²⁵

Whilst recognising that we are still at an early stage in the development of the RIIO-3 price controls, and will be almost two years before the price controls are set, based on the beta values in Oxera’s recent report for the ENA which used data available up to late December 2023, and in light of the factors highlighted above, at this point in the process the same range for beta as in RIIO-2 might be considered an appropriate initial BAU beta assumption for RIIO-3, **before changes in risk under RIIO-3 are considered**.

Accounting for increased risk when estimating the RIIO-3 beta for NGET

NGET will face increased risk on a forward-looking basis, which will need to be reflected in Beta to ensure investors are properly compensated. We provide evidence from PwC¹²⁶ and Frontier Economics.¹²⁷

PwC took an early view of what NGET may need to spend in RIIO-ET3 and, for simplicity and in the absence of better information at this stage, extrapolated the regulatory mechanisms of the RIIO-ET2 price control into RIIO-ET3. PwC started with a long list of risks, then refined this list to shortlist material risks expected to be different in RIIO-ET3. For these risks, PwC quantified a financial range for these risks, which was a low-case (P10), mid-case (P50) and high-case (P90) £m value. PwC then converted these £m risk values into an associated RoRE (Return on Regulated Equity) range, as a greater RoRE range in RIIO-ET3 is likely to imply a higher beta in RIIO-ET3. Therefore, the PwC Report provides evidence of the greater level of risk exposure faced by NGET in RIIO-ET3.

There are different approaches to reflecting the increased risk in beta. PwC consider a prudent subset of these risks relating to ASTI offshore projects, noting that these projects are similar to interconnectors and that Ofgem applied a 50% weighting to Construction & Engineering betas to estimate an interconnector beta. PwC therefore suggest that applying a weight for construction beta would be a method to reflect these risks in NGET’s beta. The Frontier report then considers, if a weight for construction beta is used, what the impact on NGET’s beta would be for use in CAPM when estimating the CoE for electricity transmission in RIIO-ET3.

We summarise the findings in turn.

The shortlist of risks that PwC identified where NGET will face significant increases in risk in RIIO-EY3 are:

1. Increase in likelihood of cost overruns due to significant increase in scale and complexity of investment portfolio for RIIO-ET3 vs RIIO-ET2
2. Late delivery of ASTI projects results in breach of licence obligations
3. Increased cost of delivery driven by supply chain issues as a consequence of significant programmes of infrastructure investment across CNI industries
4. Increased ASTI ODI financial penalties due to increasing project delays from high volume and complex ASTI projects in RIIO-ET3
5. Increased costs of delivery driven by skills shortage in the labour market as a consequence of significant programmes of infrastructure investment across UK CNI industries
6. Increased cost of delivery resulting from a larger capital programme in which a greater proportion of capital schemes are subject to delays in planning process and land purchases
7. New technologies required to deliver projects in T3 may have variable success rates which could increase the cost of delivery

¹²⁵ Oxera, RIIO-3 Cost of Equity, pages 67-68

¹²⁶ PwC, Identifying and quantifying risks for RIIO-T3

¹²⁷ Frontier Economics, Triangulating Beta evidence for Electricity Transmission in RIIO-3

8. Increased financial penalties due to an increasing number of material cyber-attacks in RIIO-ET3

Risk of increasing cyber-attacks has not been quantified due to the uncertain nature of how cyber-attacks may evolve in the future. Risk due to increased new technology is a key driver of other risks. For the remaining six risks, PwC has provided a quantification of their potential financial impact, and they have also quantified the residual impact that NGET will face in respect of each of these risks after taking account of the existing mitigations in NGET's licence and mitigations currently available in RIIO-ET2 price control, on the assumption that these mitigations continue into RIIO-ET3. We note that these risks primarily relate to the scale of growth in electricity transmission, licence & regulatory mechanisms specific to deliver to electricity transmission projects and the specific electricity transmission labour skills and supply chain needed to deliver that growth. Therefore, these risks are likely to apply across the ET sector, but this work does not imply that the same risks apply to other utility sectors.

Table 32 of the Finance Annex to Ofgem's RIIO-T2 Final Determinations provides a RoRE range for RIIO-ET2 based on ODIs and 10% over or underspend on Totex. Below we compare this RoRE range for RIIO-ET2 to the PwC P10 – P90 RoRE range for RIIO-ET3.¹²⁸ To make this comparison:

- We exclude the Business Plan Incentive range for RIIO-ET2 to be consistent with the risk work done for RIIO-ET3, as PwC's work excluded the Business Plan Incentive as it is a regulatory mechanism at Ofgem's discretion
- PwC only considered risks expected to be materially different in RIIO-ET3 from RIIO-ET2. Therefore, the RIIO-ET3 RoRE range is in this sense prudent compared to RIIO-ET2 RoRE range because it does not cover the full range of risks. For example, the RIIO-ET2 RoRE range includes all financial ODI incentives whereas our RIIO-ET3 RoRE range only includes the ASTI financial ODI incentive.

	RIIO-ET3 RoRE%, real	RIIO-ET2 RoRE%, real ¹²⁹	Variance, real %
Upside vs baseline return	(0.1)%	0.9%	(1.0)%
Downside vs baseline return	(6.0)%	(1.3)%	(4.7)%
Range	5.9%	2.1%	3.8%

The work demonstrates two key points;

1. Risks are asymmetric to the downside so setting financial parameters without considering this asymmetry will result in expected returns below the CAPM implied CoE. This result will need mitigating in the price control, either through measures in the framework to mitigate these risks or through an allowed return above the CAPM-implied CoE to ensure that the expected return for T3 is in line with the CAPM implied CoE. PwC estimate that the uplift in CoE to correct for asymmetric downside risk is 240bps, although we note that this figure does not consider Real Price Effects, which may provide partial mitigation.

Our view is that it is important for the price control to provide a 'fair bet' as it helps deal with statistical variations that are random and it means the CoE is being set solely to provide an appropriate return to shareholders rather than, in addition, being set to mitigate asymmetric risk issues with the price control, which clouds whether the CoE is appropriate. Therefore, our preference is for the price control to be a 'fair bet' upfront, with no asymmetric risk so that no CoE uplift is needed for this purpose.

2. Risk exposure (variance) is greater at RIIO-ET3 than in RIIO-ET2. There are different approaches to measure the increase in risk. PwC consider a prudent subset of these risks relating to ASTI offshore projects, noting that these projects are similar to interconnectors and that Ofgem applied a 50% weighting to Construction & Engineering betas in estimate interconnector risks. PwC therefore suggest

¹²⁸ PwC, Identifying and quantifying risks for RIIO-T3, page 6

¹²⁹ Ofgem, RIIO-2 Final Determinations – Finance Annex, February 2021, table 32

that applying a 50% weight for construction beta to the 32% of offshore ASTI spend in NGET's RIIO-T3 plan would be a method to reflect these risks in NGET's beta. Thus, 16% of NGET's T3 spend could be viewed as similar risk to the Construction & Engineering industry and therefore a weighting of 16% for construction beta could apply. PwC take this 16% value as a starting point and suggest that a 10%-15% conservative range would be appropriate.

On this second finding, as noted above beta values calculated from past data will not reflect the increase in risk (and corresponding beta and required CoE values) that the change in National Grid's business activities over the next price control period (and beyond) entails. Electricity networks are at the forefront of the energy transition and the drive to Net Zero. If not adequately funded they will be unable to play this critical role. They will need to take on a significant increase in scale, and innovate, to meet the challenge head on, and in order to deliver efficiently for consumers and network users. The increased risk that this entails needs to be reflected through a higher notional equity beta and a higher allowed return.

For ET (and NGET in particular), this will require a modification to Ofgem's approach to beta estimation in RIIO-ET2 for RIIO-ET3. There are various approaches that could be considered to capture the issue of increased risk. For example, Ofgem note the following approaches:

- In RIIO-ED2,¹³⁰ as well as earlier price controls (e.g. RIIO-GD1 and RIIO-ET1¹³¹), Ofgem recognised some of the factors that affect beta, such as capex/ RAV and RORE ranges. These factors will increase the required equity beta for electricity transmission in RIIO-ET3.
- The SSMC Finance Annex recognises at paragraph 1.6 that the comparator companies that make up the beta sample may need to be revised to ensure it continues to appropriately reflect the forward view on risk. Therefore, including the additional comparator companies and/or making adjustments to beta that are suggested above would be consistent with this thinking. This would also be consistent with the UKRN guidance, which recognises that it may be appropriate to adjust betas to *"reflect the relative business risk between the sectors or adjusting a sector beta to reflect project risk."*

We note the following approaches to compensate for increased risk:

- Increasing the beta to reflect the step-up in capex / RAV ratio: such an adjustment would be consistent with Ofgem's thinking and approach in RIIO-ET1, where higher beta values were used for those companies and sectors with higher capex/RAV ratios.
- Placing weight on the much higher asset betas seen by companies in other sectors (e.g. construction and engineering), e.g. by weighting this based on the proportion of NGET future activity that is comparable to these companies. PwC estimated the percentage of NGET's T3 risk that could be viewed as similar to the Construction and Engineering industry as 10% - 15%. Frontier Economics took the mid-point of this range, 12.5%, then estimated the average asset beta for construction stocks, which they found to be 0.77, and used this information to estimate the impact on NGET's beta of applying prudent and reasonable weights for construction.¹³² This impact was an increase in the proposed asset beta of 0.05.
- Considering applying a weighting for growth stocks in estimating NGET's beta to reflect that it is moving from a value stock in RIIO-ET2 towards being a growth stock in RIIO-ET3.
- Noting that much of NGET's activity in the next decade is comparable to that of constructing OFTOs and interconnectors, and so the higher asset betas used by Ofgem in setting OFTO and interconnector IDC rates should be taken into account (including, for example, specific uplifts in recognition of the higher risks associated with the marine environment).
- DESNZ applied a 1% or 2% uplift in hurdle rates for offshore wind etc in the CFD AR6 (c.f. AR5).¹³³ Some of the risks behind this increase, specifically complex supply chains with lack of capacity and cost uncertainty, are issues that NGET's future capex programme is also exposed to. The 2% hurdle uplift related to TNUoS and wider cost uncertainties, whilst the 1% hurdle uplift applied for TNUoS

¹³⁰ RIIO-ED2 Draft Determinations (Finance Annex), Ofgem, June 2022, Table 10

¹³¹ Ofgem, RIIO-ET1: Final Proposals for National Grid Electricity Transmission and National Grid Gas – Finance Annex, December 2012 paragraph 3.15; RIIO-GD1 Final Proposals – Finance annex, December 2012, paragraph 3.14: *"We regard the scale of investment as the most significant differentiator affecting... the asset beta (and, therefore, the cost of equity)"*

¹³² Frontier Economics, Triangulating the evidence for NGET beta estimation, Table 3

¹³³ See [Methodology used to set Administrative Strike Prices for CfD Allocation Round 6 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

uncertainties. This difference implies that a 1% hurdle uplift should apply for wider cost uncertainties and therefore a 1% hurdle uplift is appropriate for NGET. This risk is likely to be concentrated in the construction period, which means NGET's CoE for its construction projects in RIIO-ET3 should be increased by more than this percentage.

- In the United States, in January 2024, FERC issued an Order authorising a 0.75% ROE incentive for New York Offshore Wind Transmission Line, reflecting the higher risks on this project,¹³⁴ many of which are similar to risks that NGET will experience to a greater extent in RIIO-ET3 than in RIIO-ET2.

By way of summary:

- We note an increased risk in RIIO-ET3. There are a number of approaches to take into account increased risk; some of these may be different ways of estimating the same change so the above approaches may not be additive. One way to estimate the impact of increased risk on beta is by including the mid-point of PwC's proposed weight on Construction & Engineering betas (12.5%), which, based on Frontier Economics' work, results in an increase in asset beta of 0.05. The implied hurdle rates and risk premium advised by DESNZ for AR6 suggest that the impact on beta could be higher and that this approach is prudent.
- We note that NGET's RIIO-ET3 risks are asymmetric and this result will need mitigating in the price control. One way to mitigate is to increase CoE. However, instead, ideally it would be preferable to mitigate the asymmetry through measures in the regulatory framework to make the price control a 'fair bet' upfront.

Aside from risk, we note that the significant volume of investment will mean that NGET's RAV, and therefore NGET's market capitalisation, should increase as a proportion of the total market. Mathematically, if FTSE all-share market capitalisation remains constant in real terms, but NGET's RAV, and market capitalisation, grows significantly in real terms from RIIO-ET2 to RIIO-ET3, this change would increase NGET's beta towards a beta of 1. Thus, even with an equivalent risk, beta increases so investors in NGET will need a higher rate of return. Evidence of increased risk that drives an increase in required returns is an additional consideration.

A similar principle also applies in a broader context; market capitalisation of the energy sector would also be expected to increase relative to the overall market capitalisation. This change should also mean NGET's systematic risk is more closely correlated with the market, which should also result in an increase to NGET's beta and CoE.

There are two other methodological points in relation to Beta; Debt Beta and the use of Book or Market Value debt when calculating gearing. We refer to the Oxera ENA report for limited discussion¹³⁵ of these points and the approach adopted by Oxera in relation to them.

Selecting a point estimate for the Cost of Equity

It has been widely recognised in past regulatory price control decisions that there are often good reasons for choosing a point estimate above the 50th percentile of the CoE range, given parameter uncertainty and as the potential costs of under-investment from a WACC that is too low are likely to outweigh the harm to consumers arising from a WACC that is too high. Thus, until the last round of price controls, regulatory practice, both in the UK and internationally, generally involved selecting a point estimate in the upper half of the CoE range, as this was recognised to be in consumers best interests.¹³⁶

Whilst Ofgem moved away from this approach in RIIO-ET2 (as Ofwat did at PR19), this should be seen as a decision that reflected the specific market conditions and wider context at the time those price controls were being set, including (i) a suite of cross-check evidence which Ofgem considered supported a CoE at (or

¹³⁴ See FERC, Order On Transmission Rate Incentives and Tariff Filing, etc. re New York Transco, LLC's et al. Propel New York Energy Alternate Solution 5 Project under ER24-232, 2023, paragraph 75 "...the Project involves new, high-voltage, completely underground and submarine electric transmission cables that will involve nearly 90 miles of excavation for underground cable in urban areas, underwater crossings, and the need to directionally drill for 6,000 feet, as well as the construction of four transmission substations located in densely populated areas. We find that the greater risks and challenges associated with those characteristics of the Project of warrant an increase in the level of ROE Risk Incentive compared to those earlier cases". Available at https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20231226-3020

¹³⁵ Oxera, ENA "RIIO-3 Cost of Equity"

¹³⁶ CMA, "Water Redeterminations 2020: Choosing a point estimate for the Cost of Capital –Working Paper", January 2021 paragraph 4 & 27

below) the mid-point of the CAPM range, and (ii) a planned investment programme for those price controls that was much lower than now envisaged for electricity transmission in RIIO-3.

For the PR19 Appeals, the CMA disagreed with Ofwat's approach and adopted a degree of aiming up above the CAPM midpoint in selecting the CoE, consistent with prior regulatory practice. However, in the RIIO-ET2 and GD2 Appeals, the CMA did not find that a failure to aim up constituted a sufficiently clear "error" to find against Ofgem on this point.

In selecting the point estimate (and how far this should lie above the 50th percentile of the range in order to best support consumers' interests), a further consideration that was highlighted by the CMA in its cost of capital working paper issued during the PR19 appeals (**the CMA Working Paper**) was the balance between "new and sunk investment". The CMA Working paper refers to the summary reached in the UKRN's 2018 Cost of Capital report on this point, which was that "... if the regulator was only interested in incentivising new investment, for a range of different assumptions on the nature of demand for the regulated good, **the RAR would be set at a value such that the regulatory expected return (RER)⁴ was above the 90th percentile of the regulator's range of estimates of the true WACC**. However, it also argues that for sunk investment future financeability simply requires that existing capital earns the expected WACC— of which our best estimate is the midpoint of the range. **So the target value of the RER should reflect the balance between new and sunk investment.**" (emphasis added).¹³⁷

Taking these considerations into account, the case for selecting a higher point estimate is much stronger in RIIO-ET3 for electricity transmission than was the case in RIIO-ET2, given the scale of new investment required, and this is also a reason to select a point estimate that is further above the mid-point of the range than in the CMA's PR19 appeal determination.

The UKRN Working paper also referred to the policy adopted by the New Zealand Commerce Commission (NZCC): "*The New Zealand Commerce Commission (NZCC) follows a policy of setting regulatory price controls in energy based on the 67th percentile of the WACC range. The NZCC suggest that it is appropriate to use a WACC significantly above the mid-point estimate for price-quality path regulation, stating that the potential costs of under-investment from a WACC that is too low are likely to outweigh the harm to consumers (including any over investment) arising from a WACC that is too high.*

NZCC states that the main reason to set a WACC percentile above the mid-point is to mitigate against the risk of under-investment relating to service quality generally, and of under-investment contributing to major supply outages in particular. However, compared to setting the WACC at the mid-point, a WACC uplift should also reduce the risk of under-investment in other types of investment as well."¹³⁸

For these reasons, in the context now expected for electricity transmission in RIIO-ET3, there is a strong case to select a point estimate above the mid-point of the estimated CoE range.

Wider considerations including compliance with UKRN Guidance

Whilst the 2023 UKRN guidance recommends setting the CoE at the mid-point of the range, it does not require this in all circumstances¹³⁹. The UKRN guidance does not rule out a CoE above a reasonable mid-point where there is justification to do so, and such justification should be considered on a case-by-case basis considering factors such as welfare impact of underinvestment and cross-check evidence.¹⁴⁰ Indeed, the UKRN explicitly guides regulators to consider that if cross checks indicate a problem with the CAPM range, then they should consider *whether an adjustment to the CAPM derived cost of equity is appropriate*.¹⁴¹

When there is justification for departing from the CAPM midpoint, it is unlikely to be clear which of the CAPM parameters is in error and needs adjusting, nor on what basis such an adjustment would be made. It is consequently preferable in these circumstances to select a point estimate above the CAPM mid-point.

We consider that Ofgem should select a higher point estimate than the mid-point of the CAPM range to reflect the current cross-check evidence and the circumstances expected to prevail in RIIO-ET3. For the reasons explained elsewhere in this response, a CoE based on CAPM will not properly reflect the

¹³⁷ Wright, Burns, Mason and Pickford (2018), Estimating the cost of capital for implementation of price controls by UK Regulators, p72

¹³⁸ "Water Redeterminations 2020: Choosing a point estimate for the Cost of Capital –Working Paper", CMA, January 2021 paragraphs 11 and 12

¹³⁹ UKRN Guidance, p. 5 (See Recommendations 6, 7)

¹⁴⁰ *Ibid*, p.27; "...any decision to do so must be justified on a case-by-case basis by an assessment of the extent to which existing regulatory mechanisms can address these issues [namely: cross checks from market evidence; welfare impact of under investment; asymmetry in the package of incentives; asymmetry in the choice of CAPM parameters; financeability], or whether alternative new mechanisms could do so in a more targeted manner

¹⁴¹ *Ibid* "...Where market evidence provides convincing evidence that the required return on equity is different to the CAPM point estimate, it is advisable to consider whether an adjustment to the CAPM derived cost of equity is appropriate"

challenges expected at RIIO-ET3. It would be consistent with UKRN guidance to consider the prevailing circumstances across the price control rather than rigidly choosing a mid-point CoE due to an inflexible reading of one part of the UKRN guidance.

The risk to consumers of setting a CoE too low is significant, and we explore this in response to FQ14 on investability. Broadly speaking, RIIO-ET3 sees significant need for large scale investment and if the CoE is not attractive, investors will suffer no harm as they will simply invest elsewhere. However, consumers will ultimately pay the cost of underinvestment – both financially and societally.

We therefore agree with Ofgem that the concept of Investability should be a critical part of cost of capital analysis and further believe that assuring that the price control is 'Investable' should involve a CoE adjustment where necessary. This, in essence, will dictate that the CoE for ETOs must be high enough to attract the 'fresh' (i.e. new) equity that Ofgem alludes to.¹⁴² The natural parameter uncertainty, and demands on investability, mean that the CoE should therefore be adjusted if a test of investability¹⁴³ indicates that investors are unlikely to commit capital.

Expected vs Allowed Returns

In relation to adjustments to allowed returns to reflect expected returns, we welcome Ofgem's confirmation at the start of paragraph 3.88 of the SSMC Finance Annex that: "*We have taken on board the feedback from the CMA on this issue and do not propose reintroducing Step 3 [i.e. the "outperformance wedge"] into our process for assessing allowed returns on equity in these price controls.*" In the RIIO-2 appeals the CMA determined that Ofgem was wrong to implement an outperformance wedge. Any attempt, explicit or implicit, to reintroduce such a concept in RIIO-3 would damage investor confidence and weaken the investability of the price control. Moreover, such a mechanism would not be consistent with Ofgem's statutory duties to have regard to the need to secure that licensees are able to finance their activities (section 3A(2)(b) Electricity Act 1989) or to have regard to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed (section 3A(5A) Electricity Act 1989). For these reasons, Ofgem should not introduce any adjustment to allowed returns to reflect its view of expected returns.

The overall Cost of Equity

To calculate an overall range for the CoE, the CAPM estimate developed by Oxera for the ENA is used as an initial starting point. Frontier then supplement this analysis through i) recognition of additional risks, including on a forward-looking basis and ii) recognition that the TMR does move with interest rates (though remains within the definition of stable). Finally, Frontier compare this range to their suite of cross-checks including a comparison to Hybrid bonds.

To develop a range, Frontier consider high and low scenarios:¹⁴⁴

- The **Low** scenario uses Oxera's calculated CoE, and does not adjust for forward-looking risk
- The **High** scenario adopts a TMR partially informed by the 'Glider' calculation (though does not exceed Oxera's estimate) and places weight on construction betas in order to recognise forward-looking risk

The overall suite of market evidence available at this early stage of the process, from a range of sources including the observed yields on hybrid bonds, points towards a range for the allowed cost of equity in the region of 5.8%-6.9% (60% notional gearing).¹⁴⁵ We are keen to engage and work further with Ofgem on the evidence referred to in this response and, as new evidence and analysis is developed, move towards agreement of an appropriate range.

¹⁴² RIIO-ET3 SSMC, para. 1.6

¹⁴³ See National Grid's response to FQ14

¹⁴⁴ Frontier Economics, Cost of equity for NGET at RIIO-3, March 2024. Risk free rate as per the Oxera RIIO-3 Cost of Equity Report (dated 23 February 2024) prepared for the ENA. The cut off date for the analysis is 20 December 2023

¹⁴⁵ *Ibid*

Allowed WACC

Key messages:

- We are broadly supportive of Ofgem applying the UKRN guidance recommendations 1 and 9, i.e., that the allowed rate of return WACC should be based on the WACC for a notionally financed company in the sector at an appropriate, assumed notional gearing level.
- We do not currently see good reasons for Ofgem to depart in RIIO-3 from the notional gearing assumptions applied to ET companies in the RIIO-2 price controls. A reduced notional gearing would increase the amount of new notional equity required, thus making notional investability harder to achieve; whilst a higher notional gearing could make it more difficult for key financeability-related credit metrics to be achieved and thus weaken both notional debt financeability and investability.
- We are unclear on why Ofgem considers it necessary to maintain the notional gearing level in each year of the price control. We do not understand what the problem is that the move these proposed new arrangements are intended to resolve, and consideration should be given to whether they may cause or the potential unforeseen consequences of the proposed new arrangements.

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

NGET agrees with recommendations 1 and 9 in the UKRN guidance. They appear consistent with regulators' approaches in past price controls, and we consider them suitable for use in RIIO-ET3 too, provided the underlying parameters and values are estimated and set appropriately and reasonably.

FQ11. Do stakeholders consider there to be good reasons to deviate from the notional gearing assumptions (with respect to the level of gearing and the mix of debt types) applied to GD, GT and ET companies in the RIIO-2 price controls?

At this stage we see no strong reasons to depart in RIIO-3 from the notional gearing assumptions used for the ET sector in RIIO-2. There is merit in maintaining consistency from one price control to the next, unless there are strong reasons for changing the level that is assumed.

At a time when the SSMC is signalling that significant new equity, on a notional basis, will be needed in the sector¹⁴⁶, it would be ill-advised to lower the notional gearing assumption, as this would add to the notional equity funding requirement and thus be likely to make it more difficult for companies to raise the required notional equity and for the price control to be investable.

There may be arguments in favour of increasing the notional gearing assumption, to better enable new notional "fresh" equity to be raised for the notional company. However, we note that increasing notional gearing in this way could appear counter-intuitive to the market, at a time when interest rates have materially increased and Ofgem is placing increased focus on financial resilience. An increased leverage assumption might also make it more difficult for the price control to achieve the required levels for (debt-related) credit metrics, and reduced headroom against those metrics could adversely affect financeability and so, as a knock-on effect, harm investability.

Our views on the mix of debt types, i.e., fixed rate debt or index linked debt, are covered in the response to FQ3. We support a reduction in the notional proportion of index linked debt.

FQ12. Do stakeholders agree with the proposal that notional gearing levels should be maintained for each year of the price control? Do stakeholders have a preference for how this assumption is managed within the price control process?

We do not agree with the proposal as it is unclear what problem with the current arrangements this proposal is seeking to address, at least in relation to ET. The current approach, whereby the notional company is modelled each year using the PCFM in order to calculate allowed revenues, can mean that the modelled notional gearing flexes slightly each year during the price control, but only within tolerance limits. If modelled

¹⁴⁶ RIIO-3 SSMC (Finance Annex), para. 1.6

notional company gearing would exceed the target notional level by more than the specified tolerance, the PCFM models an injection of new notional equity to bring the modelled notional company gearing back into line. This is a practical and workable solution that has developed over time, is understood by the key stakeholders, and we are not aware of any significant drawbacks with it as long as an appropriate level of equity issuance cost is allowed. If Ofgem has concerns that the variations in gearing that are modelled can be larger than are desirable, this could perhaps be most simply addressed by reducing the tolerance level within the PCFM.

If Ofgem were to demonstrate there is a problem to address, we and other stakeholders would need to understand how any change from the current arrangements would be implemented. Mechanisms across the wider price control would obviously need to be applied consistently, for example, the PCFM would need to model the notional company in a consistent way; the necessary funding would need to be provided in relation to any new notional equity that is implied; and consistent assumptions would need to be used in the proposed new “weighted” cost of debt mechanism. This change would also need to avoid indirectly or unintentionally resulting in other changes that have not been consulted on. Such a change would be altering a central part of the current price control arrangements, and if it were implemented, great care would need to be taken to avoid any unintended effects.

We also note that it may be appropriate to test financeability at higher levels of leverage than those used in the PCFM, particularly where significant amounts of new equity are required.

Financeability

Key messages:

- The increased investment over RIIO-ET3 will require companies to access additional borrowings to fund a significant part of the investment, Ofgem needs to take this into consideration when assessing companies' ability to access debt markets. Therefore, Ofgem should continue to target a minimum rating of Baa1/BBB+ for RIIO-ET3.
- We believe other credit rating agencies key metrics should be included when assessing financeability such as S&P FFO/Net debt metric.
- We have significant evidence that NGET will require a higher return on capital than the “business as usual” (BAU) level under Ofgem's current (RIIO-ET2) methodology.
- In addition, we evidence that some specific financial features including growth in earnings and EBITDA closely aligned with asset growth will be important in order to attract new capital, and particularly new equity capital.
- We propose a key ‘test’ of investability that it is critical to be passed to ensure the financial package is investable.

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

With the increased level of investment expected over the course of RIIO-ET3, Electricity Transmission companies will be accessing additional borrowings to fund a significant part of this investment requirement. This requires an increased focus on securing the ability of the companies to access debt markets.

We maintain our position that any price control should support, at a minimum, a credit rating equivalent to Baa1/BBB+ for NGET's notional company. Any deviation below this benchmark would reduce the availability of funding, necessitate additional expenditures in maintaining and securing new debt and this would increase the pressure on the allowed cost of debt and lead to higher costs for consumers.

It is acceptable to use the Moody's methodology for a part of the credit rating assessment for the notional company. This aligns with the approach taken in RIIO-ET2. Moody's methodology encompasses both quantitative and qualitative factors, and any subjective elements must also be considered including scale and complexity of the capital programme, stability and predictability of the regulatory regime, financial policy, revenue risk, asset ownership model and cost and investment. Of particular significance is rating agencies' consideration of the scale and complexity of the company's capital programme. RIIO-ET3 is expected to include a step up in the level of investment coupled with increased complexity of projects. As a result, the

impact of this factor in rating agency considerations will have to be re-assessed compared to the RIIO-ET2 level.

We agree with the testing of gearing and of the cash flow metric, AICR, as emphasised by Moody's in their rating methodology. We note that most network companies will maintain credit ratings from agencies other than Moody's. It is important to ensure that the notional company can deliver acceptable metrics as measured by other major rating agencies. These include FFO/net debt as measured by S&P and PMICR (post-maintenance interest coverage ratio) as measured by Fitch as these measures are of high importance in those agencies' assessment of the ratings of regulated UK utilities. We note that, unlike AICR, these metrics may be impacted by changes to the level of fast money and/or the level of allowed depreciation and that adjustments to these factors may be required within RIIO-ET3 in order to deliver a financeable outcome of stable and acceptable rating metrics.

We also note that it would be inconsistent for Ofgem to propose that companies maintain more than one credit rating without testing financeability against the key metrics used by all major rating agencies.

We agree with Ofgem's inclusion of longer-term analysis in the SSMC and believe it represents an appropriate development of the financeability test. Additionally, NGET expects that the increased level of investment required in RIIO-ET3 will extend beyond the RIIO-ET3 period and considering a perspective beyond the confines of the five-year price control is important for ensuring financial sustainability. In this context, we caution that whilst capitalisation rates remain an important feature of the financial package for consideration, there should not be over-reliance on the use of adjusting capitalisation rates alone to deliver improved cash flows in a single price control period.

The NGET notional company is expected to require significant new equity in RIIO-ET3 and Ofgem should ensure the funding of equity issuance costs includes the additional costs associated with cost of carry as it is likely the equity will need to be raised ahead of when it is required. If these costs are not funded appropriately then there is a risk of impact to financeability testing. Without a recognition of an equity carry cost, financeability testing would have to be adjusted to ensure that, at any point during the price control period, acceptable credit metrics can be delivered over a forward-looking period of 5 years without assuming **any** injection of new equity capital occurs during that forward period. We include more evidence on equity issuance allowances (incl. cost of carry) in our response to FQ14.

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

RIIO-ET3 will represent a significant departure from RIIO-ET2, driven by the step change in the level of capital expenditure that is critical for the delivery of lower electricity bills for customers and net zero for the UK. To maintain a constant level of leverage will require a significant level of new equity to be injected into the notional NGET company. We do not believe that conventional assessments of required returns and financeability will consider all the relevant evidence regarding the challenge at the current time of raising the 'fresh' equity that Ofgem expects network companies will need to seek in RIIO-T3 and beyond. The financial and operational environment has evolved significantly for TOs since the previous price controls, and new considerations are required including the impact of significant competition for capital not only domestically, but also globally.

We define "investability" in this context as the ability to retain and attract significant amounts of equity and debt capital. We believe that in the context of RIIO-ET3 investability tests for TO's should focus on additional financial characteristics and levels of allowed return which will help to convince investors to commit that new capital. These tests are generally not considered in conventional estimates of cost of capital but investability tests should act as important tests to check whether the price control in the round is consistent with Ofgem's statutory duty to have regard to the need to secure that licensees are able to finance their activities and its net zero duty.

In summary, we believe that the evidence in relation to investability supports changes from RIIO-ET2 in respect of:

- Increased allowances for debt costs (covered in the response to FQ5) due to the increased level of debt issuance required
- An increase in the allowed cost of equity compared to the RIIO-ET2 methodology due to the overall increase in absolute risk faced by NGET (covered in the response to FQ6- FQ9), due to the need for NGET to attract new equity capital if it is to maintain constant leverage levels and due to increasing competition for capital.

- Ensuring the ability of NGET to deliver growth in earnings and EBITDA in line with the expected rate of asset growth along with an appropriate level of dividend yield, in order to satisfy the requirements of equity investors.

Ofgem's duty in respect of TOs licensees' financeability is contained in section 3A(2)(b) of the Electricity Act 1989. If Ofgem cannot be reasonably certain that a notional company would be able to attract the full amount of the significant capital required to fund investments – that is, the price control is not fully 'investable' – Ofgem may have failed to discharge its financeability duty. This would put at risk essential projects for the net-zero transition, UK economic growth and crucial increases in transmission capacity that facilitate consumer benefits.

In comparison to RIIO-ET1 and RIIO-ET2, RIIO-ET3 marks a significant departure from the status quo and there will be a significant evolution of the delivery requirements for NGET. In particular, this involves a significant increase in terms of size and complexity of the investment programme. The risk landscape will (and has already begun to) evolve and hence historical data, including in relation to beta, may not adequately reflect an appropriate representation of future risks. This is covered in our responses to FQ6-FQ9 where we evidence updated CAPM parameters (risk free rate, total market return and beta) to demonstrate that a range for cost of equity of 5.8% – 6.9% is appropriate, with a midpoint of 6.3%.

In addition, the scale of expected spend in RIIO-ET3 means that the notional NGET company will need significant amounts of new equity and debt, well beyond the levels expected over RIIO-ET2 or any previous price controls. This has two consequences which should be considered when determining what an "investable" price control looks like:

- Evidence supports a higher allowed return on capital than the "business as usual" (BAU) level under Ofgem's current (RIIO-ET2) methodology
- Some specific financial features of the price control will be important in order to attract new capital, and particularly new equity capital

To deliver an investable outcome, evidence supports a higher allowed return on capital than the "BAU" level under Ofgem's current (RIIO-ET2) methodology

When considering the practicalities of raising new equity capital, we believe that the most readily available evidence can be drawn from the UK public equity markets.

In order to raise new capital in the UK public equity markets, companies must make an offering to investors. These offerings will typically provide a discount to the existing share price, to encourage investors to participate, and will also typically provide a narrative in relation to the level and profile of financial returns that investors might expect on the new equity they are being asked to commit. In some cases, investors will have to decide whether to sell existing investments in order to participate in the equity raise.

The need to offer a higher level of return for NGET in these circumstances results from three factors:

- The need to offer a discount on new equity (and debt) issuance to encourage investors to participate
- The availability of, and competition for, new equity capital given the scale of the notional NGET requirement in particular
- The narrative associated with raising new equity

Evidence for the need for a higher rate of return than a BAU level in order to attract new capital broadly fits into these three themes. We recognise that this is an area where the evidence base continues to evolve and will continue to develop evidence and thematics ahead of RIIO-ET3 Business Plan submissions.

These three themes evidence that a standalone upwards adjustment to NGET's WACC is needed, above and beyond conventional CAPM assessment, to ensure NGET can attract the 'fresh' equity Ofgem state will be needed in T3 and beyond.

Significant capital raises require discounts and incentives to be offered to investors

Significant share capital raises are relatively rare in the UK. Looking at the most recent UK Main Market primary placings which issued >15% of share capital, these offered an average discount on purchase of approximately 4%¹⁴⁷, which is a specific incentive to investors on top of the usual investor proposition.

¹⁴⁷ Appendix FQ14: "Equity investments typically require a discount in order to incentivise investments"

Availability of, and competition for, new equity capital

NGET will be competing for capital against growing domestic investment in the energy and water sectors. The England & Wales water sector is planning to invest £96bn over the period 2025-2030, an 88% increase over the previous five years¹⁴⁸, with some companies already accessing the equity markets to finance some of this additional investment. At the same time, the Great Britain energy sector is also expecting significant increases in investment. This growth in energy sector investment is not limited to the UK. For example, market commentators¹⁴⁹ point to an increase in European energy sector investment from c€2.89tn for 2022-2025 to c€5.75tn from 2026 to 2030; this approximate level of investment is expected to continue in real terms to 2050.

At the same time, there have been substantial outflows from funds in the UK that might typically be expected to be a source of the new equity required¹⁵⁰.

During RIIO-T3 and beyond, Ofgem expect that network companies will need to seek 'fresh' equity from investors. Excluding banks (which raised large amounts of equity during the financial crisis for balance sheet repair) the largest UK corporate equity raise since 2003 is approximately £7.5bn with only 3 corporate raises above £4bn in that period¹⁵¹.

It is clear that the absolute scale of the requirement in ET, and NGET in particular, is exceptional even compared to historic levels. In the current economic and market circumstances, it places a particular risk on the ability of the NGET notional company to attract sufficient new capital. An increased risk of this nature is most appropriately compensated through an increased level of allowed return. In particular, a standalone upwards adjustment to NGET's WACC is needed, above and beyond conventional CAPM assessment, to ensure NGET can attract the 'fresh' equity Ofgem state will be needed in T3 and beyond.

As Frontier Economics note; "Given where supply of and demand for capital now intersect, the actual cost of capital is increasing and the allowed cost of capital must reflect that."¹⁵² In Figure 1 below¹⁵³, the increased demand for investment from the RIIO-T2 period to the RIIO-T3 is represented by the shift in demand curve to the right and the tightening of monetary policy (evidenced by significant increases in Bank of England base rates) is represented by the shift in supply curve to the left. Both of these changes causes the market clearing equilibrium rate of return (price) to increase:

Figure 1: relationship between supply and demand for investment

¹⁴⁸ <https://www.water.org.uk/investing-future/pr24>

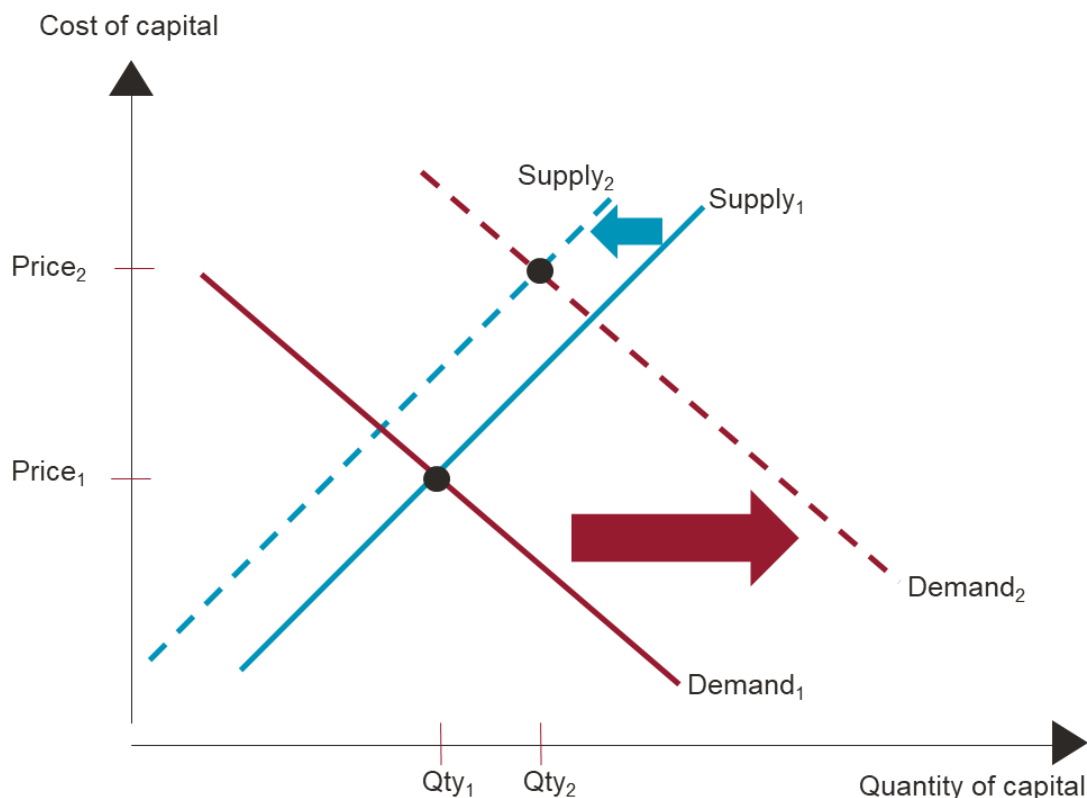
¹⁴⁹ Appendix FQ14: "Competition for capital is increasing"

¹⁵⁰ Appendix FQ14: "Considerable outflows from UK and European funds"

¹⁵¹ Source: Dealogic and Company announcements as of 5th February 2024. UK Main Market Rights issues >£1,500m since 2003.

¹⁵² Frontier Economics, Equity Investability in RIIO-3, para. 128

¹⁵³ Frontier Economics, Equity Investability in RIIO-3, figure 5



The step up in NGET's capital investment requirements will extend well beyond the RIIO-ET3 period. Therefore, it is also imperative that an investable financial package is reached in RIIO-ET3 to ensure NGET and the sector can attract subsequent equity injections if needed in the period beyond RIIO-ET3.

The narrative associated with raising new equity

If NGET is to raise sufficient new capital, equity investors will need to present solid cases to their investment committees on why the Ofgem proposition for equity returns and the key financial metrics of the RIIO-T3 price control are comparatively stronger than others. Investors will consider the headline level of return offered under the RIIO-ET3 control and judge whether it is appropriate. In this regard, they are likely to consider evidence on:

- Commentators', such as sell side equity research analysts, views on the level of available returns
- Other regulators' and companies' views on appropriate premia for investment programmes
- Comparisons to previous "business as usual" allowances
- The cash flows available on those new investments

At Ofwat's publication of the PR24 Final Methodology a historically low allowed cost of equity was proposed (on a like-for-like basis). Water companies are also expected to deliver large increases in investment programmes, and some may need new capital. Whilst we are cautious about comparison to water, as the scale of investment is higher for NGET than for individual water companies, it is a relevant to note that broker commentary immediately following Ofwat's publication was generally negative, with JP Morgan noting the proposed returns were '**unattractive**'.¹⁵⁴ There is strong evidence that regulators' allowed returns and the degree of investability implicit in the price control is closely monitored and observed by investors.

Sell-side broker commentary has more recently held a more bullish view of returns required for UK energy utilities relative to water utilities. Following the National Grid half-year results in 2023 some sell-side analysts noted the level of new capital NGET may need to raise, with UBS commenting that the issue "may become an overhang to the investment thesis";¹⁵⁵ this represents a direct linkage between the requirement for additional capital and the need to consider investability.

¹⁵⁴ JP Morgan 8/6/23, available at <https://www.proactiveinvestors.com/companies/news/1011377/uk-water-companies-unattractive-compared-to-power-sector-investment-bank-says-1011377.html>

¹⁵⁵ UBS, Further Colour from the Results Presentation, 9/11/23; provided as evidence to Ofgem

Barclays support Ofgem's focus on investability, noting that "i) CAPM betas are backward looking in our view and may not pick up the increased risks of a large increase in investment, and ii) a 'developer' premium (hurdle rate) is part of corporate investment decisions, and relying on a cost of capital at hurdle rate may not attract capital".¹⁵⁶

A recent report by Bernstein assumes that "reflecting the strategic importance of transmission investments, the regulator increases the base allowed returns",¹⁵⁷ ie a higher return is required to enable future transmission investment.

We note that in the Heathrow Terminal 5 process, the CAA chose a WACC above the mid-point of the CAPM range, explaining that "We note that a WACC that is above our mid-point for the purpose of avoiding a WACC which is too low, is likely to over-reward equity, and is, therefore, beneficial to BAA. However, we consider it a necessary cost to airport users of ensuring that there are sufficient incentives for BAA to invest."

Overall, these commentators support the arguments for increasing allowed returns in RIIO-ET3 to support investability.

As Barclays note, the additional investment on top of a "BAU" level expected in RIIO-ET3 is so large and distinct that it is likely to be considered by investors in a similar way to a new programme of work in addition to the ongoing business. In many cases, companies will look to generate returns in excess of a BAU level of WACC on new projects,¹⁵⁸ and some regulators will allow additional returns in new programmes of work in order to encourage new investment. Ofgem should consider the evidence of premia over base returns that companies and other regulators highlight from large individual projects or programmes of work when considering the appropriate overall level of allowed return.

There is evidence that other regulators are aware of the significant competition for capital and hence are calibrating their regulatory frameworks appropriately. For example, some regulators are differentiating between new investment and maintenance capex to incentivise and appropriately remunerate the company overall when reflecting the construction of substantial levels of new essential infrastructure. In 2023, BNetzA (the German regulator) announced an increase in the allowed return on equity for new investments of approximately 200bps relative to its existing investments. In doing so, the regulator noted 'we want to see **better interest on new investments** and thus will create noticeable incentives for network operators to spend money'¹⁵⁹ (emphasis added).

In relation to cash flows associated with new investments, investors will seek to understand the cash flow characteristics and IRRs of the new investments being made to understand if these investments are attractive and can support the ongoing investor proposition, including the ability to support leverage, credit ratings, and deliver returns in the form of dividends.

Some specific financial features of the price control will be important in order to attract new capital, and particularly new equity capital and we propose these are considered as a 'test' of investability

In addition to levels of return on capital, given the strain to key financial metrics caused by the significant step up in RIIO-ET3 capex, there are several other features of the price control that need to be considered in the context of investability. We propose that a key 'test' of investability should be passed in order for the financial package to be appropriate. If the test is not passed, investors will have less confidence in NGET's ability to deliver sustained returns so they will require higher returns, ie above the CoE range stated in FQ6-FQ9, under the price control to compensate for this risk. The features of the 'test' should contribute to a financial package that will deliver the key characteristics that allow equity investors to recognise a clear, compelling investment case and therefore justify making additional investments to support the energy transition. Otherwise, there is a risk that these investments will not be made. These characteristics include:

- An attractive **dividend yield**
- **Other metrics:**

¹⁵⁶ Barclays, Ofgem consultation on reform of regulation 13/12/23; provided as evidence to Ofgem

¹⁵⁷ Bernstein, National Grid: Is an equity raise required to support the ambitious growth plans post FY26?, 1/2/24; provided as evidence to Ofgem

¹⁵⁸ For example, see Orsted, Capital Markets Day 2023 presentation available here: <https://orstedcdn.azureedge.net/-/media/www/docs/corp/capital-markets-day/orsted-cmd-2023.pdf?rev=f7d3ce29cf6d437a9722ff83aa93cb88&hash=237B05B6D748C24B08E73BB57B097CD4>

RWE, Capital Markets Day, 2023 presentation available here: [CMD-2023-Presentation-internet \(rwe.com\)](https://www.rwe.com/CMD-2023-Presentation-internet)

¹⁵⁹ Reuters, German network regulator wants higher returns for grid operators, June 2023 (access March 2024). Available here: <https://www.reuters.com/business/energy/german-network-regulator-wants-higher-returns-grid-operators-2023-06-07/>

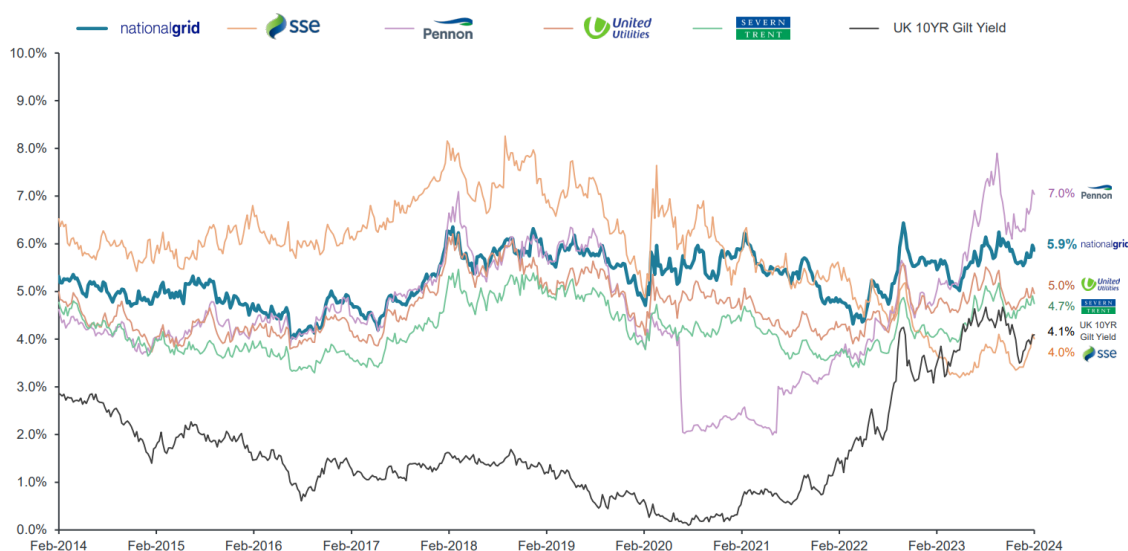
- A level of accounting earnings growth that substantially reflects asset growth and so supports a stable P/E ratio
- Stable cash characteristics to allow for debt servicing, strong and stable credit ratings and consistent metrics including EV/EBITDA and Net debt/EBITDA
- A strong balance sheet with substantial financial flexibility to absorb shocks and manage capital requirements
- Clear, predictable and appropriate **regulatory framework**, with no “shocks” (including to financial metrics) in the transition from RIIO-ET2 to RIIO-ET3
- Sufficient allowance for the **cost of issuing new capital**

These features are discussed further below and, in relation to credit ratings, in our response to FQ13. We note that, for the avoidance of doubt, any quantitative measure is assessed on the basis of the notional company.

Dividend yield: Dividends are an important part of the investor proposition offered by utility companies and predictable earnings supporting a reliable, predictable and material dividend pay-out is an important part of the overall return delivered to investors. Any historical data used to assess cost of equity for these companies will reflect a material level of dividend yield in their investor returns, and any move away from that proposition would be expected to result in a material increase in perceived risk and required returns.

For evidence in relation to dividend yield, Ofgem should consider the yield offered by other UK public regulated utilities, including water companies, National Grid and SSE. This would indicate that a yield in the middle of the range 3.5% to 7% would be appropriate, with the midpoint of that range being around 5% (see Figure 2 below), in line with the assumption over RIIO-ET1. In addition, the increase in market interest rates since the start of RIIO-ET2 will place increased focus on the level of cash paid out as dividend compared to the cash returns available from alternative forms of investment. Yields on 20-year UK government gilts are currently above 4%. Overall, the RIIO-ET2 assumption of a 3% dividend yield is inadequate and should be increased in RIIO-ET3.

Figure 2: dividend yield of publicly listed UK regulated utilities



Source: Factset, advisors

Other metrics: For evidence in relation to other key metrics utilised by equity investors, Ofgem should consider reports from equity analysts, key metrics used by data providers and credit rating agencies, and the metrics highlighted by the companies themselves when publishing their financial results.

From a review of 36 recent reports from 14 sell side equity analysts covering National Grid, there are seven metrics that are calculated by all of the analysts in their assessment of the company. These metrics are:

- Earnings per share (EPS)
- EPS growth

- Price/Earnings ratio (P/E)
- Enterprise value/EBITDA (EV/EBITDA)
- RAV growth or capex growth
- Dividend per share
- Dividend Yield

86% of analysts also include Net debt/EBITDA and credit rating metric calculations and forecasts in their analysis.

Investors in National Grid¹⁶⁰ are geographically diverse and hence operate within a global investment universe; >60% of National Grid plc equity investors are based outside the UK.¹⁶¹ To maximise the attractiveness of an investment proposition not only domestically but also worldwide, it is important to consider widely reported metrics.

The consistent use of Price/Earnings (P/E), Enterprise Value (EV)/EBITDA and Net Debt to EBITDA metrics in this evidence highlights the importance of accounting IFRS earnings and EBITDA measures, both in absolute terms and, in particular, the profile over time of these metrics. It is key to the investability of NGET that the regulated assets that investors are being asked to fund grow at a rate aligned with the growth in the value of the company. If that is not the case, then total shareholder return will be suppressed and alternative investments will likely be preferred.

To support a clear, simple, compelling investment narrative, that asset growth will translate into growth in equity and enterprise value, then accounting earnings and EBITDA should also grow in line with asset growth. This provides a clear signal that asset growth is translating into growth in cash and earnings generation which will support an attractive and sustainable dividend policy. It therefore gives the strongest opportunity for the asset growth delivered to translate into growth in enterprise value. Without this relationship, NGET could experience a declining RAV/earnings ratio (equivalent to a declining P/E ratio) and weakening RAV/EBITDA and net debt/EBITDA ratios, where other competing investments are exhibiting more stable or improving characteristics. This outcome would place NGET at a disadvantage when attempting to demonstrate the value of its additional investment programme to investors and to compete for the capital required to fund that programme, at the very time where access to additional equity financing is more critical than it has ever been.

Investors will also place value on credit ratings and financial flexibility for a company with a large investment programme and a significant need for capital. This point is evidenced by the emphasis placed by all companies (and most commentators) on their credit ratings when reporting their existing and expected financial positions. It is critical that any test of investability measures the key credit rating metrics that are used by all of the main rating agencies and delivers metrics that will allow the notional companies to maintain strong investment grade ratings with all of those agencies.

To deliver an investable outcome, the focus on credit ratings also requires targeting a comfortable level of headroom on credit metrics and so maintain the ability to temporarily utilise increased leverage as a source of financing without risking downgrades to credit ratings. This should include testing the regulatory outcome for scenarios where notional equity injections are delayed and ensuring that there is a sufficient buffer within the target ratings.

Framework:

Underpinning all these investability measures is the assumption that investors will regard the RIIO-ET3 price control as a clear, predictable regulatory regime delivering acceptable levels of achievable financial performance for the companies. This is evidenced by references to the value of the UK regulatory framework in publications by equity and debt sell-side analysts; for example, Deutsche Bank¹⁶² list regulatory intervention as stock specific risk for National Grid. This is also evidenced by the weighting placed on the regulatory framework by credit rating agencies in setting credit ratings; eg Moody's place 40% weighting on regulatory environment, including 15% weighting on stability and predictability of the regulatory regime.¹⁶³ A

¹⁶⁰ This refers to ultimate shareholders rather than NGET specifically.

¹⁶¹ Analysis as of September 2023

¹⁶² Deutsche Bank, Research, 2024 Outlook, 15/1/24; provided as evidence to Ofgem

¹⁶³ Moodys, Rating Methodology for Regulated Electric and Gas Networks, April 2022, available here: <https://ratings.moodys.com/api/rmc-documents/386754>

key factor in this assessment is to avoid “shocks” in the transition from RIIO-ET2 to RIIO-ET3 and to provide a stable progression of financial, financeability and investability metrics between RIIO-ET2 and RIIO-ET3.

Cost of issuing new capital:

As noted, RIIO-ET3 is expected to include a significant level of equity injections into the NGET notional company to support the increased investment programme and maintain an appropriate level of leverage. It will be important that the cost associated with raising new equity is adequately reflected in the allowances for RIIO-ET3.

The costs of raising new debt financing are considered separately in the response to FQ1-5.

Costs of raising new equity will include direct external costs (e.g. underwriting fees, legal and bank fees, listing fees) and direct internal costs. These direct costs are substantial in their own right. Previous price controls have included an allowance for the direct costs of raising new equity equal to 5% of the equity raised. Evidence presented at previous price control discussions (e.g. evidence presented by SGN for the RIIO-2 process¹⁶⁴) has supported an allowance of approximately this level for direct external costs for equity raises by UK companies of medium size. This continues to be supported by similar evidence from more recent issues.¹⁶⁵

Importantly, while they support a total direct cost allowance of around 5%, these previous equity issuance cost assessments have ignored the timing and practicalities of material levels of equity issuance and any associated “equity cost of carry”. This is an important omission, and one that should be corrected, particularly where large levels of new notional equity injections are expected to be required over a price control period.

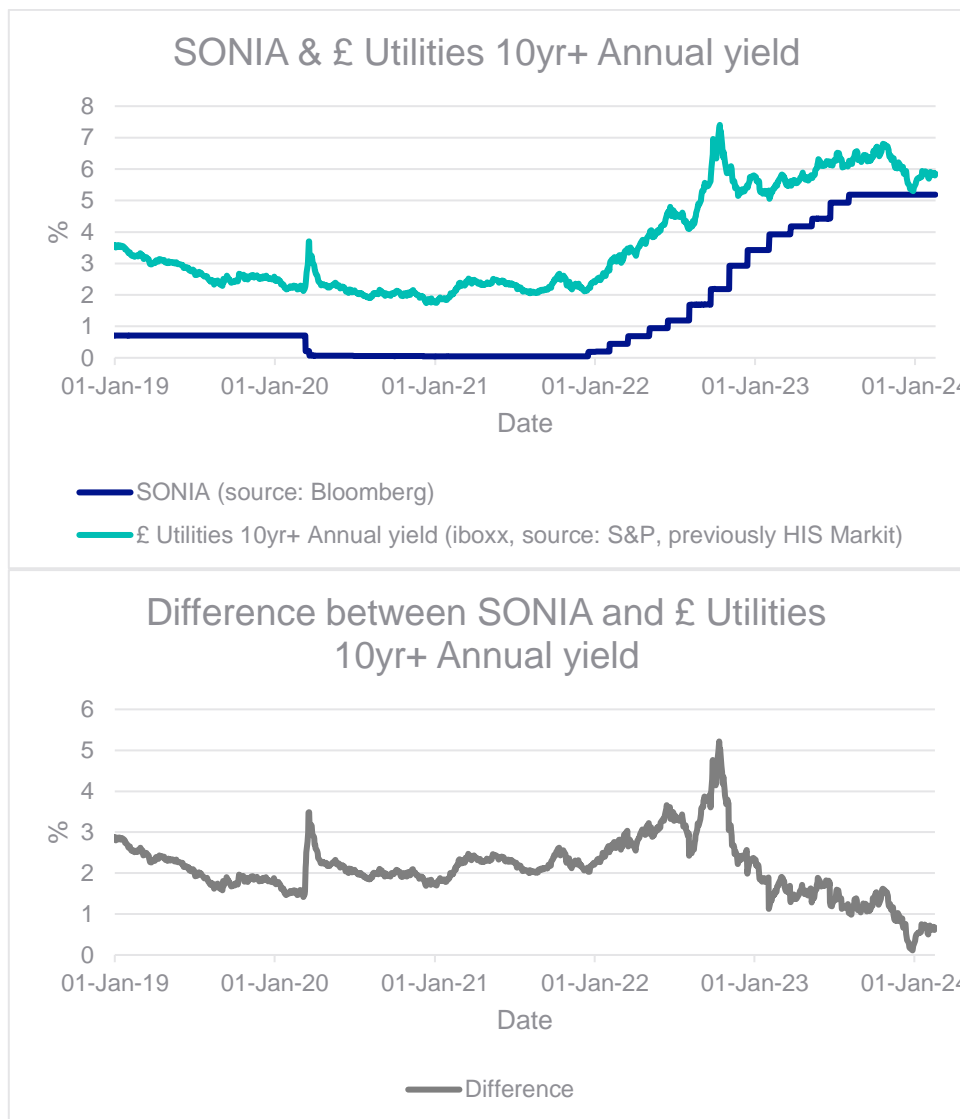
When equity is raised, it will not usually be able to be incorporated into any liquidity assessments as the receipt of proceeds is not sufficiently certain until the equity raise transaction is announced. It will therefore not be possible to simply issue more short-term debt in the run up to the equity raise and delay long term debt issuance in anticipation of cash inflows from an equity raise. This will therefore give rise to a cost of carry associated with holding cash for a period which increases the overall interest rate on net debt compared to Ofgem’s debt cost allowance.

To measure the cost of carry, we use SONIA as a measure of cost of short-term debt and £utilities 10+ annual yield as a measure of long term debt. Whilst LIBOR was the relevant benchmark during the 2010s rather than SONIA, the difference generally has not been material. Figure 3 shows the difference between overnight SONIA and £ utilities 10 year+ annual yield, in %, since 2019. Based on the average difference since 2019, the cost differential between low risk, short term, deposits and long-term debt for a regulated utility company would be expected to be around 200bps, with this cost of carry potentially lasting for an extended period depending upon the level of cash raised compared to the total annual cash requirement of the company.

Figure 3: SONIA & £ utilities 10 year+ annual yield, in % and difference in yield between SONIA & £ utilities 10 year+ annual yield, in %

¹⁶⁴ SGN, RIIO GD2 Business Plan Appendix (Financeability), December 2019, page 77

¹⁶⁵ Appendix FQ14: “Rights issues have direct issuance costs”



The cash from an equity raise can, alternatively, be used in liability management (i.e. buying back existing debt) which would generally deliver a better economic outcome than simply holding cash on the balance sheet until it is used to fund maturing debt or other business cash needs. However, a liability management exercise also attracts transaction costs and other leakage. As a result, any approach will result in a cost that would be expected to be between 1% and 2% of the level of equity raised.

The major component of the equity cost of carry will arise when equity has to be raised materially earlier than the time at which levels of leverage or any other financial metric would otherwise breach acceptable levels. This will typically result in the company operating a lower level of leverage than the long-run assumption, potentially for several years. In these circumstances, (since the calculation of regulatory allowances is based on a constant gearing assumption) equity investors receive only a debt like return on the additional equity contributed until the actual leverage returns to the long-run assumption. While Ofgem assumed in setting the RIIO-ET2 price control that WACC is the same at different levels of long-run leverage assumption, this will not be true for temporary dips in leverage because investors will judge risk based on an expected long-run assumption. Therefore, during temporary dips in leverage, the cost of equity remains at a higher level, set based on long run gearing. This results in an increased WACC during temporary dips in leverage which would reduce equity returns without any offsetting regulatory allowance.

Companies with large equity requirements to fund an ongoing growth programme will typically raise the required equity in one transaction several years in advance of when levels of leverage or any other financial metric would otherwise breach acceptable levels. Key drivers for this are:

1. the need to provide funding certainty to support forward looking credit rating assessments; and

2. avoiding the depression of equity valuations caused by an “overhang” where investors anticipate the issuance of new equity, usually at a discount, and buy fewer shares.

This leads to the typical UK market practice of raising a larger single amount of equity upfront rather than a series of regular equity raises. The market would be expected to anticipate and price in a regular series of equity raises, leading to overhang and an increased risk and associated higher cost of equity.

The early, single transaction, funding approach was utilised by National Grid in its rights issue of 2010 and the recent, 2023, equity raise by Severn Trent. Both of those transactions were designed to provide funding certainty for at least five years ahead, subject to appropriate regulatory outcomes. Separately, credit rating agencies pay particular focus to forecast metrics up to 3 years ahead and so companies are again incentivised to raise equity early and deliver funding certainty in order to maintain credit ratings.

The equity cost of carry in these circumstances can be approximated as the difference between the required cost of equity and the allowance for debt that is recovered through the relevant price control. These parameters will vary, and so the following calculation to demonstrate the level of additional cost is provided for illustrative purposes only.

Our mid-point estimate of cost of equity in our SSMC response to FQ6 – FQ9 is 6.3% real, 8.3% nominal. Assuming a 2% real risk-free rate (broadly consistent with current risk free rate) and a 2% long-run inflation level (Bank of England inflation target), with 25% corporation tax rate, this implies post-tax nominal cost of debt allowance of 3.0%. This cost of carry of 530bps on a reducing balance of “excess equity” would result in a requirement for an additional one-off equity cost of carry allowance of between 7.95% and 13.25% of the amount of new equity raised based on raising equity between 3 and 5 years ahead of the expected metric breach (calculated at cost of carry in basis points multiplied by the period in years, then divided by 2, as the equity gradually transitions from not being used to being fully used).

If Ofgem do not allow this additional “equity cost of carry” upfront cost in full, it will require other adjustments to the price control in order to allow the notional companies to avoid this cost. This would include adjusting the tax clawback mechanism to reference the average leverage over a price control period rather than that applying in any single year. It will also require adjustments to assessment of financeability. Without a recognition of an equity carry cost, financeability testing would have to be adjusted to ensure that, at any point during the price control period, acceptable credit metrics can be delivered over a forward-looking period of 5 years without assuming **any** injection of new equity capital occurs during that forward period. In periods of higher investment, when leverage would naturally increase without the injection of new equity, this will mean that companies should be able to deliver acceptable rating metrics at leverage levels above the notional level assumed by Ofgem. This would reduce the need for companies to raise equity early, although it is still likely that some equity cost of carry will apply. This will also require looking beyond RIIO-ET3 into RIIO-ET4, helping to set a more appropriate long term financial frame.

Overall, in addition to an allowance for the direct costs of equity issuance, an equity issuance cost allowance of 100-200bps for a cash cost of carry and an additional “equity cost of carry” allowance for reduced leverage should be applied to any equity issuance. The additional allowance for reduced leverage should be based on the parameters prevailing in the price control at the time.

Financial resilience

Key messages:

- We are supportive of the principles that Ofgem aims to achieve via by the proposed changes to the financial resilience measures. We do however note that these measures are not 'cost free' and implementation will require careful calibration of both input assumptions and other aspects of the price control.
- We are not supportive of any further measures than the three proposals in SSMC regarding financial resilience (i.e. the requirement to maintain more than one investment grade credit rating, amending the dividend lock-up trigger to be the earlier of reaching BBB- with negative watch/outlook and 80% regulatory gearing, and extending the timeline for board certification of adequacy of resources to the entire price control or a minimum of three years ahead).
- We remain opposed to regulatory interference in companies' capital structure and financial decisions, and reiterate the core regulatory principle that these are decisions for shareholders

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?

We are supportive of the principles of the proposed measures¹⁶⁶ and recognise the importance of ensuring the sector is financially resilient. We also recognise and support the important regulatory principle that financial decisions relating to capital structure, or any associated considerations (such as dividends), are a matter for shareholders.¹⁶⁷ Shareholders bear the risk of financial decisions, and benefit from any reward, with the regulatory framework ensuring customers are not harmed through financial decisions which result in loss over and above that which would be experienced by the notionally structured company.

The measures proposed appear to represent an extension of existing measures rather than new proposals and do not, in our view, infringe on core regulatory principles. In the round, the financial resilience measures proposed in the SSMC provide a degree of additional protection to consumers without significant associated costs or additional restrictions to investors, and consequently are supportable.

Whilst overall the proposals are supportable in principle (subject to the qualifications set out below), implementation of the measures will require a degree of calibration to other elements of the price control including financeability testing. We address each of the proposed measures in turn.

Ofgem Proposal 1: Amend the licence condition to “require” licensees to maintain more than one investment grade rating rather than “use reasonable endeavours” or “all appropriate steps”.

We agree with Ofgem that looking for companies to obtain two or more credit ratings is consistent with the usual practice of regulated networks and with the approach of other UK Regulated sectors, such as water.

However, the obtaining and ongoing provision of a credit rating is subject to contractual agreements with a limited number of third parties and the level of ratings awarded are subject to methodological changes and impacts that may be outside of the control of the companies. We do not support amending licence conditions to “require” licensees to maintain more than one investment grade rating but rather supports retaining the existing “reasonable endeavours” obligation. In practice, the requirement for credit ratings will be driven by the market, given the scale of the debt issuance programme and existing debt portfolio, and maintaining at least two credit ratings will likely be required to achieve efficient debt pricing.

If Ofgem implements an additional dividend lock-up trigger based on leverage, this will provide an additional level of protection and will further reduce the need to amend the language in the licence to “require” more than one investment grade credit rating.

¹⁶⁶ Except where specifically asked in FQ18, we do not comment or express a position here on any potential RIG changes and will respond to the necessary consultation if and when appropriate.

¹⁶⁷ RII0-3 SSMC (Finance Annex), para. 1.12: “We maintain the view that we expect companies to manage their own financial risks and for shareholders to directly gain or lose as a consequence of their choices”.

For this measure to be effective and appropriately and fairly implemented, Ofgem will need to adjust and calibrate other areas of the price control. Primarily, these are:

Cost Allowances: The additional cost of maintaining an additional credit rating should be remunerated either through a specific additional cost allowance or through an additional bps allowance on the allowed cost of debt. This latter approach is likely to be more consistent as larger debt issuance programmes are likely to attract larger absolute levels of rating agency fees. An additional allowance for credit rating costs will be included within NGET's RIIO-ET3 business plan.

Financeability: We believe that, in all circumstances, financeability should be tested by ensuring that the price control enables companies to meet acceptable levels for the metrics used by all major credit rating agencies. An expectation that companies will maintain at least two investment grade credit ratings further supports this position. Ofgem must therefore ensure that the price control enables companies to maintain acceptable investment grade credit ratings for the notional company from at least two agencies. This represents a development from the approach used in RIIO-ET2, where financeability was tested primarily using an AICR metric (one of Moody's primary metrics) and then considered (rather than tested) financial ratios used by other agencies such as S&P (such as FFO/net debt) and Fitch. There is no guarantee that an investment grade credit rating at Moody's guarantees an investment grade credit rating at other agencies. Without appropriate adjustments to financeability testing, there would be a risk that the notional company holds a credit rating in accordance with Ofgem's intentions which has not been robustly tested for financeability.

Finally, Ofgem should review the appropriate definition(s) of "issuer credit rating" to ensure that the appropriate rating from each rating agency is being targeted. The key ratings that debt investors will focus on will be the senior unsecured debt ratings which are important to their decisions to lend and therefore to the financeability assessment. We note in particular that for utility companies the Fitch "Issuer Default Rating" will typically be a notch lower than the senior unsecured rating, and may not be the most appropriate measure to target. This is another reason not to change the language in the licence to "requiring" a specific rating, where definitional issues could lead to a breach of licence where no financial resilience issues exist.

Ofgem Proposal 2: Amend the dividend lock-up trigger to be the earlier of reaching BBB- with a negative watch/outlook and 80% regulatory gearing

We are supportive of including a reference to a specific leverage level within the dividend lock-up trigger and agrees with the principal that very significantly elevated levels of gearing require additional regulatory scrutiny for regulated companies. Should gearing reach these significantly high levels, we consider that it is appropriate that the dividend lock-up acts to restrict distributions subject to further engagement with Ofgem. In practice, we have typically operated at levels of leverage consistent with the assumptions made when setting price controls for the notional company.

Whilst we do not dismiss 80% as inappropriate, we do query the rationale for why Ofgem has chosen this as the threshold. It is unclear why Ofgem's analysis considers this gearing trigger point any more appropriate than any other threshold. We note the following gearing thresholds referenced by Moody's for GB regulated energy network utilities with non-structured financing:

Moody's gearing thresholds for GB regulated energy networks

A3	<68%
Baa1	<75%
Baa2	<85%

Under this assessment, a gearing level of 80% would be consistent with a Baa2, rather than the c 90% implied from extrapolation as being consistent with the mid to lower end of the minimum Baa3 rating specified in the licence. It is possible that a company could hold a solid Baa2 rating with 80% gearing. Setting a trigger at a level of 80% could, therefore, potentially restrict a company from operating at rating levels which would not otherwise trigger a dividend lock-up. We do recognise that the rating level does not rely solely on measures of leverage and that interest cover ratios and other metrics would also have to be above agency thresholds in order to maintain a Baa2 rating where gearing is at or above 80%.

Companies have historically been free to choose their own capital structures as long as they comply with the requirements of the financial ring-fence and other conditions of the licence that ensure financial resilience.

Placing materially tighter restrictions on that financing flexibility may create additional perceptions of risk for equity investors resulting in an increase in required return on equity.

If Ofgem does choose to introduce a gearing threshold trigger, it should demonstrate how, and why, the threshold has been determined. In order for regulatory measures to be robust and consistent with regulatory principles, the rationale as to why proposed measures are superior to alternatives (in this case, alternative thresholds) must be clearly defined. As the proposals stand, there is no transparency for stakeholders on how Ofgem proposes to set the gearing threshold trigger (and therefore on the basis on which it may be amended in future), which does not meet Ofgem's duty to have regard to the standards of best regulatory practice, including in particular transparency.

Ofgem Proposal 3: Amend the Availability of Resources requirement for board certification to require that the licensee states that, based on agreed assumptions, it has sufficient financial resources to cover the entire price control period or a minimum of three years ahead

We are conditionally supportive of this measure, subject to clarification on the proposed definition of 'agreed assumptions' and providing that this will not place an additional level of financial burden on companies that is not being adequately remunerated through the price control financial package.

We are not opposed to providing additional information and agree in principle that measures which enable Ofgem to interpret early warning signs are beneficial to consumers. It is imperative, though, that the value provided (to Ofgem and consumers) by any additional reporting requirement is appropriately weighted against the resource requirement to produce and quality assure the required information. Extending the adequacy of resources certificate to five years may allow a longer-term view of a licensee's financial position but will require a large number of significant assumptions which may reduce the value of reporting, particularly at longer time horizons. We note that Ofgem recognises this in the SSMC and refers to 'agreed assumptions', however these are likely to be broad, reducing the value of the reporting requirement in acting as an 'early warning' sign. It is additionally unclear whether assumptions i) are agreed by company boards only or ii) require Ofgem's approval. The latter would require clarification on several points of implementation and would raise interesting issues of accountability if company Boards and Ofgem have divergent views on how a company should be financed. We are of the view that upfront guidelines for the 5 years of high level 'Ofgem assumptions' could work, but a process that required each company to bilaterally agree these assumptions each year prior to paying a dividend would not be workable or desirable.

The key assumption which is likely to determine the usefulness of extending the Availability of Resources (AoR) certificate concerns committed and uncommitted sources of financing. For a short time horizon, this presents few practical problems given that expected financing requirements are typically covered by committed borrowing facilities and/or available cash one to two years ahead. However, for longer-horizons, this would require consideration of two options. The first is to assume that new debt (and potentially equity) financing can be raised to meet the cash requirements of the business. This is broadly in line with current licence wording which states 'the licensee's directors have a reasonable expectation that the licensee will have sufficient financial resources and financial facilities available'¹⁶⁸ (emphasis added). This would, in reality, be little different from the provision of cashflow and treasury forecasts which underpin the business plan. The second option is to assume that only committed financing is available to the company for the next 3-5 years. This is not realistic, and the current financial framework does not compensate companies sufficiently to maintain such a high level of committed financing facilities. This approach could require significant additional action from, and costs to, companies which would have to be borne by customers in order to meet the availability of resources test, undermining any value the measure brings. We acknowledge that part of this time horizon extension is for dividend decisions to be considered on a long-term basis. However, we note that: i) directors do not consider dividends in isolation; and ii) if new financing is assumed to be available, then the ability to pay dividends is likely to be supported. We confirm that we are not opposed to this measure if implemented appropriately, but we note that the assumptions must be carefully calibrated. Ofgem should provide further clarity on the ultimate aim of this reporting requirement in order to ensure that the proposed approach actually serves to protect the interests of consumers.

FQ16. Are there better ways to protect against excessive leverage and financial risks, in particular leverage via acquisition finance, by utilising existing powers rather than imposing new requirements in the licence?

¹⁶⁸ Condition E8, Transmission Licence Standard Conditions, Ofgem, April 2023

We consider that the existing suite of measures, as detailed by Ofgem in the SSMC in detail, are sufficient to protect financial resilience of the operating company. We do not consider that there is a newly identified financial resilience ‘problem’ in relation to excessive leverage (whether acquisition finance or otherwise) which requires new regulatory intervention to fix.¹⁶⁹

Existing measures act both individually and in tandem to ensure leverage is maintained at a sustainable level and that cash is maintained in the licensee if necessary at times of financial stress, and in many cases measures become active before financial stress is experienced or provide early warning signs. The price control also includes other incentive-like measures which encourage management to maintain leverage at the notional company level, principally the tax-clawback mechanism which reduces the tax benefits a company may experience from higher gearing. Taken in the round, the existing suite prevents excessively high leverage in the sector and we consider that only carefully targeted improvements – such as the measures proposed in FQ15 (i.e. the requirement to maintain more than one investment grade credit rating, amending the dividend lock-up trigger to be the earlier of reaching BBB- with negative watch/outlook and 80% regulatory gearing, and extending the timeline for board certification of adequacy of resources to the entire price control or a minimum of three years ahead) are appropriate to ensure this position is maintained and strengthened without adverse consequences.

The imposition of new measures which are further reaching than the current financial resilience protections may mean Ofgem risks regulating the financial structures of regulated businesses, which is contrary to the principles of existing UK regulation and something which Ofgem has always considered it should not do.¹⁷⁰ Any new measures should also demonstrate a clear benefit to consumers, and, in our view, the consumer benefit of new measures has not been established. Indeed, perversely any new measures which limit management’s autonomy to operate a capital structure of their own choice or places additional constraints on the flow of dividends could be harmful to financial resilience rather than helpful.¹⁷¹ This is driven by the perception of additional constraints that shareholders may face, that could deter the relative attractiveness of investment at a time when investability is critical.

This context is especially relevant as RIIO-ET3 will represent a significant evolution from RIIO-ET2. This is driven by the expected increase in totex spend in RIIO-ET3 for electricity transmission which will likely require significant equity injections into the notional company.¹⁷² It is in the interests of consumers that the proposed capex programme is completed efficiently, properly and on time. To do so requires access to appropriate sources of capital. If the company is unable to attract capital, then ultimately it is the welfare of consumers which is harmed as the transition to net-zero is slowed or its delivery threatened. Restrictions on dividends or on capital structures would likely deter investors and result in increased difficulty for companies to attract the equity capital needed to deliver the necessary large-scale investment. It is imperative that the regulatory regime does not: i) undermine investor confidence; or ii) make it harder to attract equity. Indeed, this concept is recognised by Ofgem more broadly (and addressed by NGET) in FQ14 on investability. The imposition of stringent or punitive financial resilience measures is likely to reduce investability, not increase it; which would in fact put financial resilience at risk

Finally, NGET believes that Ofgem’s existing abilities to gather information and engage directly with companies where financial resilience may be a concern allow a targeted approach that can avoid the imposition of overly restrictive requirements on companies where financial resilience concerns do not exist. In those circumstances, further financial resilience requirements should not be a blanket obligation on all companies but should instead only be implemented where the regulator has specific, well-founded concerns at a company level. This will avoid companies with solid credit ratings and gearing close to or lower than the notional levels currently used by Ofgem being exposed to additional constraints when there is limited, if any, consumer benefit to doing so. Such an approach would be more in keeping with Ofgem’s duty under s. 3A(5A) Electricity Act 1989 to have regard to the principle that regulatory activity should be “proportionate” and “targeted only at cases in which action is needed”.

FQ17. For the SSMC we have not proposed dividend controls or dividend policy requirements. How should we think about protections to ensure that leverage at MidCo and/or HoldCo does not become

¹⁶⁹ Though we reiterate that we do not oppose the measures Ofgem has proposed dependent on implementation, which are considered sensible extensions or alterations to current financial resilience measures rather than distinctly new measures

¹⁷⁰ RIIO-3 SSMC (Finance Annex), paragraph 1.12

¹⁷¹ See FQ14 on the subject of Investability

¹⁷² RIIO-3 SSMC (Finance Annex), paragraph 5.9

disproportionately influential in decision making at the licensee with the potential for negative outcomes for consumers?

We consider that the answers to FQ16 and FQ17 should be read in conjunction with each other, noting that many points raised in the above question are also relevant here.

We recognise that Ofgem is concerned about the impact on consumers should the boards of licensees consider debt obligations at the holding company level when determining whether a dividend should be paid. We note that the boards of licensees are already, both under company law and under their licences (SLC B7 for ET Licensees), required to consider whether paying a dividend out of the licensee is appropriate and in the case of the latter, licensees also need to satisfy themselves that it would not jeopardise their compliance with the regulatory ringfence licence conditions. There is no distinction or alteration, nor should there be, as to management's legal and regulatory obligations as a result of debt being owed by a legally distinct company. As covered in the response to FQ16, there are already a number of measures in place to protect cash leaking from the licensee in the event of financial distress, which apply long before any actual distress event occurs.

In our view, if the already stringent measures in place do not prevent capital leaving the appointee, then the appointee is financially resilient and the ultimate destination of that capital, whether it be to equity shareholders or to service holding company debt, is immaterial. The purpose of dividends in the ordinary course of business is not a matter for the regulator. It is not accurate to say that holding company debt creates additional influence over and above dividend payments to equity shareholders. It is true that debt payments are contractually obligated, and equity dividend payments are not. However, certain equity investors, such as pension funds, rely on a regular stream of dividends as part of their investment proposition, or the investment would not meet their criteria. Such expectations mean that from the point of view of management, there is limited (if any) distinction, which again points to the fact that the ultimate destination of the dividends is not a matter over which regulatory intervention is necessary nor appropriate.

More broadly, this is a question of regulation of capital structures, which is conceptually something Ofgem has been historically against.¹⁷³ Further, we also note that dividend decisions are complex given the need to consider multiple years' performance and financing requirements, and cannot be easily isolated into annual splits. It is also necessary to consider the investor point of view. For investors there is generally only downside to any dividend-limiting proposition. If any constraint is to carry value in protecting financial resilience, there must be, by definition, a non-zero probability such constraint will be activated and consequently investors will find it harder (or not possible) to draw capital from the business. In contrast, there is no upside to these restrictions for the business, above and beyond the status quo. Hence by definition, by imposing further dividend restrictions, Ofgem will make it less attractive to invest in network companies.

Management autonomy on financing decisions should result in the company being able to achieve the lowest all-in cost of capital, which is ultimately efficient for customers. Restrictions on management teams' discretion may increase the cost of capital, all else equal, given that investors may consider that a requirement for management teams to consider other factors requires additional risk premia. Changes to a regulator's past unwillingness to interfere in the group structure and financing decisions of network companies will raise concerns about the extent of possible future interference and increase the cost of capital. This would be particularly ill-advised at a time when investment requirements across the industry are set to increase significantly to meet the future challenge of Net Zero. Restricting management teams' discretion by introducing dividend controls or dividend policy requirements would therefore not be in consumers' interests.

FQ18. Is there merit in amending the RFPR RIGs to include requirements for Licensees to undertake stress-testing, and to provide the results to Ofgem, as in the Retail sector and as the Prudential Regulatory Authority / Bank of England does for banks, to test for financial resilience?

We are not opposed to additional reporting requirements nor the concept of stress testing as a matter of principle, but we are unable to definitively answer this question as the level of detail provided by Ofgem is insufficient to enable an informed response.

¹⁷³ RIIO-3 SSMC (Finance Annex), paragraph 1.12: "We maintain the view that we expect companies to manage their own financial risks and for shareholders to directly gain or lose as a consequence of their choices"

The ultimate purpose of the stress testing referred to in this question is unclear, as well as what the key indicators of resilience are, and how they would be measured and calibrated. It is further unclear what corrective action Ofgem would seek to take if the appointee 'fails' the stress test. In the retail market, Ofgem notes that they will consider if 'follow-up actions are required to further test or to strengthen their financial resilience'¹⁷⁴ but it is unclear how this translates into tangible actions in transmission, given: (i) regulatory discretion does not extend to dictating a specific capital structure; and (ii) the SSMC does not propose dividend restrictions.

It is unclear to what extent the proposed stress testing will differ from (or to what extent it will be the same as) that undertaken as part of business plan submissions. In the SSMC Finance Annex, at 6.24, Ofgem notes "as part of company business plan submissions, we intend to again require companies to provide accompanying certifications of financeability (on notional and actual capital structure bases) for the price control period which have an appropriate level of board assurance." The time period the proposed stress testing will cover is not stated. If this is to be linked to the longer availability of resources requirement, then this should be stated.

Without this detail, it is difficult to comment meaningfully on whether the concept of stress testing is supportable. However, our broad position here is that it is unclear what the purpose of the measures would be or what benefit they bring to consumers. There are already sufficient measures in place and stress testing is already undertaken at business plan submission on the actual structure.

Whilst we are not opposed to stress testing as a concept, this should (and does) form part of financeability testing. It should also be clear what remedies Ofgem would seek if an appointee did not meet the standards, noting that the solutions in the retail market (relating to minimum capital levels) do not transpose well to transmission regulation, where it is a longstanding regulatory principle that capital structure is a matter for shareholders. Any expectation that a stress test could lead to additional actions being required means those tests create a risk of additional actions which would imply costs that consumers would ultimately have to bear. Conversely, if there is no expectation of additional actions, it is not clear what purpose stress tests would serve.

Corporation tax

Key messages:

- Aligning the tax approach in RIIO-ET3 to that used for RIIO-ED2 for retrospectively recalculating tax pool allocations will remove a forecasting variance and allow for greater alignment with HMRC tax returns. In turn this will move the tax allowance closer to a 'pass-through' type of cost and thus improve revenue forecasting accuracy
- We only see the need for such a "glide path" if notional gearing levels will be amended in RIIO-ET3. Should notional gearing levels be removed, a "glide path" approach is more favoured than a step-change
- Tax reconciliation is part of the RFPR process and therefore is subject to DAG assurance process. The need for a Board Assurance statement provides no added protection and therefore we believe it do be a redundant requirement

FQ19. Do you agree with our proposal to align the RIIO-3 tax approach with RIIO-2 and ED2 including; to maintain Option A - notional allowance with added protections; the approach to capital allowances, and "glide path"?

We agree with the proposal to align RIIO-ET3 tax approach to that used for RIIO-ED2 in terms of tax pool allocation treatment and reporting allowing for retrospective updating. We also agree with the proposal regarding glide path. We have concerns with the proposal regarding the statement on added protections over and above those included in the RIIO-ET2.

RIIO-2 Added Protections – Board Assurance Statement

¹⁷⁴ Ofgem, Action plan on retail financial resilience (15 December 2021), page 7.

We recommend the requirement for a Board assurance statement over the tax reconciliation is removed. The tax reconciliation, as part of the wider RFPR tables, is already subject to ‘DAG’ assurance processes including multiple levels of reviews and checks.

Obtaining a signed Board assurance statement requires additional time and resource without adding any further value as to the accuracy of the tax reconciliation. As such, we do not consider the Board assurance statement is necessary to ensure the accuracy of the tax reconciliation statement or is supportive of the “TAXAT” review mechanism.

RIIO- 2 Approach to Capital Allowances - Tax Pool Allocation Rates

We agree with the approach of continuing to make both allocation rates and tax rates variable values to enable updates during the price control.¹⁷⁵ However, we note that the current RIIO-ET2 PCFM guidance prevents us from amending tax pool allocation rates once charges have been set. There is no subsequent opportunity to amend these allocation rates to reflect an actual allocation of expenditure included in the relevant submitted tax return.

With the introduction of a permanent full expensing regime and an enlarged investment programme, the potential for a material tax variance to result from differences between estimated allocation rates and actual allocation rates per submitted tax returns is increased. This would also widen differences between capital allowance pool balances in the PCFM compared to the pool balances contained in the submitted tax returns locking in further timing differences in future years.

This is an important point to maintain the integrity of the PCFM and we strongly recommend that the RIIO-ET3 guidance be updated to enable allocation rates to be amended retrospectively once a relevant year’s tax return has been submitted. This would remove a forecasting variance and allow for greater alignment with HMRC tax returns and would move the tax allowance closer to a ‘pass-through’ cost.

In relation to adjustments to notional gearing levels, in principle we agree with the approach to gradually decrease notional gearing level,¹⁷⁶ however we only see the need for such a “glide path” if notional gearing levels will be amended in RIIO-ET3.

We agree that it is not necessary to pursue the Far Tax Mark certification in line with RIIO-ET2.¹⁷⁷

RIIO- 2 Approach to Capital Allowances – Full Expensing and Tax Losses

The introduction of full expensing is a material change to Licensees’ tax profiles. As such, in RIIO-ET3, it is important that the PCFM is amended:

- To ensure that full expensing is embedded into the main RIIO-ET3 PCFM calculations instead of continuing to be reflected as a separate input table; and
- To ensure the RIIO-ET3 PCFM treatment of tax losses reflects current tax legislation and the 50% restriction on the offset of carried forward losses

For the RIIO-ET3 PCFM Finance Working Group we would support Ofgem in incorporating this into the Business Plan Financial Model (BPFM) and future PCFM for RIIO-ET3, along with any consultations pertaining to changes required in the RFPR or RIGs.

FQ20. Do you agree with the proposed revision to tax clawback methodology?

We are generally in agreement with the principal of Ofgem’s proposal as the change would ensure that networks are treated equally in the calculation, regardless of whether they have index-linked debt exposure through debt or derivatives.

¹⁷⁵ RIIO-3 SSMC (Finance Annex), paragraph 7.4

¹⁷⁶ RIIO-3 SSMC (Finance Annex), paragraph 7.5

¹⁷⁷ RIIO-3 SSMC (Finance Annex), paragraph 7.6

Regulatory depreciation and economic asset lives

Key messages:

- Delivering net zero is dependent on the transition of the transmission network and ET have an unprecedented programme to deliver in RIIO-T3. The Accelerated Strategic Transmission Investment (ASTI projects) alone are bigger than the whole of RIIO-T2. Whilst the right return is critical to attract the investment required, cash measures will also be required to ensure a financeable plan for transmission operators
- We propose a reduction in assets lives for NGET which will help alleviate financeability concerns that are inherent in periods of heightened capital outlay
- In addition to supporting financeability, NGET are also observing a reduction in technical asset lives. Reasons for this include new technologies such as the increasing deployment of “intelligent” substations, characterised by an increased reliance on electronic and digital components and HVDC submarine cables, which possess an economic useful life of less than 45 years
- This change to asset lives also provides consumer benefits regarding intergenerational fairness
- We also propose a reduction in life to at least 10 years from the start of RIIO-ET3 to the “RAV differential” from the current remaining 34 years. This was a finance lever created pre RIIO-ET1 in 2011 to provide a smoothing period of 50 years for NGET for the change from 40 year asset life to 20 year asset life for assets constructed between 1991-2010 to avoid a revenue ‘cliff edge’

FQ21. GD & GT: assuming re-openers are available and there is no adjustment to the allowed WACC, how should regulatory depreciation be used to address the uncertainty around the future path for gas and perceived asset stranding risk?

We are not responding to this question

FQ22. GD & GT: what long-term path should regulatory depreciation aim to follow between 2026 and the assumed de-energisation point to promote fairness for current and future consumers? What unit metrics should this be based on? Is this resilient to the various scenarios under FES 2023?

We are not responding to this question

FQ23. GD & GT: assuming there is a relevant gas reopener for government policy, is there a need to reopen regulatory depreciation policy intra-period?

We are not responding to this question

FQ24. GD & GT: what considerations are raised by asset repurposing and how might these affect the decisions to be made on regulatory depreciation policy? What guidance is sought for the SSMD so that licensees have sufficient clarity for their business plans?

We are not responding to this question

FQ25. ET: do stakeholders consider there to be a need for amending the existing RIIO-ET2 asset life and/or profile assumptions, on either a company-specific or sector basis? If so, please set out your evidence base and potential consumer benefits and costs of changing the existing methodology.

We do consider there is a need for amending the existing RIIO-ET2 asset life assumptions due to the unique circumstances of the ET sector going forward and the unprecedented programme that needs to be delivered in RIIO-ET3. We propose a reduction in assets lives for NGET will be required and an acceleration of the “RAV differential” pot, that we explain further in this response.

Asset Lives

RIIO-ET3 will require significant investment in the network to facilitate the transition to net zero. This increase in investment will add pressure to financeability assessments and sustaining current investment grades. Asset lives policy is a key factor in determining revenue streams within the transmission networks, as revenues from this key regulatory lever provide sustainable and stable revenues to fund investments. A reduction in asset lives would offer a partial remedy to the cash challenges faced by networks during periods of heightened capital outlay.

Whilst our primary objective is to support financeability as we move into a sustained period of high capital investment, there is a technical narrative that supports a necessary reduction in asset lives for NGET. Based on NGET's evaluation of its own assets, it has been observed that under existing investment plans in RIIO-ET2, the assets being built into the transmission network are exhibiting a reduction in economic useful lives on average from the current 45-year policy.

As we move in RIIO-ET3, we forecast that the evolving technological landscape will mean NGET continues to transition towards a shorter lifespan for specific elements of transmission assets, for example, substations, over the coming decade. This shift is attributed to the increasing deployment of "intelligent" substations, characterised by an increased reliance on electronic and digital components as opposed to traditional mechanical installations. As a result, the longevity of such assets is expected to be shorter.

Furthermore, investments in the Accelerated Strategic Transmission Investment (ASTI projects) will see an increase in certain transmission assets being built, such as HVDC submarine cables. These possess an economic useful life that is shorter than the currently assigned regulatory asset life of 45 years. These factors collectively suggest a rationale for a lower assigned regulatory asset life than that assigned in RIIO-ET2.

We also note, whilst longer asset lives may yield short-term reductions in consumer bills, they impose upward pressure on future consumers, who will bear the brunt of higher returns on a higher RAV. This creates intergenerational inequality; wherein present-day consumers benefit at the expense of future generations.

The RAV differential

The RAV differential is a regulatory mechanism devised to rectify the revenue cliff-drop in 2011 stemming from pre-privatisation assets assigned a 20-year life in 1991. An adjustment to the asset life was applied to assets built from 1991-2011, this was from 40 years down to 20 years. The differences between the two calculated asset lives was £2.3bn (18/19 prices) and was smoothed over 50 years from 2011. NGET currently has the biggest RAV differential among networks, with a substantial total value yet to be recovered, estimated at approximately £1.6 billion by the end of RIIO-ET2. This will not be fully recovered until 2061 nearly 70 years later, and implies that future consumers will bear the costs of assets built in the 1990s for a period way beyond the economic life outlined in RIIO-ET2 of 45 years. A reduction in the RAV differential life would promote greater intergenerational fairness as well as address financeability challenges during this high investment period. We propose a revision to the existing 50-year smoothing period will be needed, and advocate for a transition to at least a 10-year straight-line approach commencing from the start of RIIO-ET3.

Most other networks have already had their RAV differential pot by 2026, or the amount was materially less, and a shorter smoothing period was given. This is a lever that is specific to NGET and should be explored to provide NGET with the additional cash that is required in RIIO-ET3 to support the net zero transition programme.

This adjustment will support NGET in funding its investments that are crucial for achieving net zero. It is important to note, however, that while this regulatory lever adjustment represents a significant step towards closing financeability gaps, our analysis suggests that its implementation alone may not fully resolve it and should be taken in addition to a reduction in asset lives and any other levers required to ensure a financeable plan.

Summary

By reducing asset lives from the current 45-years in RIIO-ET2, and accelerating the RAV differential, we believe this provides the best solutions to help ensure NGET has sufficient cash to meet its investment programme and helps to support the principle of aligning to economic lives where appropriate and improves intergenerational fairness for consumers. This should be taken in conjunction with any other financeability levers that may need consideration as the final plan is assessed.

FQ26. If a 'semi-nominal' cost of debt and WACC approach were to be adopted which results in an acceleration of cashflows, would this impact your responses to any of the questions above?

If a 'semi-nominal' cost of debt and WACC approach were to be adopted, and this resulted in an acceleration of cashflows, then this would reduce the need to pull the financeability levers as hard to support the significant investment programme that ET must deliver in RIIO-ET3. However, we do anticipate that we would still require some of the measures to be considered as the 'semi-nominal' change would not be

expected to close the financeability gap completely. This would still require either a reduction in asset lives for new additions or by an acceleration of the RAV differential to fully recover the balance earlier.

Return Adjustment Mechanisms (RAMs)

Key messages:

- We are supportive of retaining the existing RAMs framework as it is a valuable failsafe mechanism and protects both investors & consumers.
- We propose no amendments to the RAMs methodology with regards to modifying thresholds, rates or including financial performance. Narrower thresholds would risk damaging the incentive properties of other parts of the regulatory framework as incentives are significantly reduced once a network triggers the RAM. Broader thresholds would offer less protection to consumers and investors. Other proposed changes in the price control are such that there is no benefit to be gained from extending the scope to include financial performance.
- There may be merit in separate RAMs for 'BAU' parts of the business and specific programmes if performance from those programmes would otherwise have a disproportionate impact on performance and the RAM and could potentially weaken incentives.

FQ27. Do stakeholders have views or evidence as to why RAMs should or should not continue?

RAMs provide a valuable failsafe mechanism and should be retained as they only apply in the event that performance (positive or negative) is considered to be unacceptably high. They protect investors from excessive losses, and they protect consumers by preventing networks from earning returns that may be considered excessive.

FQ28. Do stakeholders have views or evidence as to whether the RAMs methodology should be amended, such as recalibrating the threshold or rates or including financial performance?

The methodology does not need to be amended. Narrower thresholds would risk damaging the incentive properties of other parts of the regulatory framework as incentives are significantly reduced once a network triggers the RAM. Broader thresholds would offer less protection to consumers and investors. Modifying the rates would be change for the sake of change and would give the appearance of a more complex price control rather than stability and simplicity.

Financial performance should not be included. Networks provide significant data on their debt book and cost of debt, and allowances for new debt costs are based on a relevant benchmark index. This transparency means information asymmetry is not an issue in the context of financial performance, reducing the need to include it within the scope of a RAM. Ofgem's proposals for the cost of debt (both the introduction of a RAV weighted approach, and option 1 and 2 to address the leverage effect) can be further expected to reduce the scope for significant debt performance (positive or negative). Consumers should not be expected to share the additional costs of networks with debt costs that are higher than a properly calibrated notional allowance due to their choice of financial structure.

Including financial performance would make the price control more complex. Following the inflation decision issued by Ofgem, the possibility of implementing a RAM type threshold to cap or share debt outperformance/underperformance to address the leverage effect was ruled out. It would therefore create regulatory inconsistencies and confusion to change this decision so shortly after it was made.

FQ29. Do stakeholders have views or evidence as to whether there should be separate RAMs for 'BAU' parts of the business and specific programmes, such as ASTI?

The introduction of separate RAMs would make the price control more complex. Introducing separate RAMs should therefore only be considered if it will help to 'improve' the price control elsewhere. For example, if there is concern that the ASTI programme could have a disproportionate impact on returns such that there is an increased likelihood of the RAM being triggered, there could be merit in a separate RAM to avoid that programme dominating the RAM and so potentially weakening incentives elsewhere. A programme RAM

may also allow for a more streamlined process if it can be used to avoid excessive under or over performance.

Other finance issues

FQ30. Is there a case for altering the capitalisation rate modelling approach between sectors (eg removing the multiple bucket approach for GD)?

We don't suggest a change to the current capitalisation approach between sectors.

FQ31. What are your views on retaining an ex-ante capitalisation rate for allowed totex, but reporting an outturn capitalisation rate for the purpose of calculating the totex incentive mechanism?

We support retaining the ex-ante capitalisation rates for allowed totex, consistent with RIIO-ET2 guidelines. This approach provides simplicity, requires fewer judgements, and does not add additional unpredictability into revenue projections throughout the price control period.

We are not supportive of the proposal of reporting outturn capitalisation rates for the totex incentive mechanism (TIM), as this would add a layer of complexity to the reporting and does not justify the required changes to the existing models.

The challenges we see with the proposal to report at outturn include:

- Reconciling actuals, particularly with reopeners, and the subjective nature of the true-up process, will introduce administrative burdens.
- Uncertainties regarding the magnitude of benefits derived from this approach. Ofgem acknowledge in the SSMC that the complexity of the RIIO-2 reporting process will continue in RIIO-3,¹⁷⁸ and this would be increased further in RIIO-3 by the additional layer of complexity.

It is also important to note that the use of outturn capitalisation rates not only influences revenues through fast money, but also impacts the Regulatory Asset Value (RAV). This subsequently impacts depreciation, return revenues, and financeability metrics. Introducing additional uncertainty into a network's performance, subject to retrospective adjustments, may cause concern among stakeholders, who may perceive this change as introducing unnecessary additional risk.

FQ32. Are there any reasons why the RIIO-3 approach to directly remunerated services should differ from RIIO-2?

We are generally supportive of the current treatment of DRS in RIIO-ET2, however we would like Ofgem to consider allowing networks to keep a proportion of profit for DRS services where we do not have a statutory obligation to complete the works. The ability to share profits would give NGET and other licensees the incentive to participate further in these services and generate more revenue that can be shared with consumers.

FQ33. Do stakeholders have any reasons or evidence to suggest more directly remunerated service categories are necessary?

We see no reason to add additional categories if the miscellaneous category is still included.

FQ34. Do stakeholders have views or evidence in support of or objection to treating all asset disposals as fast money? Would the existing or alternative approaches have greater merit?

We are generally supportive of Ofgem's proposal to treat disposal proceeds as fast money. We understand this perspective given networks will receive full sales proceeds at the point of sale and disposals often relate to older assets. Based on the level of past and current disposals, we would not expect this to cause any financial resilience issues.

We would like clarity from Ofgem on how it plans to deduct disposals from fast money in the PCFM as this could create additional complexity. In particular, as disposals would be treated as fast money, our preference is for the tax allowance to be fully recognised in the year of disposal rather than subject to tax pool allocations.

¹⁷⁸ RIIO-3 SSMC (Finance Annex), paragraph 10.8

In relation to this question, we would like to ensure the calculation and treatment of disposal proceeds is included in the RIGs as this is currently missing in RIIO-ET2, contrary to point 10.23 of the SSMC. RRP also needs updating to include a table to capture disposals. Currently for RIIO-ET2, we are including proceeds as an adjustment to totex in the working 2 tab of RRP.

FQ35. Do stakeholders have views or evidence as to what reporting information should be provided to Ofgem (under the RPFRs or other forms) to ensure objective identifiability of repurposed assets and cost data remains appropriately like-for-like?

NGET is not impacted by the Hydrogen Transport Business Model and therefore this question is not relevant.

FQ36. Do you consider that the existing reporting requirements on executive pay/remuneration, dividends and corporate governance previously introduced for RIIO-2 price controls remain appropriate in helping demonstrate the legitimacy and transparency of company performance?

We consider the existing reporting requirements on executive pay/remuneration, dividends and corporate governance sufficient and appropriate.

We recommend keeping the reporting requirements to just the Licensee / Network level rather than introducing reporting requirements for Midco., Holdco., or other. All other tables and requirements of the RFPR are only at Licensee / Network level and we do not recommend increasing the complexity or reporting requirements any further within this pack.

We welcome the opportunity to consult on RFPR RIGs however we point out that that Ofgem's suggestion of a consultation process for corporate governance reporting suggests at least a minded to position in this area of the SSMC has already been made before receiving stakeholder responses to the SSMC.

Citing the Citizens Advice document in SSMC Finance Annex point 10.32 the National Grid profit figure quoted comes from 2016/17 annual reporting accounts at a time when Gas Transmission and Gas Distribution were part of the combined UK business. This report is also for RIIO-1 and as such does not reflect the more stringent financial and performance conditions of RIIO-2.

Regarding matters of transparency and disclosure of company performance, this Citizens Advice report does not conclude that more detail and transparency is required pertaining to executive pay/remuneration, dividends or corporate governance.

FQ37. Do you have any other suggestions for clarifying or strengthening the reporting requirements with regard to executive pay/remuneration, dividends or corporate governance?

We do not have any suggestions for clarifying or strengthening the reporting requirements with regards to executive pay/remuneration, dividends or corporate governance. However, we would be supportive of working with Ofgem to help improve the consistency in how the various networks report against the current obligations at the licensee level. We note that Ofgem are consulting on this as part of an RFPR consultation.

FQ38. Do you have any suggestions on how to improve and future-proof the price control financial model, or use cases it could better support?

We appreciate Ofgem setting up a specific Finance Working Group for working collaboratively and consulting on future changes to the PCFM, Handbook, Guidance documents, or any other supporting working files.

We appreciate the developments made in the RIIO-ET2 PCFM compared to RIIO-1 and find it a lot more user friendly as a tool for discussing future allowed revenues, and sensitivities on these, with our stakeholders/customers and hope this more end-to-end approach and self-contained model can continue for RIIO-ET3. Ofgem would need to demonstrate the value, usability, and benefit of disassembling the PCFM from its current format and introducing more formula or algebraic script.

Although under FSNR the ASTI program of work is encapsulated under the ET Licence, a future PCFM should be dynamic enough to incorporate any new frameworks, this would help with future proofing the model. Ideally, for NGET, it would be equivalent to, $\text{NGET underlying business} + \text{ASTI} = \text{NGET total}$, but be able to toggle functions to be any component parts in isolation or just the combined NGET total. The equivalent example to this in Gas is ring-fencing performance, revenue, and RAV for Hydrogen based activities. This would then make imposing new bespoke variables such as depreciation policy, required

returns, capitalisation rates, etc. easier. It would also provide greater transparency for investors and other external stakeholders.

The work done to-date in the proposed RIIO-ET3 PCFM for depreciation modelling and splitting out the variable values in the input tab is beneficial for introducing more flexibility into the RIIO-ET3 PCFM and potentially enabling it to reach forwarding into future price controls. Coupled with the thought process around PCFM digitisation, Ofgem needs to consider how the new Input tab in the PCFM will work in conjunction with the RRP tables, in particular the PCFM Summary Input tab in order to make the overall process as user friendly as possible.

Currently there is no impact on revenue due to fixed capitalisation rates if allowances or actual spend is Opex or Capex. Furthermore, there is no added value in the PCFM reporting spend in the Opex or Capex sub-categories. To improve reporting efficiencies and also aid future proofing (as the naming conventions of sub-categories could change), we recommend removing at least the Opex and Capex actual totex sub-categories from the input requirements. This would then create:

Capitalisation Rate 1; Total Opex, Total Capex

Capitalisation Rate 2; Total Opex, Total Capex

This would also better align to reporting requirements in the RFPR

FQ39. What are your views on allowing licensees to self-publish the PCFM with their charging statements, rather than relying on an Ofgem publication or direction to determine allowed revenue?

In principle we have no objection to Licensees self-publishing the PCFM, provided there are clear guidelines set out in the Handbook and PCFM guidance documents. This approach of self-publication is in-line with RIIO-2 for electricity distribution.

Ofgem will still need to continue its role in the annual iteration process for dry runs and assuring the information in the PCFM.

Clarification on dates, roles and accountabilities, and materiality of accepting and implementing 'late changes' between the 'final dry run' and PCFM publication date is required, e.g. decisions around Supplier of Last Resort (SoLR).

FQ40. What are your views on applying a single time value of money in the financial model to all prior year adjustments, based on nominal WACC?

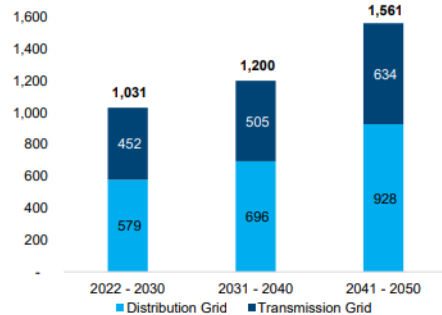
This approach standardises the PCFM and time value of money true up approach between ET & ED and therefore is acceptable. The RIGs/Handbook/Guidance documents would need to be updated and consulted on accordingly. We would require further information as to how caps/collars would work for forecasting penalties in an environment of high volatility around variable values such as inflation or changes to factors outside of Licensee control, such as when tax super deductions were introduced.

Appendix: FQ14: investability

1. Competition for capital is increasing

Energy transition will require significant investment and NGET will need to compete for capital with other investments from other countries and other sectors in the UK

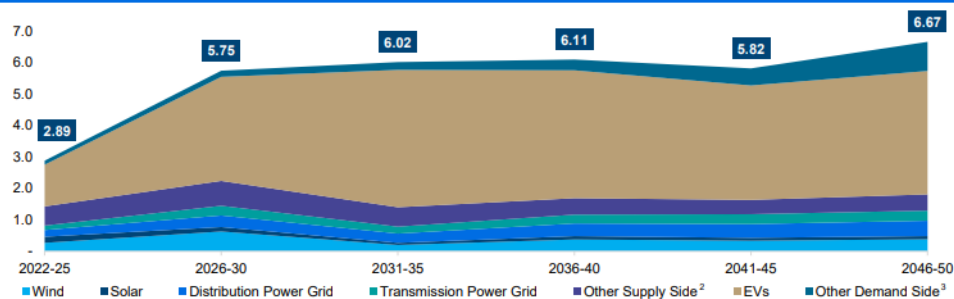
T&D Grid Investment in Europe (\$bn, real)¹



Selected Investment Plans for Transmission Grids Across Europe

Country						
Company	Terna	RED ELECTRICA DE ESPAÑA	Tennet	50hertz	amprion	TRANSNET BW
Investment Plan	€21bn over next 10 yrs	€7bn from 2021-26	€67bn over next 10yrs	€8.7bn over next 5yrs	€22.2bn from 2023-27	€10bn from 2021-35
Annual Investment	€2.1bn	€1.4bn	€6.7bn	€1.7bn	€4.4bn	€0.7bn
RAB	€16.9bn	€9.6bn	€16.0bn	€6.2bn	€6.6bn	€17.9bn
Investment / RAB	12.4%	14.6%	41.9%	27.4%	66.7%	3.9%

Forecast Energy Sector Investment in Europe (\$tn, real)¹

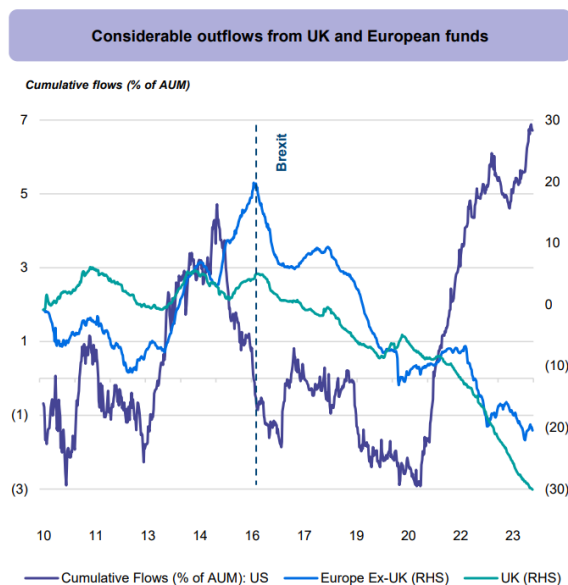


\$33tn of investments in the European energy sector are expected by 2050. The scale of this investment will mean NGET will face high competition for capital across Europe

Source: BloombergNEF New Energy Outlook Europe, press releases. Notes: BloombergNEF Net Zero Scenario in real 2021 prices. 2. Includes hydrogen, CCS, fossil fuel and other power capacity investments. 3. Includes heat pumps and industry recycling investments.

Source: Advisors

While UK and European equity funds are seeing outflows



Source: Advisors, EPFR as of 31st January 2024

2. Equity placements typically require a discount in order to incentivise investment

Precedent UK Primary Placings ⁽¹⁾					
Date	Company	Size	% of Issued Share Capital	Price L12M Prior to Raise	(Discount) / Premium to Previous Close
Sep-23	Severn Trent	£993m	15.5%	(3.1%)	(5.1%)
May-23	ASOS	£75m	15.2%	(71.8%)	0%
Mar-21	Fuller Smith & Turner	£54m	20.0%	33.8%	(4.6%)
Nov-20	Greencore	£90m	18.0%	(51.4%)	(5.7%)
Nov-20	Rank	£69m	19.9%	(60.8%)	4.3%
Sep-20	Dalata Hotel	£84m	19.9%	(37.1%)	(6.9%)
Jul-20	Countryside	£245m	16.6%	23.3%	(6.7%)
Jun-20	EasyJet	£419m	15.0%	(14.0%)	(5.0%)
Jun-20	William Hill	£224m	20.0%	(0.2%)	(7.9%)
Jun-20	Biffa	£100m	20.0%	(6.0%)	(5.0%)
Jun-20	Lancashire	£277m	19.5%	2.4%	(3.6%)
May-20	On The Beach	£67m	19.9%	(42.2%)	0.0%
May-20	Beazley	£247m	15.0%	(41.5%)	(5.0%)
May-20	Hiscox	£375m	20.0%	(57.5%)	(6.1%)
May-20	National Express	£235m	20.0%	(42.0%)	(3.4%)
Apr-20	JD Wetherspoon	£141m	15.0%	(30.0%)	(6.0%)
Apr-20	DFS Furniture	£64m	19.9%	(49.7%)	16.3%
Apr-20	Informa	£1,001m	20.0%	(46.9%)	(4.0%)
Apr-20	Restaurant Group	£57m	19.9%	(48.2%)	(3.2%)
Mar-20	SSP	£216m	19.3%	(67.4%)	6.2%
Feb-18	TalkTalk Telecom	£204m	19.9%	(28.9%)	(10.6%)
Average		£249m	18.5%	(30.4%)	(3.9%)(2)

Source: Advisors, Dealogic as of 5th Feb 2024 (1) UK Main market non-M&A related primary ABBs over 15% of issued share capital since 2018 (2) Excluding DFS furniture whose issue price represented the nominal share price. Shaded transactions represent transactions during Covid.

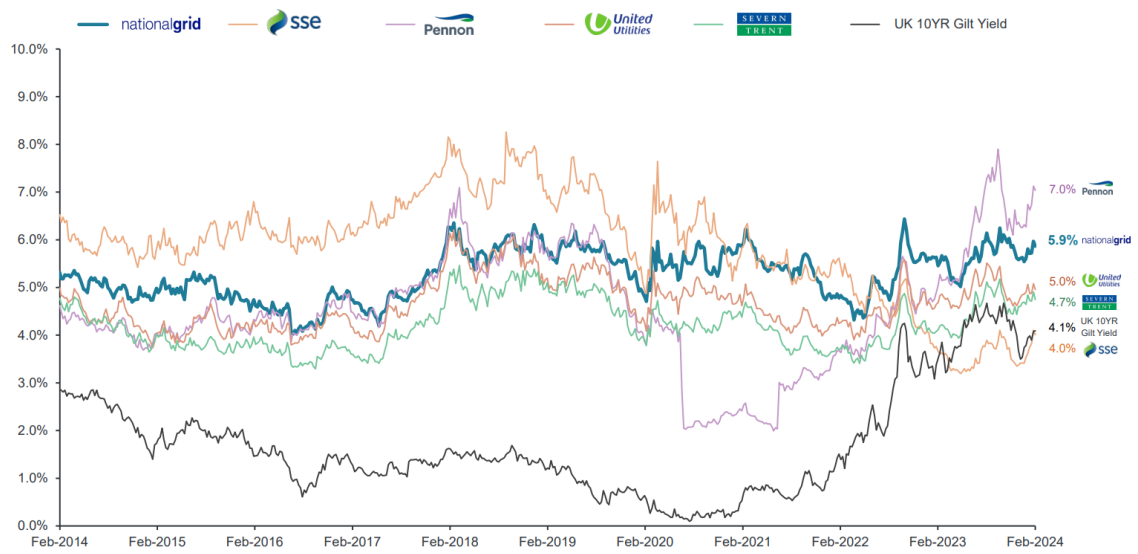
3. Rights issues have direct issuance costs

Market equity issuance costs for medium size UK rights issue transactions between £250m-£750m since 2019 (excluding acquisition related raises).

Date	Company	Total gross proceeds (£m)	Total fees declared (£m)	Total net proceeds (£m)	Total fees as % of funds received
13-Oct-23	Synthomer	276	15	261	5.75%
28-Sep-22	Aston Martin Lagonda	576	25	551	4.54%
22-Apr-21	SSP	475	19	456	4.17%
27-Jan-21	TUI	494	32	462	6.93%
25-Sep-20	Hammerson	552	27	525	5.14%
20-Apr-20	Aston Martin Lagonda	365	22	343	6.41%
Average		456	23	433	5.49%

Source: Company prospectuses, advisors

4. Dividend yield across the sector is typically in a range 3.5% to 7.0% with a mid point closer to 5.0% than the 3.0% assumed by Ofgem.



Source: Factset, advisors