Appendix A24 Finance Annex
NGN's RIIO-GD3 Business Plan
Proposed Financial Package for RIIO-GD3

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1 Overview

Ofgem's RIIO-3 Sector Specific Methodology Decision (SSMD) sets out its working assumptions for the Cost of Capital and other financial parameters. In **Chapter 7** of our RIIO-GD3 Business Plan, we summarise the financial impact of Ofgem's working assumptions. We also briefly summarise there our own proposals on financial parameters (**Section 7.5**), highlighting where Ofgem needs to make changes to its working assumptions on the allowed WACC and other elements of the financial package. This Annex sets out more detail on our financial assumptions for RIIO-GD3, and where they differ from Ofgem's working assumptions we explain why.

1.1 Key context

We welcome Ofgem's recognition of the role of equity investability, alongside its existing debt financeability assessment, to better understand whether the allowed return on equity is sufficient to retain and attract required equity capital. The investability concept is important for the Gas Distribution (GD) sector. It is far from certain that the sector is in a state of decline – there are many plausible scenarios in which the gas grid has a long-term future that is critical for UK customers. In any case, the sector must continue to invest during RIIO-GD3 to keep the networks safe and resilient for their expected ongoing use over the coming decades. The strategic importance of gas networks has been highlighted by DESNZ in its strategy and policy statement: *"The continued resilience of necessary infrastructure remains a key priority in order to maintain our safe, efficient and reliable gas networks".*[1]

As we set out fully in our response to Ofgem's RIIO-3 Sector Specific Methodology Consultation (SSMC), allowed rates of return need to be sufficient to both attract and retain equity capital. In order to ensure the investability of the gas networks, there are two critical factors that must be factored into Ofgem's RIIO-GD3 WACC allowance for GDNs.

First, the RIIO-GD3 price control is being set in the context of financial markets that have moved significantly since the last price control. We explained in our SSMC response that regulators' determinations of the Cost of Equity (CoE) in recent price controls – and in particular the Total Market Return (TMR) parameter – had been conditioned on what was referred to as the 'era of cheap money' following the Global Financial Crisis (GFC) – i.e. the prolonged period of near-zero Bank of England base rates, and historically low yields on Government bonds. This situation rapidly reversed during 2022.

We are pleased that Ofgem recognised this fundamental shift in macroeconomic conditions in its SSMD and indicated that it would increase the TMR relative to RIIO-2. However, Ofgem's SSMD working assumption on the point estimate of this parameter still leaves the sector in a difficult position in terms of its investability. Analysis in the **Oxera ENA CAPM report** shows that, compared to Ofgem's historical decisions, Ofgem's SSMD TMR estimate is unusually close to gilt yields. This suggests that Ofgem has not responded sufficiently in its SSMD to the increase in gilt yields since 2022.

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[1] DESNZ (May 2024), 'Strategy and Policy Statement for Energy Policy in Great Britain', p. 19. https://assets.publishing.service.gov.uk/media/6631ff75ed8a41eeaf58c0eb/strategy-and-policy-statement-for-energy-policy-in-great-britain.pdf

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Second, there is significant and growing uncertainty about the long-term role of gas distribution networks on the pathway to Net Zero. While there are plausible scenarios in which a long-term future for the gas grid is critical for UK customers, there is also material gas demand uncertainty as the UK moves towards the 2050 Net Zero target. Based on FES 2024, combined demand for residential heating for natural gas and hydrogen varies by a factor of c.1.5x across scenarios by 2040, i.e. in just 15 years from now[2].

We welcome Ofgem's leadership and openness to properly consider the issues caused by the wide range of demand scenarios and the need to develop an appropriate regulatory response. We agree with Ofgem that depreciation policy is an important tool to strike a balance between the interests of current and future customers, and to help mitigate stranding risk - we discuss this in more detail in **Section 7** below. However, as we explained in our SSMC response, there is also a need to compensate for the risks that will still be borne by debt and equity investors (even with accelerated depreciation), in order to ensure the sector remains investable in the face of asset stranding risk. We discuss in **Section 3** how asset stranding risk can be accounted for in the allowed return.

If allowed returns do not sufficiently capture market conditions and stranding risk, then the risk for customers is that essential investment in system resilience, asset health, and improvements in efficiency/innovation is rationed. Ensuring ongoing network resilience is the cornerstone of the service we provide to our customers – this requires an investable proposition which drives the required ongoing investment through management and shareholder incentives.

We present in this Annex a substantial body of evidence – much of which has been prepared by independent third parties - which all points to the required Cost of Equity being at or above the top end of Ofgem's SSMD range of 6.36%. Ofgem's SSMD proposal to take the mid-point of its range – i.e. a CoE of 5.43% (alongside its proposed 3% dividend yield) – would not be investable given this evidence.

It is important that Ofgem recognises that its financing duty should not be narrowly interpreted to be only about debt financing, but also about ensuring equity investability. While we are satisfied that our plan is financeable (as explained in **Chapter 7** of our Business Plan), our view is that Ofgem's proposed financial package, on the basis of its current working assumptions, undermines the equity investability of the sector. Companies need to retain and attract equity investment in the GD sector for RIIO-GD3, and this will be a challenge if Ofgem's financial package does not adequately take into account market conditions and risks faced by equity investors.

In the sub-sections that follow, we provide a brief summary of NGN's position on the key elements of the financial package for RIIO-GD3, before expanding in detail in the remainder of this Annex.

1.2 Cost of Equity (CoE)

We consider that based on several estimation approaches a Cost of Equity for RIIO-GD3 of 6.36% can on balance serve as an acceptable and investable assumption for our Business Plan as it is better aligned with evidence from financial markets and the risks that the GD sector faces on the path to Net Zero. We note that a large body of current empirical evidence (as we demonstrate below) points to higher estimates though.

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[2] ESO (2024), FES 2024 Data Workbook – Figure EC.15 and EC.19.

We consider a **risk-free rate (RfR)** of 1.54% to be a more appropriate assumption than Ofgem's estimate. This is based on Ofgem's latest view of 20-year index-linked gilt yields (1.16%), Ofgem's RPI-CPIH wedge of 11bps, and a convenience premium of 27bps as calculated by Oxera using AAA-rated iBoxx index yields.

There is strong evidence of a convenience premium on government bonds from AAA-rated corporate bond yields (which the CMA relied on to estimate the RfR in the PR19 determination) and from the academic literature. In our view, the best approach to capturing the convenience premium would be to base the estimate of the RfR on an average of ILG yields and AAA-rated corporate bond yields, in line with the CMA's approach at PR19. However, we recognise that Ofgem has stated at SSMD that it does not intend to align with the CMA's approach. Nevertheless, at the very least, our view is that an uplift needs to be applied to take account of the convenience premium.

On **Total Market Return (TMR)** our view is that only a TMR at the top end of Ofgem's range, i.e. 7.0%, is aligned with the long-run evidence.

UKRN guidance proposes that the TMR range should be estimated based on long-term historic averages. These have been stable over time at c.7% in real terms, based on DMS data. However, as described above, regulatory decisions on the TMR have drifted downwards since the global financial crisis, following the trend in index-linked gilt yields. Now that the interest rate environment has changed dramatically, Ofgem should reverse this downward trend.

Our view, supported by the **Oxera ENA CAPM report**, is that limited, if any, weight should be placed on ex-ante approaches when setting the TMR. This approach requires a degree of subjective judgement and should therefore be treated with caution.

Our conservative assumption of 7.0% is also supported by TMR cross-check evidence as set out in the **Frontier cross-checks report**. Both the Dividend Growth Model (DGM) and TMR Glider point to a TMR range of 7.0%-7.5%. Survey evidence also points to a significant increase in TMR expectations since RIIO-2.

On **beta**, as Ofgem recognises in the SSMD, there are no exact proxies available for a GB-only regulated energy network, and there is a particular lack of gas-specific beta evidence. This is an issue for gas networks, where asset stranding risk is growing as the energy transition progresses, and is not captured in any of the GB beta comparators. We are therefore supportive of Ofgem's inclusion of European utility comparators in its beta sample. However, this does not go far enough to capture the unique risks faced by gas networks. Estimating the beta using only the gas companies in Ofgem's sample gives an equity beta of 0.91. The **Oxera GDN CoE report** finds an equity beta range of 0.89 – 0.99 based on international beta evidence from European and US gas networks. Therefore only the top end of Ofgem's beta range, 0.89, starts to capture gas-specific (including stranding) risk and should be used for the GD sector as a conservative estimate.

The parameters set out above point to a CoE of 6.39%. Given that this is not materially different from the top end of Ofgem's SSMD range of 6.36%, we have used the latter figure as our RIIO-GD3 Business Plan assumption.

This figure is also supported by a range of CoE cross-checks, including updated versions of cross-checks used by Ofgem at RIIO-2. The evidence from cross-checks is set out in the **Frontier cross-checks report**. Frontier finds that on a holistic assessment of the available evidence, the allowed Cost of Equity should be materially higher than the midpoint of Ofgem's SSMD range. Only the top end of Ofgem's range would move the CoE in line with the available cross-check evidence. The midpoint of Ofgem's range would fail these CoE cross-checks by a considerable margin.

We have also undertaken some long-term cashflow modelling to evaluate the required Cost of Equity which would be necessary to compensate investors for the probability-adjusted risk of asset stranding. We find that – based on relatively conservative assumptions – this also gives a CoE in the range of 6.3-6.4%. This emphasises the requirement to set a GDN beta at the top end of Ofgem's range - both Oxera's analysis and our own high-level cashflow modelling point to broadly the same result, providing greater confidence in the robustness of the beta estimate of 0.89 for the GD sector.

1.3 Cost of Debt (CoD)

We agree with Ofgem's proposal to continue indexing the CoD. However, given the remaining uncertainty around the precise calibration of the CoD allowance, we are not currently able to provide a definitive view on this parameter (Ofgem's SSMD working assumptions are simply a placeholder and could change materially by the time of the RIIO-GD3 Draft Determinations). We will review Ofgem's CoD proposals at Draft Determinations to assess whether they meet the stated objective of broadly matching debt allowances with sector-expected efficient debt costs in RIIO-GD3.

We note, however, that it is important that Ofgem considers relevant market evidence when determining the Cost of Debt allowance calibration. For example, the **KPMG debt investor survey report** sets out that debt pricing for gas networks is wider than equivalent debt pricing for electricity networks, with investors generally expecting a gas premium of at least 25bps for new issuance of the same tenor and credit rating. KPMG finds that secondary market spreads for gas bonds have traded on average c.22bps wider than for electricity bonds in recent years. Debt tenors available to gas networks have also shortened compared to electricity networks, with lending appetite for gas now generally limited to 15 years or less.

Given that we require a provisional estimate of the CoD in order to carry out financial modelling, we have used Ofgem's SSMD working assumption of 2.90% (based on Ofgem's Business Plan Financial Model (BPFM) version 7b) uplifted for the following additional costs that are not reflected in the iBoxx index:

- The gas distribution sector faces higher borrowing costs than a vanilla energy company, with at least a 10bps gas premium uplift required to the total CoD allowance as evidenced in the **NERA GDN borrowing costs report**.
- In relation to additional borrowing costs, Ofgem has assumed an allowance of 25bps in its SSMD, in line with RIIO-GD2. However, the **NERA ENA additional cost of borrowing report** shows that these costs for the sector are higher. Based on NERA's report, we consider additional borrowing costs are now c. 36bps for a vanilla energy network. As set out fully in **Section 4**, the increase relative to Ofgem's RIIO-GD2 assumption is driven mainly by our higher estimates of carry costs and liquidity costs; and the inclusion of a new issue premium. We also note that 36bps is a conservative assumption since it excludes NERA's view of the CPIH premium, which could entail a further 21bps. At this time, we consider Ofgem should review the evidence to assess whether its estimate of 25bps should be increased by at least 11bps for a vanilla energy network.

- The premium for infrequent issuers of debt should increase to c. 14 bps (compared to Ofgem's allowance at RIIO-GD2 of 6bps) due to shorter debt tenors available to GDNs according to the **NERA ENA additional cost of borrowing report**.

Overall, therefore, the current evidence suggests that Ofgem's 25bps additional cost of borrowing assumption needs to be increased to at least 60bps for an infrequent issuer GDN – comprising of c. 36bps additional borrowing costs; at least 10bps for gas risk premium; and c. 14bps for infrequent issuer premium. For the purpose of assessing the impact of NGN's financial proposals, we have adopted a 35 bps uplift to Ofgem's allowed CoD estimate (which already includes 25 bps) as a placeholder until we can re-evaluate the evidence at the Draft Determinations stage.

This results in a placeholder value of 3.25% (CPIH-real) for the allowed CoD.

1.4 WACC

Table 1 below summarises the resulting financial parameters that we have used for our financial modelling, compared to Ofgem's working assumptions. Overall these parameters give a weighted average cost of capital (WACC) of 4.50% (CPIH-real), relative to a figure of 3.92% under Ofgem's assumptions.

Table 1. Summary of NGN Assumptions for RIIO-GD3

Parameter	Ofgem assumptions (RIIO-GD3 average, CPIH-real)	NGN assumptions (RIIO-GD3 average, CPIH-real)
RAV indexation	Actual CPIH for 58% of RAV; no indexation for 42% of RAV (nominal WACC allowance for fixed-rate debt)	Actual CPIH for 58% of RAV; no indexation for 42% of RAV (nominal WACC allowance for fixed-rate debt)
RPI/CPIH wedge	0.11%	0.11%
Notional gearing	60%	60%
Risk-Free Rate	1.27%	1.54%
Total Market Return	6.75%	7.0%
Beta	0.76%	0.89%
Cost of equity (real, CPIH)	5.43%	6.36%*
Cost of debt (real, CPIH) – holding assumption	2.90%	3.25%
WACC (real, CPIH)	3.92%	4.50%

* To align the assumed CoE with the upper bound of Ofgem's range, we have reduced our point estimate from 6.39% based on the analysis provided by our advisors to 6.36%.

Source: NGN

1.5 Depreciation

Ofgem is rightly considering whether to accelerate the current depreciation profiles in light of some FES scenarios suggesting that gas network utilisation may fall rapidly in the next 25 years, as we approach the 2050 Net Zero target. However - as we explained in **Section 7.5** of our plan (and further in **Section 7** of this Annex) – it would be wrong, from the perspective of intergenerational fairness, for Ofgem to target a RAV of zero in 2050, given the uncertainty that remains as of today.

Our view is that a more measured reduction in asset lives from 56/45 years to 35 years is a more appropriate course of action than Ofgem's proposed options. This helps to partially mitigate asset-stranding risk but limits the downsides associated with Ofgem's proposed options. We also recommend that Ofgem revisits the calibration of depreciation trajectory/profile ahead of RIIO-GD4, once more information is known about how the market is evolving – including following the anticipated 2026 Government decision on hydrogen for heat. NGN will continue to work with Ofgem and the Government to ensure equitable outcomes for current and future generations of consumers.

Importantly, depreciation policy alone cannot entirely remove stranding risk, as there will remain inherent uncertainty over the pace of technological change, policy change, and customer behaviour. Therefore, unless there is a credible commitment from the Government to underwrite the RAV of the gas networks, some stranding risk will remain under any of Ofgem's or NGN's proposed depreciation policy options. For the sector to remain investable, it is therefore critical that Ofgem sets an appropriate return on capital which reflects the risk borne by investors in the GD sector.

Furthermore, in our view additional Government intervention (e.g. to provide assurance that RAV recovery will be underwritten by the Government or otherwise socialised if charges become unsustainable) is required and valuable for society (as discussed in **Chapter 7** of our RIIO-GD3 Business Plan).

1.6 Dividend and equity Issuance

At SSMD, Ofgem has stated that it will continue to work with stakeholders to identify an appropriate dividend yield assumption for the notional company, but that the working assumption at SSMD is maintained at the 3% used at RIIO-GD2. This working assumption is significantly lower than even Ofgem's base SSMD proposal for the allowed Cost of Equity of 5.43% and is therefore clearly insufficient.

While we maintain our view that equity investors have a role to play in managing the overall financeability of the business, and we will continue to flex our dividend payments when necessitated by financial resilience considerations, it is inappropriate to assume a dividend yield as low as 3% as the baseline expectation for the notional GDN. Benchmarking by Oxera across European gas transporters gives a far higher estimate of dividend yield by gas comparators of c. 7%.

Further, Ofgem's 3% working assumption effectively implies that the return to shareholders of a significant portion of the allowed cost of equity can be deferred. This is incompatible with the current context of the GD sector. Dividend deferral can make sense in industries with expected long-term growth, whereby lower dividend yields in the short term can be acceptable to equity shareholders so long as there is expected growth in future equity returns, either through future dividend growth or via accrued asset value (realised upon sale). Given the material uncertainty surrounding future demand for gas as the UK moves towards the 2050 Net Zero target, sustained RAV growth is no longer expected for the gas distribution sector. A continued assumption of dividend deferral therefore would be incompatible with capital structure and investor expectations for the sector going forward. Indeed, if the sector expects a decrease in RAV in the long run, then there should be a return of capital back to investors, over and above the full payment of allowed equity returns in the form of dividends.

Our view is that the base dividend yield should be 6.36% p.a in line with NGN's proposed Cost of Equity assumption.

Ofgem has decided to maintain a 60% notional gearing level in every year of RIIO-GD3. We have modelled gearing levels for the notional company and found that maintaining 60% gearing requires total distributions (base dividend yield plus return of capital) to be at an average level of c. 6.5% across the price control. Using Ofgem's working assumption dividend yield of 3% for the notional company this implies a return of equity capital of c. 3.5% on average for RIIO-GD3. For the actual company, we have calculated the total distributions to be c. 8.7% on average over RIIO-GD3 in order not to exceed our 70% internal upper bound of gearing throughout the period. The latter value comprises a Base dividend yield of 6.36% (equal to NGN's proposed CoE assumption) and a further c. 2.3% return of capital on average for the period of RIIO-GD3.

In the remainder of this document, we elaborate further on the context in which the RIIO-GD3 financial package is being set, and which Ofgem needs to be mindful of, as well as provide more details and evidence underpinning the positions summarised above.

2 Independent expert reports we rely on

Before we elaborate further on our assumed financial parameters for RIIO-GD3, this section provides a brief summary of the main consultant reports that we refer to in our RIIO-GD3 Business Plan and in this Annex. We summarise at the highest level each report here, while the relevant findings and conclusions are discussed in more detail in the relevant sections below and importantly in the full reports.

We note in general that NGN is not the author of these reports and our interpretation may not capture the depth and complexity of the evidence presented therein – therefore the reports themselves must be read in full alongside this Annex.

Oxera, RIIO-3 cost of equity – CAPM parameters (8 November 2024). Prepared for the Energy Networks Association.

This report provides Oxera's review of the methodological choices made by Ofgem in the SSMD when estimating the parameters of the capital asset pricing model (CAPM), as well as Oxera's own assessment of the CAPM parameters.

The work focuses on the CAPM parameters that are applicable to all gas and electricity networks (i.e. it considers a vanilla energy network, while sector-specific forward-looking risks are outside the scope of this work, whether or not they affect the CAPM parameters). It addresses areas where Oxera disagrees with Ofgem's approach such as accounting for the convenience premium in the RFR; the exclusion of Pennon in the beta sample; the use of the ex-ante TMR estimate; and that Ofgem has not recognised the relationship between the TMR and gilt yields. Using its approach, Oxera estimates a cost of equity range of 5.70-6.83% with a midpoint of 6.25%.

We refer to this report as the **Oxera ENA CAPM report**.

Oxera, Review of the regulatory regimes and business mixes for relevant European comparators to strengthen the use of European beta data (8 November 2024). Prepared for the Energy Networks Association.

This report assesses the regulatory regimes and business mixes of the five listed European comparators that Ofgem has included in its beta assessment at SSMD (Enagás, Redeia, Italgas, Snam, Terna). Oxera assesses whether there is evidence that these comparators are exposed to higher or lower risk than networks subject to regulation under RIIO-2.

Oxera finds that risk factors relating to the regulatory process are similar across the British, Italian and Spanish regimes with regulatory frameworks in all three countries being broadly consistent over time, with methodologies and parameters updated at each price control review.

It also finds that the design of the regulatory regime for energy networks is broadly similar across these jurisdictions. Italian networks' regulatory framework has a slightly lower risk due to Capex being largely passed through, whereas Spanish GT networks' regulatory framework has a slightly higher risk due to Capex incentives being associated with greater regulatory discretion.

Furthermore, Oxera finds that the regulatory frameworks assessed cover the most significant portion of the European networks' revenues. As a result of the assessment, Oxera considers it appropriate to include the five European networks in the UK energy networks' comparator sample.

We refer to this report as the **Oxera European beta comparators report**.

Oxera, Cost of equity for RIIO-GD3 (29 November 2024). Prepared for GB gas distribution networks.

In this report, Oxera analyses evidence on an appropriate level of the allowed asset beta for GDNs in the RIIO-GD3 price control, by complementing the existing evidence base with gas-specific sector data. The report specifies the implications for the CoE range, as well as assessing the implications of the debt market evidence for gas networks on the CoE. It also discusses how non-systematic asymmetric risks may need to be accounted for in the Cost of Equity allowance separately.

Having considered a wide range of empirical evidence, Oxera ultimately concludes on a gas-specific asset beta range of 0.40-0.44. The lower bound is based on evidence of the long-term European gas networks' asset betas whereas the upper bound is the midpoint of the range of European regulatory precedent on asset beta allowances for gas networks (0.38–0.50). Oxera notes that Ofgem will likely attribute some weight to the non-gas UK evidence as per Ofgem's SSMD sample. In order to reflect this, Oxera concludes that a wider range of 0.38–0.44 is appropriate to cross-check the calculation of the CoE based on the capital asset pricing model (CAPM). Combined with the conclusions of the **Oxera ENA CAPM report** on other CAPM parameters, this results in a CAPM-based CoE range of 6.04-7.43% (at 60% gearing, CPIH-real), with a mid-point of 6.73%.

We refer to this report as the **Oxera GDN CoE report.**

Oxera, Gas distribution networks' dividends in RIIO-GD3 (03 December 2024). Prepared for GB gas distribution networks.

In this report, Oxera assesses the role of dividends in the RIIO-GD3 price control and the evolving context around it. The report includes a conceptual assessment, as well as a review of dividend yields for European comparators.

Oxera notes that dividend payouts have implications for a regulator carrying out an investability assessment. From the perspective of the investors, the regulatory treatment of mature assets in other sectors may have implications for the future treatment of assets that are currently early in their lifecycle. In that regard, the investability assessment should assess the ability of the regulatory framework to not only attract and retain capital, but also to return it to shareholders. Oxera therefore concludes that the application of these principles should lead Ofgem to allow for increases in the dividend yield of gas networks in its financial modelling.

This is reinforced by the evidence that suggests that, recently, the trends in dividend payments between European gas and electricity networks have started to diverge with gas networks paying significantly higher dividends. Indeed, Oxera finds that the average dividend yield of European gas networks has increased from 5.4% in 2018 to 7.4% in 2023, which exceeds the average dividend yield of European electricity networks, the latter remaining relatively constant over the same period (between 4.1–4.8%).

We refer to this report as the **Oxera GDN dividends report**.

Frontier Economics, Updated Cost of Equity Cross-Check Evidence (22 November 2024). A paper for the Energy Networks Association.

This report provides an update on cross-check evidence for RIIO-GD3, building on the cross-check evidence set out in Frontier's March 2024 equity investability report, submitted to Ofgem by the ENA as part of its response to the SSMC (summarised below). This report provides updates for:

- A range of cross-checks that test the adequacy of the allowed CoE, including:
  - The hybrid bond cross-check;
  - Infrastructure fund implied equity Internal Rate of Return (IRR);
  - Market to Asset Ratios (MARs);
  - Long-term profitability benchmarking; and
- A range of further cross-checks that test whether Ofgem's point estimate and range for TMR is appropriate.

Frontier estimates a range for the hybrid bond cross-check of 5.8-8.4%, an infrastructure fund implied IRR of 8.0% and a long-term profitability benchmarking range of 5.9-8.4%. Due to concerns around the integrity of the MAR cross-check, and its very wide range, Frontier advises not to place undue weight on the MAR evidence. The overall finding of these updated cross-checks is that the CoE proposed in Ofgem's SSMD CAPM range is too low, and the midpoint of Ofgem's range will not satisfy its equity investability objective.

We refer to this report as the **Frontier cross-checks report**.

Frontier Economics, Equity Investability in RIIO-3 (5 March 2024). A paper for the Energy Networks Association.

This report sets out why the investability concept is important at RIIO-GD3, in particular referencing the material changes in capital market conditions since RIIO-2, and the challenges and heightened risk brought about for network companies by decarbonisation. It also discusses the highly competitive market for capital. Frontier explains that investability must apply equally to all equity, old and new, and across all networks equally. Frontier also sets out how investability can be tested, including through a hybrid bond cross-check.

The report finds that a suite of investability tests points to an allowed CoE of at least 6.48%. It notes that although the investability tests used are diverse in nature, the results line up well and are mutually supportive.

Frontier also sets out a number of principles in this report, including:

- Investability must focus on assessing whether the equity return on offer is competitive relative to the set of other opportunities that exist in the wider capital market.
- If the wedge between debt and equity returns shrinks to the point where it becomes irrational for an investor to be willing to invest in equity, which is by its nature higher risk, this must indicate that equity returns are insufficient.

- Well-designed cross-checks can play an important role in respect of equity investability – albeit these need to be designed robustly and interpreted subject to the relevant caveats/limitations associated with each cross-check.
- Investability considerations should not be limited to attracting new equity investment, but also recognise the importance of retaining existing equity investment.

We refer to this report as the **Frontier equity investability report.**

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

NERA estimates the additional costs of borrowing for all energy networks at RIIO-3. The scope of the work includes transaction costs, liquidity/RCF costs, cost of carry, CPIH premium, New Issue Premium (NIP), and small company/infrequent issuer premium.

NERA finds that the additional cost of borrowing is 57bps, with an additional 14bps premium for small companies / infrequent issuers.

We refer to this report as the **NERA ENA additional cost of borrowing report**.

NERA, Impact of GDNs' Reduced Debt Tenor on Additional Cost of Borrowing at RIIO-3 (4 March 2024).

In this report NERA builds on its ENA additional cost of borrowing report, estimating the additional costs of borrowing for GDNs specifically. It finds that additional costs of borrowing are higher for GDNs, estimated at 67 bps p.a. over RIIO-GD3 compared to 57 bps for all energy networks. This is driven by investors' preference for shorter-tenor debt given the increasing risks around the future role of gas networks.

We refer to this report as the **NERA GDN borrowing costs report**.

KPMG, Credit Rating Agencies' perception of Risk for Gas Distribution Networks (GDNs) under RIIO-3 and beyond (4 March 2024). Prepared for the GDNs. (confidential)

The GDNs engaged KPMG to better understand Credit Rating Agencies' (CRAs) views regarding the risks facing the GDNs under the RIIO-GD3 price control and beyond. The report summarises existing publications and comments provided by the CRAs during focussed interviews on how agencies could adapt their approach to assessing the creditworthiness of the GDNs in the context of the challenges faced by the sector in the short, medium, and long term. The report also presents CRAs' views on some of the options put forward by Ofgem in the SSMC.

As set out in more detail in our response to the SSMC, KPMG's review of relevant material from the three main CRAs (S&P, Moody's, and Fitch) shows that, while the agencies currently base their credit quality assessment on the expectation of regulatory support allowing for a full RAV recovery, longer-term uncertainties around gas demand evolution are well-recognised and closely monitored by all agencies. In their publications, agencies mention that the risk around possible reduction in network utilisation became more acute.

We refer to this report as the **KPMG CRAs' risk perception report**.

KPMG, Perception of risk for Gas Distribution Networks (GDNs) under RIIO-3 and beyond: debt investor survey (11 April 2024). Prepared for the GDNs. (confidential)

The GDNs engaged KPMG to seek market views from existing debt investors in the UK gas distribution sector regarding its comparative attractiveness relative to other UK RAB-regulated sectors, and the impact of Ofgem's RIIO-3 methodology proposals.

The report contains feedback gathered through a survey of 13 major public and/or private debt investors in UK RAB-based regulated networks, including the GD sector. It captures their views on the evolution of debt investor appetite for the GD sector, in the context of risk and uncertainty on the future of gas. This showed that uncertainty in relation to long-term gas demand has increased investors' risk perception of the GD sector which has resulted in a cost of debt premium for gas over electricity networks with the same credit rating and a significant reduction in appetite to lend to gas networks for long tenors.

We refer to this report as the **KPMG debt investor survey report**.

KPMG, Debt market analysis: gas distribution networks and UK regulated comparators (1 March 2024). Prepared for the GDNs. (confidential)

This report considers the evolution of the cost of debt and tenors for the GD sector over time and trends relative to other UK RAB-regulated sectors, specifically gas transmission, electricity distribution and transmission, and water. The report presents an analysis of observed public and private debt market data from the beginning of RIIO-1 in April 2013 to 11 January 2024, for both new issuance and secondary trading. The data was standardised and spreads were calculated based on Government bond yields and tenor-adjusted iBoxx indices.

The evidence shows that the cost of debt in the GD sector is increasing both in public and private markets and that there is now a discernible difference between the relative cost of debt faced by gas and electricity networks. Historically the difference in secondary market spreads between gas and electricity bonds was very modest, averaging close to zero but since 2022 gas spreads have been persistently wider than those of electricity, averaging 29 bps for A-rated bonds and 15 bps for BBB-rated bonds from 2022 to present. Tenors on new debt issuance in the GD sector are also shortening and are now lower than in comparable sectors such as electricity and water. The average tenor at issue since 2020 has been 10.1 years in the GD sector compared to 12.3-17.4 years in these comparable sectors. KPMG suggest that this evidence implies that the cost of debt of the GD sector exhibits a premium associated solely with the sector risk.

We refer to this report as the **KPMG debt market analysis report**.

3 Cost of Equity (CoE)

Based on several estimation approaches we consider that on balance a Cost of Equity assumption for RIIO-GD3 of 6.36% is better aligned with the risks that the GD sector faces on the path to Net Zero. We note that the available evidence often points to a higher estimate**.**

Below we discuss each of the CoE parameters underlying our assumption, as well as the evidence from cross-checks.

3.1 Risk-free rate (RfR)

3.1.1.1 Proxy for RfR

Ofgem proposes in SSMD to continue to base its estimate of the RfR on the one-month (October, daily) average of 20-year index-linked gilt (ILG) yields, as a starting point. Ofgem's latest 'WACC Allowance Model' uses the one-month average from June 2024 as a placeholder, which gives an estimate of 1.16% in RPI-real terms.

3.1.1.2 Convenience premium

In our SSMC response, we explained our view that the RfR should capture the 'convenience premium' observed for government bonds. There is strong theoretical and empirical evidence that investors value highly rated government bonds for reasons beyond their proximity to being 'risk-free', in particular, due to their liquidity characteristics and the use of government bonds in hedging strategies (such as interest rate hedging). This leads to excess demand for highly rated government bonds and creates what is referred to as a convenience premium. This means that the Government can borrow at rates lower than even a theoretically risk-free corporate borrower. In comparison, when regulated networks raise capital from the market they do not benefit from such excess demand.

There is strong evidence of a convenience premium based on:

- AAA-rated corporate bond yields. This approach was used in the PR19 redetermination, where the CMA estimated the RfR by taking an average of ILG yields and AAA-rated corporate bonds. The CMA relied on this on the basis that corporate bond yields represent a rate that *"is available to all (relevant) market participants"*[3].
- Academic literature. The UKRN report cites a paper by Diamond and Van Tassel[4] which estimates average convenience yields across different countries. Whilst these estimates only cover short-term time horizons (the authors look at bonds of 3 months to 2 years), these still

[3] CMA (2021) PR19 redetermination, paragraph 9.160.

[4] Diamond & Van Tassel (2021), 'Risk-Free Rates and Convenience Yields Around the World (available athttps://papers.ssrn.com/sol3/papers.cfm?abstract_id=4048083)

provide an indication of the magnitude of convenience premiums. If anything, longer-term government bonds are more likely to be subject to a convenience premium.

Ofgem has proposed in SSMD not to include any adjustment for the convenience premium. Our view remains that the RfR should reflect the convenience premium in order to properly compensate investors.

There are different approaches to capturing the convenience premium, and our view is that Ofgem should follow the precedent established by the CMA in its redetermination of the PR19 price control. As described above, the CMA estimated the RfR by taking an average of ILG yields and iBoxx AAA 10+Y and 10-15Y indices, with the latter enabling it to capture the convenience premium. Applying this approach now would give an RfR of c.1.8%.

Alternatively, if Ofgem wishes to retain its approach to estimating the baseline RfR using only ILG yields, a separate uplift should be applied for convenience premium. The **Oxera ENA CAPM report** explains further why such an uplift is necessary, and estimates the convenience premium to be 27bps. Their approach is based on taking a five-year average of AAA non-government bond indices, and a five-year average of gilt yields[5]. The estimates using gilt yields and AAA indices are then averaged, and the five-year average of gilt yields is subtracted to give an estimate of the convenience premium.

3.1.1.3 RPI-CPIH wedge

ILGs are RPI-linked, meaning that the RfR estimate derived from ILGs needs to be converted into CPIH-real terms using the RPI-CPIH wedge. Ofgem has proposed to calculate the wedge using official forecasts of CPI and RPI (by the OBR or HM Treasury) up to the point of convergence of the RPI and CPIH in 2030, and a wedge of zero beyond that point. We agree with this approach, assuming that RPI reform goes ahead as planned. At SSMD, Ofgem estimated the average wedge for the price control to be 11bps, using OBR data.

3.1.1.4 Indexation of RfR

We agree with Ofgem's proposal to continue indexing the CoE annually. We look forward to engaging with Ofgem constructively on the precise calibration details for the indexation approach.

3.1.1.5 Proposed RfR estimate

Starting from Ofgem's current RPI-real estimate of 1.16%, converting this to CPIH-real terms using a wedge of 11bps, and adding the convenience premium of 27bps, gives an RfR estimate of **1.54%**. However, we reiterate our view that a more appropriate approach to capturing the convenience premium would be to base the initial estimate of the RfR on an average of ILG yields and AAA-rated corporate bond yields.

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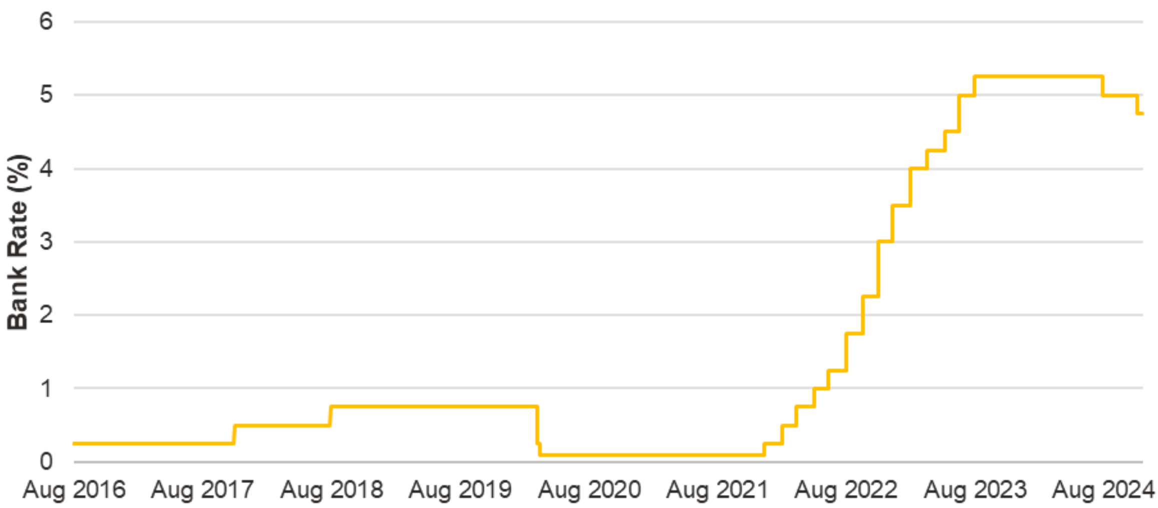
[5] Oxera finds that over the past five years, the 10–15 and 10+ AAA non-government bond indices had an average duration of 9.4 and 14.3 years, respectively. Therefore, Oxera calculates the convenience premium by matching the AAA non-government bond indices with gilts with a maturity of 9.5 and 14.0 years.

3.2 Total Market Return (TMR)

In the SSMD, Ofgem estimates a TMR range of 6.5% (based on ex-ante analysis using the DMS decompositional approach) to 7.0% (based on the arithmetic average of ex-post historical returns), with a midpoint of 6.75%.

As set out in **Section 1.1** above, the RIIO-3 price control is being set in the context of financial markets that have moved significantly since the last price control. The period of loose monetary policy and low interest rates that followed the Global Financial Crisis has clearly ended. The Bank of England base rate (see **Figure 3-1** below) rose from 0.25% at the start of 2022 to a peak of 5.25% in August 2023, falling back to 4.75% as of November 2024. The BoE has shown no indication of returning to the very low rates experienced between 2008 and 2022.

Figure 3-1 Bank of England Base Rate



Source: https://www.bankofengland.co.uk/boeapps/database/Bank-Rate.asp

In the **Frontier equity investability report**, submitted alongside our SSMC response, Frontier Economics explained that regulatory decisions on real TMR have drifted downwards since the global financial crisis, following the trend in ILG yields.[6] This is despite long-term equity returns (as published by DMS and using the methodology and data which was standardly used by regulators prior to RIIO-ED1) fluctuating in a narrow range roughly between 7.1% and 7.3% over 2010-2022 - i.e. TMR estimated on this long-run basis has barely changed.[7] As Frontier explains, regulators have been clear in the past that they were lowering TMR because of their perception of wider market evidence, in particular low interest rates.

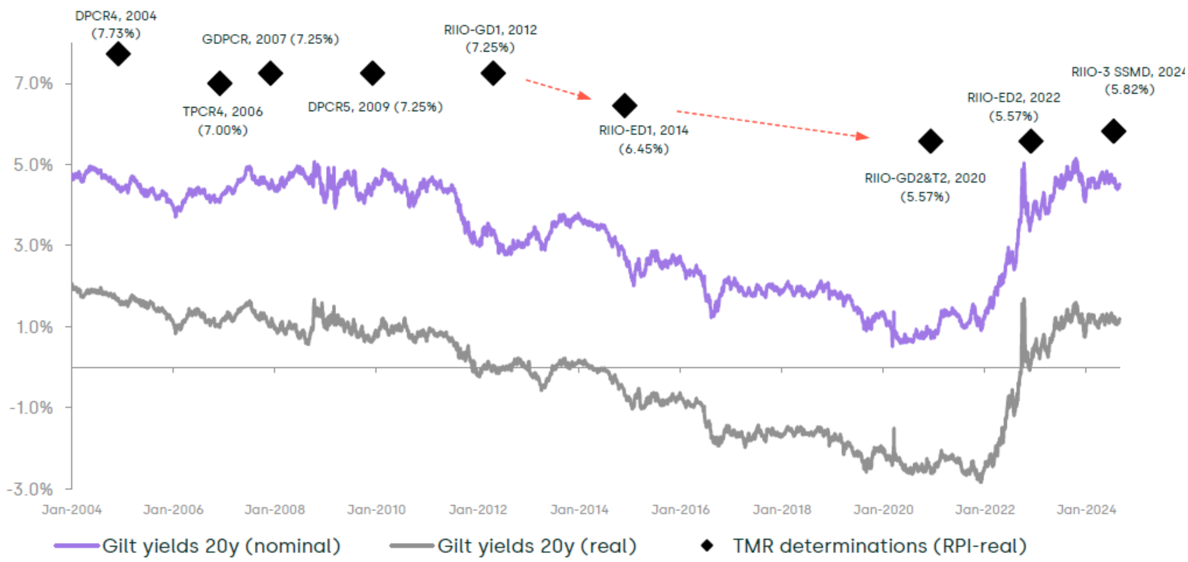
The **Oxera ENA CAPM report** shows the continued environment of higher gilt yields in the chart replicated in **Figure 3-2** below. The Figure also shows that, since gilt yields have increased, Ofgem's

[6] Frontier equity investability report, Section 2.1.1 paras 59 - 64

[7] Frontier equity investability report, para 58, and Figure 2

SSMD TMR proposal is unusually close to gilt yields (relative to its historical decisions). This suggests that Ofgem has not responded sufficiently in its SSMD to the increase in gilt yields since 2022.

Figure 3-2 Total Market Return determinations and gilt yields (RPI-real)



Source: **Oxera ENA CAPM report**, Figure 3.1.

In its SSMD Ofgem suggested that its past decisions were not driven by prevailing market conditions (pointing, for example, to the 2018 UKRN paper and emerging inflation data). Ofgem also states in the SSMD that it does not plan to adjust its TMR estimate up or down to reflect current market conditions. However, Ofgem also acknowledged that it previously gave consideration to low investment manager forecasts of the TMR (as it plans to continue doing as a broader cross-check in RIIO-3); as well as recognising it took the low interest rate environment into account when setting the TMR for RIIO-ED1.[8]

Ultimately, Ofgem's SSMD focuses on the long-term historic averages, both in terms of ex-post and ex-ante averages. The ex-post average has been stable over time at c.7% in real terms, based on DMS data (latest estimate 6.97%). As explained in the **Oxera ENA CAPM report**, limited weight should be placed on ex-ante approaches when setting the TMR. This is because these approaches do not in fact attempt to estimate a forward-looking TMR, but rather an adjusted historical TMR, replacing actual returns with assumptions about certain components of future returns. Certain components are assumed to be non-persistent and are removed, and some are considered attributable to 'good luck' and excluded (although we recognise that Ofgem does not make adjustments for good luck). This approach requires a degree of subjective judgement and should therefore be given only limited (if any) weighting.

Furthermore, the **Oxera ENA CAPM report** explains that following a 'through the cycle' approach, that gives no weight to changes in market conditions, risks underestimating the TMR and not supporting

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[8] SSMD, paragraph 3.94.

the companies in retaining and attracting investment in RIIO-3. Oxera considers that Ofgem should reflect the current interest rate environment when setting the TMR range, particularly to ensure that allowed returns are in line with investor expectations to satisfy the requirement for investability.

Our view is that only a TMR at the top end of Ofgem's range, of 7.0%, is aligned with the long-run evidence, and will provide an investable package if combined with other correctly estimated CAPM parameters.

A TMR of 7.0% is supported by TMR cross-checks used by Ofgem at RIIO-2, as well as additional cross-checks identified in the **Frontier cross-checks report**. Frontier's report provides updated cross-check results based on long-term historical average returns, the Dividend Growth Model (DGM), as well as the TMR Glider which it developed at the SSMC stage.[9] It also provides updated TMR survey evidence reflecting investors' revealed expectations on their forward-looking required equity market return.

Frontier's analysis shows that both the DGM and TMR Glider estimates fluctuate around the long-term historical average of roughly 7.0% which Ofgem has used to set the top end of its range. Given this, Frontier concludes that the historical evidence suggests that a long-run unconditional[10] TMR range of 6.5%-7.5% CPIH-real would be appropriate to set a stable but not fixed TMR which looks "through the cycle", but is sufficiently flexible to allow it to respond to changes in the macroeconomic environment in a stable and predictable way. Frontier further explains that the TMR Glider and DGM values at any particular point in time can be used to gauge capital market conditions and set a point estimate within this long-run range. It states that the prevailing market conditions in the past two years strongly suggest a RIIO-3 TMR range of 7.0%-7.5%, and recommends a point estimate towards the top of that range.

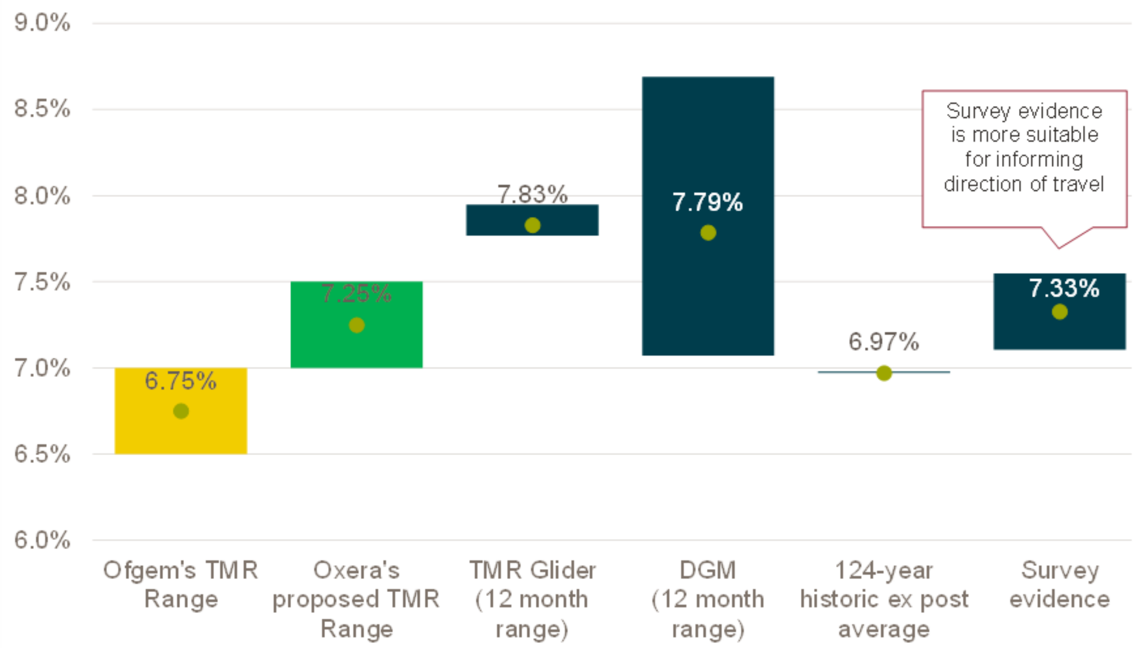
Frontier has also looked at updated TMR survey evidence. This includes investment managers' TMR forecasts, as well as results from the annual survey of risk-free rates and market risk premia conducted by Fernandez et al. Both surveys show that TMR expectations have increased by at least two percentage points in nominal terms since the RIIO-2 Final Determinations. This points to a significant increase in market expectations of TMR since RIIO-2 which is consistent with the change in the implied estimate from the DGM and TMR Glider over the same period.

Figure 3-3 below summarises Ofgem's SSMD TMR range against the full suite of TMR cross-check evidence. Overall, we agree with Frontier's conclusion that the current cross-check evidence "*suggests that the market required rate is currently significantly above the long run average*", and that "*prevailing market conditions in the past two years would strongly suggest a RIIO-3 TMR range of 7.0%-7.5%*".

[9] Frontier Economics (March 2024). "The Relationship Between Total Market Return and Gilt Yields".

[10] Unconditional on prevailing capital markets.

Figure 3-3 Summary of TMR estimates and cross-checks (CPIH-real)



Source: **Frontier cross-checks report**, *Figure 13*

3.3 Beta

At SSMD, Ofgem has proposed an asset beta range of 0.30 – 0.40. Using a debt beta of 0.075 (unchanged from RIIO-2), Ofgem's asset beta range translates to an equity beta range of 0.64 – 0.89, with a midpoint of 0.76. Ofgem states that it anticipates relying most heavily on longer-term (10-year) timeframes when picking a point estimate for the asset beta at Draft Determinations (DD) and Final Determinations (FD).[11]

Ofgem has decided to include data for relevant European utility comparators, in addition to National Grid, United Utilities and Severn Trent, in order to estimate the beta. It looks at daily observation data across 2, 5 and 10-year timeframes. We support Ofgem's decision to include European utility comparators to provide more robust beta estimates and help address the lack of gas sector comparators in the UK.

As Ofgem recognises in the SSMD, there are no exact proxies available for a GB-only regulated energy network, and there is a particular lack of gas-specific beta evidence. There are also limitations in using backwards-looking beta data to estimate a forward-looking beta, particularly in a dynamic environment where new risks are arising.[12] These points are important for gas networks, where asset stranding risk is growing as the energy transition progresses, and is not captured in any of the GB beta comparators.

[11] SSMD Finance Annex, paragraph 3.176.

[12] SSMD Finance Annex, paragraph 3.191-3.192.

Ofgem has decided to include European utility comparators (Enagas and Red Electrica in Spain and Italgas, Snam and Terna in Italy) to capture companies facing similar risks and challenges to those faced by GB energy networks. Three of these comparators are gas networks: (Enagas and Snam are gas transmission operators, and Italgas is a GDN). Ofgem notes that it considers "*the inclusion of direct gas network comparators as a way to address changes of risk directly, which should reduce the need to make any 'manual' adjustments to our beta estimate*."[13]

The **Oxera European beta comparators report** reviews the regulatory regimes and business mixes of the five additional European comparators identified by Ofgem. It finds that the level of risk faced by these companies is similar to that faced by regulated companies during RIIO-2.

While we agree that Ofgem's inclusion of European utility comparators helps to better capture some of the risks associated with achieving net zero, our view is that only the top end of Ofgem's beta range starts to adequately address risks specific to the gas sector (including asset stranding risk). We explain our reasoning below.

Ofgem's range is based on the asset beta evidence shown in **Figure 3-4** below. Ofgem does not explain its precise approach to selecting the range and says it is based on regulatory judgement.[14] We note that the range starts at the lowest asset betas in the table below (0.30), but ends at 0.40, excluding the top 30% of the asset betas in the table - i.e. excluding a lot of the evidence from gas comparators.

Figure 3-4 Asset betas for chosen comparators, as calculated by Ofgem

Company	**Sector**	**Country**	**2yr Asset Beta (0.075 debt beta)**	**5yr Asset Beta (0.075 debt beta)**	**10yr Asset Beta (0.075 debt beta)**
National Grid	ET	GB	0.31	0.33	0.36
UU	Water	GB	0.32	0.30	0.33
SVT	Water	GB	0.34	0.30	0.33
Enagas	GT	Spain	0.30	0.37	0.38
Red Elec	ET	Spain	0.32	0.31	0.36
Terna	ET	Italy	0.41	0.45	0.45
Snam	GT	Italy	0.44	0.47	0.47
Italgas	GD	Italy	0.41	0.40	-

Source: Ofgem (July 2024), RIIO-3 SSMD – Finance Annex, Table 10. Ofgem analysis of Bloomberg data.

[13] SSMD Finance Annex, paragraph 3.198.

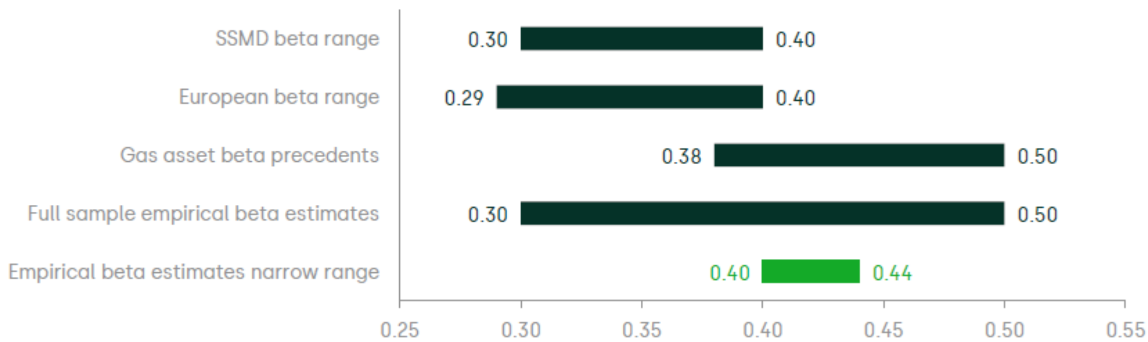
[14] SSMD Finance Annex, paragraph 3.222.

Using Ofgem's asset beta numbers from the table above, and placing more weight on 10-year data as Ofgem anticipates doing in its final decision,[15] the average asset beta of the gas-specific companies in Ofgem's sample (i.e. Enagas, Snam and Italgas) is 0.41, translating to an equity beta of 0.91 – in excess even of the top end of Ofgem's proposed beta range.

The lower end of Ofgem's beta range predominantly reflects GB water companies which clearly do not face the same asymmetric asset stranding risks as the GD sector, meaning that this evidence should not be relied upon to inform the beta for the GD sector. The **Oxera GDN CoE report** further details why assigning a meaningful weight to UK water company betas would introduce a downward bias in the estimation of risks faced by gas networks since the challenges faced by the two sectors are diverging.

A beta at the top end of Ofgem's range is supported by Oxera's analysis of gas network asset betas. The **Oxera GDN CoE report** assesses international beta evidence from a sample of European and US gas networks and concludes on a conservative range of 0.40 – 0.44 by applying a number of principles including placing more weight on longer-term timeframes and placing more weight on European comparators relative to US comparators. This gas-specific asset beta range translates to an equity beta range of 0.89 – 0.99. Evidently, the bottom end of Oxera's gas-specific beta range is at the top end of Ofgem's range (as illustrated in **Figure 3-5** below), demonstrating that only the top end of Ofgem's range starts to capture gas-specific risk.

Figure 3-5 Asset beta ranges



Source: **Oxera GDN CoE report**, Figure 1.

Oxera then acknowledges that while the above range robustly reflects the gas-specific evidence, Ofgem will likely attribute some weight to the non-gas UK evidence on betas. It therefore widens its range to 0.38 – 0.44 (which translates to an equity beta range of 0.83 – 0.99) and states that this range can be used to cross-check the calculation of the CoE.

Based on this evidence, our view is that only the top end of Ofgem's beta range, which is at the bottom end of Oxera's international gas-specific range and below the mid-point of Oxera's wider range, which

[15] See SSMD Finance Annex, paragraph 3.218. For our calculation, we have placed 50% weight on Ofgem's 10-year beta estimates.

accounts for both international gas and UK non-gas evidence, starts to capture GDN gas-specific risk, and hence a beta of at least 0.89 should be used for the GD sector.

3.4 Cross-checks

Ofgem stated in SSMC that it is prudent to cross-check its CAPM-derived estimate of the cost of capital against relevant market data and other estimation methodologies to provide assurance that its estimate is neither too low nor too high. Ofgem also referenced recommendation 7 of the UKRN Guidance, which suggests that cross-checks may be used to sense-check the CAPM-derived point estimate and that regulators should only deviate from the mid-point of the CAPM cost of equity range if there are strong reasons to do so.

At the outset, we note that good regulatory practice is to aim up on the allowed equity return from the midpoint of an estimated CoE range. This is because the consumer harm that might arise from setting the allowed return too low far outweighs the consumer harm that would arise from setting the allowed return too high. The need for aiming up was discussed extensively during the RIIO-2 appeal and we do not repeat our views here - all of the same considerations continue to apply. We consider that there is increased parameter uncertainty for GDNs relative to RIIO-2, due for example to the absence now of a gas sector comparator in the standard UK beta sample; as well as due to the high levels of volatility in financial markets introduced by Covid and the War in Ukraine. This greater parameter uncertainty means, in our view, there is a greater risk that the regulator could set the allowed return too low – particularly if material weight is placed on evidence from sectors facing different risk profiles to gas.

In this section, we discuss the following cross-check evidence:

- Cross-check evidence from ARP-DRP;
- Cross-check evidence from hybrid bonds;
- Infrastructure fund implied equity IRR;
- Market-to-asset ratios (MARs);
- Long-term profitability benchmarking; and
- Probability-adjusted risk of asset stranding.

The evidence overall demonstrates that there are strong reasons for Ofgem to deviate from the midpoint of its Cost of Equity range as specified in the SSMD.

3.4.1.1 Cross-check evidence from ARP-DRP

The **Oxera GDN CoE report** explains that the differential between the asset risk premium (ARP) and the debt risk premium (DRP) can be used as a cross-check to the estimation of the allowed CoE, by assessing whether the "gap" between the equity and debt returns is sufficient. This is a useful cross-check of whether the allowed CoE is appropriately calibrated because it is derived from market data on observed debt yields rather than built up from a theoretical asset pricing model.

Oxera finds that its CoE range, calibrated with its wider beta range of 0.38-0.44, is supported by the ARP-DRP cross-check when anchored on gas sector debt data. The ARP-DRP cross-check also shows that Ofgem's SSMD point estimate of the allowed CoE is too low for GDNs, supporting the use of gas-specific evidence (i.e. an asset beta range of 0.40-0.44), to extend Ofgem's SSMD beta analysis and inform its RIIO-GD3 decision.

3.4.1.2 Cross-check evidence from hybrid bonds

The **Frontier cross-checks report** explains that hybrid bonds can be used to evaluate whether the allowed equity return lies sufficiently far above the long-term return on debt. Because of the difference in risk between debt and equity, it would be irrational for investors to opt for equity if returns were similar to or below senior debt. Hybrid bonds can help understand how much higher equity returns should be relative to debt. Because hybrid bonds combine equity and debt features, and their yield is observable, with an appropriate assumption on the proportion of equity-like features of the hybrid bond, an expected return on equity can be implied from a relatively simple formula.

Table 2 below summarises the outputs from Frontier's hybrid bond cross-check. Frontier's analysis concludes that the cross-check suggests a point estimate for the Cost of Equity of 6.6%, significantly higher than the top end of Ofgem's SSMD CoE range.

Table 2. Result of the hybrid bond Cost of Equity cross-check

Component	Sep-2024 update
Spread to iBoxx **(adjusted for default risk, at issue)**	+136bps
Equity-likeness %	50%
Higher returns on equity	+272bps
iBoxx £ Utilities 10Y+	5.99%
Nominal equity returns	**8.7%**
CPIH-real equity returns (2% inflation)	**6.6%**

*Source: **Frontier cross-checks report**, Table 1*

Note: Spread before adjustment is 151bps, 15bps then netted from this figure for default risk; iBoxx value is a 1yr average

Frontier has validated this result with a number of sensitivity checks. These suggest a low end of the range from the cross-check of 5.8% and a high end of the range from the cross-check of 8.4% (CPIH real). Frontier concludes that *"risks to investability are heightened where the CAPM mid-point lies below the hybrid bond cross-check range"*.

Frontier has also conducted additional robustness checks to address comments made by Ofgem at the SSMD. In addition to its existing robustness checks on the portfolio of hybrid bonds issued by National Grid and SSE that Frontier assessed in the **Frontier equity investability report**, Frontier has extended its sample to a wider set of hybrid bonds issued by European utilities to further test the representativeness of the National Grid bonds used. Frontier finds that this evidence *"supports the National Grid bond as a robust observation, consistent with peers in its asset class"*.

3.4.1.3 *Infrastructure fund implied equity IRR*

The **Frontier cross-checks report** also presents updated results for this cross-check that was used by Ofgem at RIIO-2. At the time, Ofgem obtained discount rates for a set of infrastructure funds that invest in private finance initiatives and private utility assets. It then inferred an IRR for each fund by deflating the discount rates by the premium-to-net asset value (NAV) for each fund to account for the outperformance of the underlying assets. Ofgem then took a simple average across the funds to derive a point estimate of 6.3% nominal, or 4.2% CPIH-real.

Frontier has collected updated data on discount rates for the relevant infrastructure funds and carried out the same analysis as performed by Ofgem. The results show that the average equity implied IRR has increased from 6.0% in July 2020 to 10.1% in September, i.e. approximately 8.0% in CPIH-real terms.

3.4.1.4 *Market-to-asset ratios (MARs)*

Ofgem also relied on MARs as a cross-check at RIIO-2. Ofgem's CoE inference based on MAR evidence relies on the market's valuation of utilities to draw inferences about how investors perceive the regulatory settlement.

The **Frontier cross-checks report** details a number of structural and practical sources of uncertainty associated with the MAR cross-check, particularly due to its heavily assumption-driven results, and raises concerns with the integrity of the cross-check. Nevertheless, it presents the latest evidence on MARs, covering both traded utility MARs and transaction MARs. It finds that recent evidence suggests a wide range of MARs, from 0.85 – 1.64. Using Ofgem's MAR inference model deployed at ED2, as well as a range of plausible assumptions around RAV growth, outperformance, and the allowed CoE, Frontier estimates an implied CoE range of 4.90% - 12.33% CPIH-real.

Our view is that Ofgem should place limited, if any, weight on MAR inference due to its inherent uncertainty and very wide implied range. We consider it unlikely to be informative regarding whether or not Ofgem's proposed CoE is sufficient to secure investability.

3.4.1.5 *Long-term profitability benchmarking*

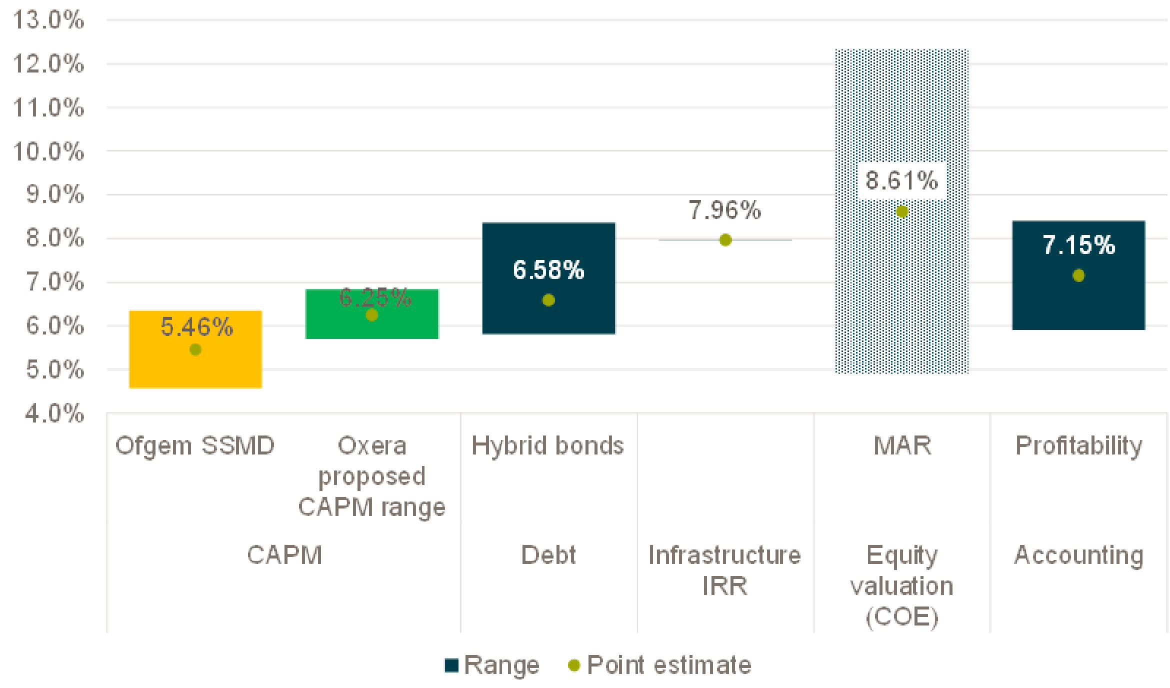
The **Frontier cross-checks report** also explains that profitability benchmarking can be a useful cross-check. This involves assessing how the allowed equity return compares to the outturn level of profitability for comparable businesses (i.e. businesses with a similar aggregate risk profile to energy networks). This provides a useful real-world check on whether or not the allowed return for regulated companies is reasonable (or potentially too high or too low).

Given the long-term nature of this cross-check, Frontier does not consider it necessary to provide an updated figure in the cross-checks report, stating that the range in the **Frontier equity investability report** remains relevant, i.e. 5.9% - 8.4%.

3.4.1.6 *Overall findings*

The results of Frontier's cross-check analysis are shown in **Figure 3-6** below, relative to Ofgem's SSMD range[16], as well as the CoE range estimated by Oxera for a vanilla energy network (based on the **Oxera ENA CAPM report**. It is clear from a holistic assessment of the available evidence that the allowed Cost of Equity should be materially higher than the midpoint of Ofgem's SSMD range. Only the top end of Ofgem's range would move the CoE in line with the available cross-check evidence. The midpoint of Ofgem's range would fail these cross-checks by a considerable margin.

Figure 3-6 CoE estimates and cross-checks (CPIH-real)



Source: **Frontier cross-checks report**, *Figure 9.*

3.4.1.7 *Modelling stranding risk*

We also undertook an analysis to directly estimate the Cost of Equity that would be required to compensate investors for the expected (i.e. probability-weighted) loss arising due to stranding.

The principle of needing to ensure investors are compensated for asymmetric risks such as stranding risk is explained in the **Oxera GDN CoE report**, which states that asset stranding is an asymmetric risk that *"implies a downward pressure on the expected returns. Hence, either the risk should be addressed directly within the regulatory regime, or an appropriate uplift should be applied to the allowed return to avoid under-compensation and to maintain a fair and balanced return expectation."* We note that regulators elsewhere have made direct adjustments for this, including in Austria where the regulator

[16] Ofgem SSMD range reflects the range provided in the BPFM with updated data to June 2024.

has granted a 3.5% CoE uplift to compensate investors in gas networks for volume risk (which has the same implications as stranding risk); and New Zealand where the regulator has allowed gas networks a 0.05 beta uplift in recognition of asset stranding risk.

We have therefore evaluated the required Cost of Equity uplift (relative to a CoE using Ofgem's 'mid-point' beta, hence excluding gas-specific risk) which would be necessary to compensate investors for the probability-adjusted risk of asset stranding. Our methodology involves the following steps.

- **Step 1:** Develop a projection of long-term cashflows extending to a given date (e.g. 2050) under a plausible low-demand scenario (e.g. FES Electric Engagement). This can be obtained by assuming a high-level expenditure profile that could be associated with the low-demand scenario and applying it in the existing regulatory RAV model to generate allowed revenue and hence cashflow (i.e. Revenue – Totex) projections.
- **Step 2:** Calculate the achieved Internal Rate of Return (IRR) of investors in this scenario assuming that stranding arises – e.g. if bills are constrained to avoid socially unacceptable bill increases (therefore giving rise to some unrecovered revenue); and/or a proportion of the closing RAV becomes unrecoverable at the end of the assessment period. Clearly, in scenarios such as these, the achieved IRR for investors is below the required Cost of Equity (i.e. an 'unadjusted' CAPM estimate of CoE).
- **Step 3:** Calculate an allowed CoE uplift (relative to the unadjusted CAPM estimate) that would be required from GD3 onwards to make investors whole in this scenario – i.e. to give an IRR = unadjusted CAPM Cost of Equity.
- **Step 4:** Apply a probability assumption to this scenario arising, in order to estimate a probability-adjusted required allowed Cost of Equity accounting for the probability that stranding might occur (i.e. the expected or 'probability-weighted' loss).

Clearly, analysis of this type relies heavily on the assumptions used for e.g. Totex profile and probability of the scenario arising. Nevertheless, we find that – based on relatively conservative assumptions – the analysis implies a Cost of Equity range of c.6.3% (assuming our proposed 'Cautious Acceleration' for depreciation) to c.6.4% (assuming the status quo depreciation). In our view, this corroborates the requirement to set an allowed CoE at the top end of Ofgem's range (for example, by incorporating a gas-specific beta of 0.89 for the GD sector).

4 Cost of Debt (CoD)

We agree with Ofgem's proposal to continue indexing the Cost of Debt. Ofgem has also said that it will continue to use a calibration approach that aligns the CoD allowance to average debt costs. However, while Ofgem previously calibrated to average debt costs across the combined gas and ET sectors, it has decided now to split the gas (GDNs and NGT) and ET cohorts for the purpose of calibration. Ofgem explains that this is because structural differences may emerge between gas networks and ET networks due to the transition to net zero, which may impact debt costs. It considers that splitting the cohorts would address gas network concerns that debt costs are diverging due to increased perception of risk in the gas sector.

We agree that structural differences in debt costs between sectors are emerging that need to be captured in the CoD. This finding is supported by the **KPMG debt market analysis report**. KPMG has carried out a debt market analysis for the gas distribution sector and comparator sectors that has found:

- The cost of debt for gas networks is increasing both in public and private markets, as assessed by spreads over Government bonds and over the iBoxx Utilities index, adjusted for tenor. In the case of the latter, yields on new issuance by GDNs are now typically above the tenor-adjusted index yield.
- There is now a discernible difference between the relative cost of debt faced by gas and electricity networks, with spreads for the former widening relative to the latter since 2022.
- Debt pricing for gas networks is wider than equivalent debt pricing for electricity networks, with investors generally expecting a gas-specific premium of at least 25bps for new issuance of the same tenor and credit rating. Secondary spreads for gas bonds relative to the index are trading c.22bps wider than for electricity bonds, before considering new issue premia.

KPMG has also carried out a survey of debt investors (the **KPMG debt investor survey report**), which has found:

- Debt tenors available to gas networks have shortened compared to electricity networks, with lending appetite for gas now generally limited to 15 years or less.
- The majority of debt investors expect their exposure to the gas sector to decrease in the next 5 years; none of the debt investors surveyed expect their exposure to increase.
- These observations are explained by an increase in investors' risk perception due to uncertainty around long-term gas demand, alongside ESG considerations. Investors expect risks to increase in the GD sector over the next 5 years.
- The majority of investors considered that the provision of a government backstop would have a high impact in terms of mitigating the credit risk associated with asset stranding in the long term.

Given remaining uncertainty around the precise calibration of the Cost of Debt allowance, which will depend, among other things, on assumptions Ofgem adopts in forecasting the future cost of new debt for the GD sector, we are not currently able to provide a view on this (Ofgem's SSMD working assumption of 2.90% for the allowed Cost of Debt is simply a placeholder and could change materially by the time of Draft Determinations). We will review Ofgem's Cost of Debt proposals at Draft Determinations to assess whether they meet the stated objective of broadly matching debt allowances with sector-expected efficient debt costs for RIIO-GD3.

However, we are able to comment on a number of adjustments that need to be made to the CoD in order to capture additional costs not reflected in the iBoxx index. These are allowances for:

- Additional borrowing costs faced by all three network sectors;
- A further uplift to reflect market evidence of higher borrowing costs for gas networks compared to electricity networks; and
- The infrequent issuer premium.

We discuss each of these in turn below.

4.1 Additional cost of borrowing

Ofgem has stated at SSMD that it expects to continue to provide allowances for efficient additional cost of borrowing (ACB). It has said that it will review and, if appropriate, update the size of these allowances based on available evidence. For now, Ofgem has asked companies to continue to use the RIIO-2 ACB allowance of 25bps as a placeholder assumption within business plans while it completes its review of the allowance.

In the **NERA ENA additional cost of borrowing report**, NERA has carried out an independent assessment of the ACB for the RIIO-3 Price Control for an average energy network. It has found that additional borrowing costs for the energy sector are now at 57bps (compared to Ofgem's RIIO-2 allowance of 25bps). This is summarised in **Table 3** below.

Table 3. NERA assessment of the additional cost of borrowing for RIIO-3, relative to Ofgem

Component	Ofgem RIIO-GD2/T2 & ED2 (bps)	NERA (bps)
Transaction costs	6	6
Liquidity/RCF costs	4	13
Cost of Carry	10	12
CPIH premium	5	18-23 (21 point estimate)
New Issue Premium (NIP)	0	5
Total ACB	25	54-59 (57 point estimate)
Small Company / Infrequent Issuer Premia	6	10-18 (14 point estimate)
Total for Small Co./Infrequent issuer	31	64-77 (71 point estimate)

Source: **NERA ENA additional cost of borrowing report**, SSMD Finance Annex.

The difference between NERA's assessment and Ofgem's RIIO-2 position is driven by a number of factors:

- **Liquidity/RCF costs:** NERA's estimate of 13 bps compared to Ofgem's RIIO-2 allowance of 4bps reflects:
    - Ofgem's RIIO-2 allowance ignored the costs of drawing down RCF/working capital facilities, which is necessary to manage volatility in cash flows and meet working capital requirements. NERA assumes a 15% average drawdown of RCF.
    - NERA estimates the interest on the liquidity facility to be higher than at RIIO-2 due to material increases in short-term borrowing rates since 2021.
- **Cost of carry:** NERA estimates 12 bps compared to Ofgem's 10 bps allowance at RIIO-2. This is derived from updated company data on cash balances, using Ofgem's RIIO-2 approach.
- **CPIH premium:** NERA's estimate of 21 bps relative to Ofgem's 5 bps allowance at RIIO-2 reflects:
    - NERA estimates a higher cost of new CPI issuance, using bank quotes on the latest charges associated with structuring a nominal-to-CPI inflation swap.
    - NERA also accounts for CPI-CPIH basis risk, which companies are exposed to, but which Ofgem's allowance did not compensate for.
- **New Issue Premium (NIP):** NERA estimates 5 bps compared to no NIP allowance at RIIO-2. This is based on the latest market evidence which supports 15bps, consistent with the CAA's decision for Heathrow. Multiplying 15bps with 35% assumed new debt percentage gives c. 5 bps.
- We note that **Transaction Costs** remain unchanged from Ofgem's RIIO-2 allowance of 6bps. This is derived from companies' historical transaction cost data.

Additional borrowing costs for the sector are clearly higher than Ofgem's RIIO-2 allowance. For financial modelling purposes, we have assumed additional borrowing costs of c.36bps for a vanilla energy network. This is a conservative assumption since it excludes NERA's estimate of the CPIH premium of 21bps[17]. We have adopted this figure as a placeholder until we can reevaluate the evidence at the Draft Determinations stage.

For now, we consider Ofgem should review the evidence to assess whether its estimate has to be increased by at least 10bps for a vanilla energy network.

[17] None of NGN's debt has been issued on or swapped to an RPI basis, so it has not been necessary for us to manage RPI/CPIH basis risk to date. Nor has NGN directly issued CPI-linked debt, rather we have swapped existing fixed rate debt to a CPI basis. Whilst we have made a conservative assumption to ignore the CPIH premium element of Additional Cost of Borrowing for the Business Plan modelling purpose, we do not disagree with the assertion that managing CPIH basis risk has a cost, given that 30% of the notional company debt is assumed to be linked to the CPIH measure of inflation. In particular, as well as there being a premium to issue index-linked debt directly, swapping to CPI incurs higher bank credit charges than interest rate swaps. We also acknowledge that CPI-CPIH basis risk exists and should be compensated, given that there is currently no liquid market for either CPIH-linked debt or swaps.

4.2 Additional gas sector borrowing costs

There is clear evidence from a range of sources that the Cost of Debt in the GD sector is increasing. This has been greater than in electricity, i.e. there is now a discernible premium for gas sector debt relative to other network sectors, including electricity.

The **NERA GDN borrowing costs report** finds that the additional cost of borrowing for GDNs is 67bps, i.e. 10bps higher than for the average energy network. This is driven by investors' preference for shorter-tenor debt given increasing risks around the future role of gas networks. This uplift relative to the average networks is driven by:

- **Transaction costs**: analysis of GDN data shows reduced tenor increases costs from 6 to 8.5 bps, given the amortisation of up-front fees over a shorter life.
- **Cost of carry:** an increase of 7bps is a result of pre-financing costs being amortised over shorter bond tenors.

We note also that, as set out in **KPMG CRAs' risk perception report**, CRAs underlined that they would monitor whether and how the regulator would be accounting for gas-specific risks, including in terms of reflecting them in the WACC allowances.

4.3 Infrequent issuer premium

Finally, we agree with Ofgem's proposal to continue to provide an infrequent issuer premium. The latest evidence based on the **NERA ENA additional cost of borrowing report** suggests this premium should be in the range of 10-18bps (with a midpoint of 14bps), based on:

- Lower bound of 10 bps: this is the mid-point of 18-41 bps based on the CMS-implied premium[18], multiplied by 35% new debt assumed in RIIO-3. This represents a lower bound because CMS does not provide risk hedging for credit risk.
- Upper bound of 18 bps: this is 50bps (based on the bid-ask spread differential between the sub-benchmark sized issues and issues at and above £250m) multiplied by 35% new debt assumed in RIIO-3.

This compares to Ofgem's allowance at RIIO-2 of 6bps.

Overall, therefore, the current evidence suggests that Ofgem's 25bps additional costs of borrowing assumption needs to be increased to at least 60bps for an infrequent issuer GDN, comprising:

- Additional borrowing costs of 36bps for a vanilla energy network.
- Additional gas sector borrowing costs of at least 10bps.
- Infrequent issuer premium of 14bps.

[18] Under Constant Maturity Swaps, the issuing party receives a fixed iBoxx rate (on the date of issuance) and pays a rate that is reset daily based on the swap rates matching the duration of the debt issuance. With the CMS companies that are too small to issue benchmark-sized bonds on a frequent basis (e.g. annually) would be able to manage their interest rate risks in a similar way as though they had issued fixed rate bonds frequently. An alternative way to estimate the cost of infrequent issuance is through the illiquidity premium on the non-benchmark-sized bonds over the benchmarked ones, which results in an even higher premium as explained in the NERA report.

5 Inflation

As outlined in our response to Ofgem's Call For Input (CFI)[19] and to Ofgem's SSMC, we do not consider there to be a conceptual or practical issue with the treatment of inflation in the current regulatory regime. The existing arrangements are functioning in line with their long-standing design principles. They have served customer interests well by attracting a substantial amount of investment in upgrading and maintaining networks at an efficient cost of capital, which enables us to fulfil regulatory outputs and deliver exceptional customer service. Therefore, as we stated in our response to the SSMC, we do not think that changes to the inflation remuneration methodology are required.

However, at SSMD, Ofgem has decided that it will implement Option 1 for inflation treatment with respect to setting the allowed return on debt. Under Option 1, the Cost of Debt allowance for fixed-rate debt will be provided on a nominal rather than real basis, increasing the WACC. The portion of RAV that is aligned to the notional fixed rate debt assumption will no longer be indexed to outturn inflation.[20]

Relative to the current regulatory arrangements, this option will increase revenue and customer bills in the short term due to the higher WACC, but decrease revenue in the longer term due to the lower indexation of the RAV. This change in the profile of revenue is more reflective of company costs since there is a higher nominal coupon on fixed-rate debt which falls in real terms over time as it is not indexed with inflation. Therefore, if implemented correctly, we expect this approach to improve company financeability, especially in the short term.

However, as explained in **Chapter 7** of our Business Plan, it is important that Ofgem recognises that this policy (along with a change in depreciation policy – see **Section 7**) means that financeability testing results could be masking underlying financeability issues that could emerge in the longer term if Ofgem does not correctly calibrate financial parameters in RIIO-GD3 and future price controls. More detail is provided in **Chapter 7** of our RIIO-GD3 Business Plan (**Section 7.3.3**) and in **Appendix A23 BPFM Commentary**.

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[19] https://www.ofgem.gov.uk/publications/call-input-impact-high-inflation-network-price-control-operation

[20] SSMD Finance Annex, para 2.93

6 WACC

6.1 Gearing

Our financial policies focus on sustainable and prudent gearing that is efficient and balanced in both the short and long term. Our average gearing level at RIIO-GD2 has been c. 64% on average, well below both the 75% debt financial covenant default level and our own internal upper threshold of 70%. At RIIO-GD3 we will continue to target a level of gearing within the band of 60-70% on average over the period. The precise level of NGN's actual gearing in RIIO-GD3 will depend on many variables, some of which are outside of our control. These variables include the allowed Cost of Equity and Cost of Debt, Totex, ODI and ORA allowances, the exact profile of Depreciation allowance, the levels of inflation and interest rates, company performance, actual distributions and other elements of the price control. We provide consideration of different gearing levels in **Section 7.5.5** of our main Business Plan document.

Ofgem has decided to set a notional gearing level of **60%** at RIIO-3, aligned to the end of the glide path that was introduced at RIIO-GD2, which reduced the gearing level from 65% to 60% over the duration of the price control.

While we do not disagree with Ofgem's decision on notional gearing, we note that for NGN, reducing gearing to the notional level of 60% would require our equity holders to inject c. £209m of cash in 2026/27. However, Ofgem's proposed allowed Cost of Equity for RIIO-GD3 is not supported by the evidence and is therefore not compatible with the increased role equity is expected to play in such a scenario. Equity investors therefore cannot put more capital into the business unless the returns to equity are made sufficient and commensurate with the risks faced and the wider financial market environment. If Ofgem adopts a lower notional gearing assumption than companies are able to achieve without providing a sufficiently attractive package for the equity investors, it would further increase the perception of risk within the regulatory framework and place upward pressure on the long-term cost of equity for the sector.

6.2 Overall WACC

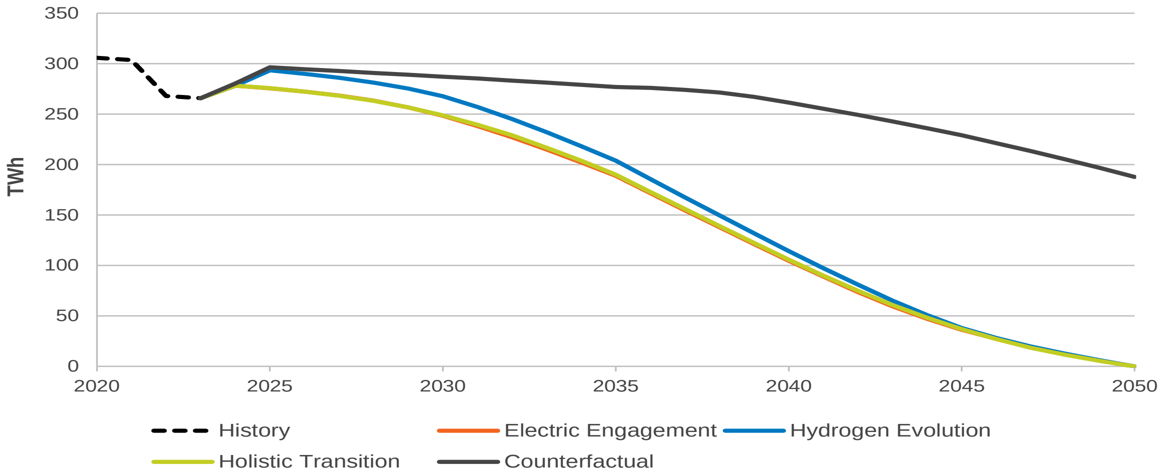
Table 1 in the Overview at the start of this document summarises the parameters that we have proposed in the sections above, relative to Ofgem's working assumptions. Based on these parameters, our assumed WACC for RIIO-GD3 is **4.50%**.

7 Depreciation

7.1 Background

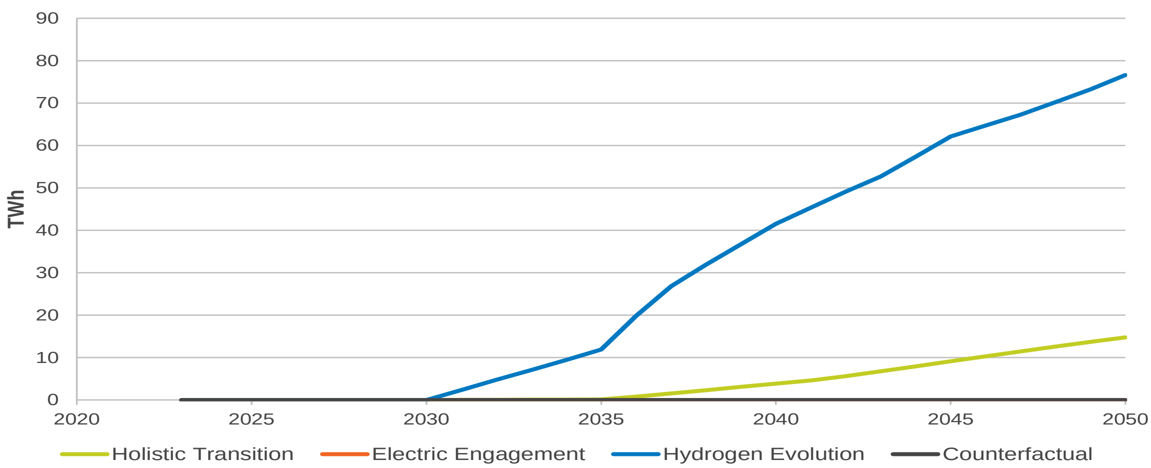
There is significant and growing uncertainty about the long-term role of gas distribution networks on the pathway to Net Zero. **Figure 7-1** and **Figure 7-2** below show historical demand and the latest FES 2024 forecasts for natural gas and hydrogen used for residential heat, respectively. While there are plausible scenarios in which a long-term future for the gas grid is critical for UK customers, there is also material gas demand uncertainty as the UK moves towards the 2050 Net Zero target.

Figure 7-1 Historical and FES 2024 forecast total residential annual gas demand for heat



Source: ESO (2024), FES 2024 Data Workbook – Figure EC.15

Figure 7-2 FES 2024 annual low carbon hydrogen demand for residential heat

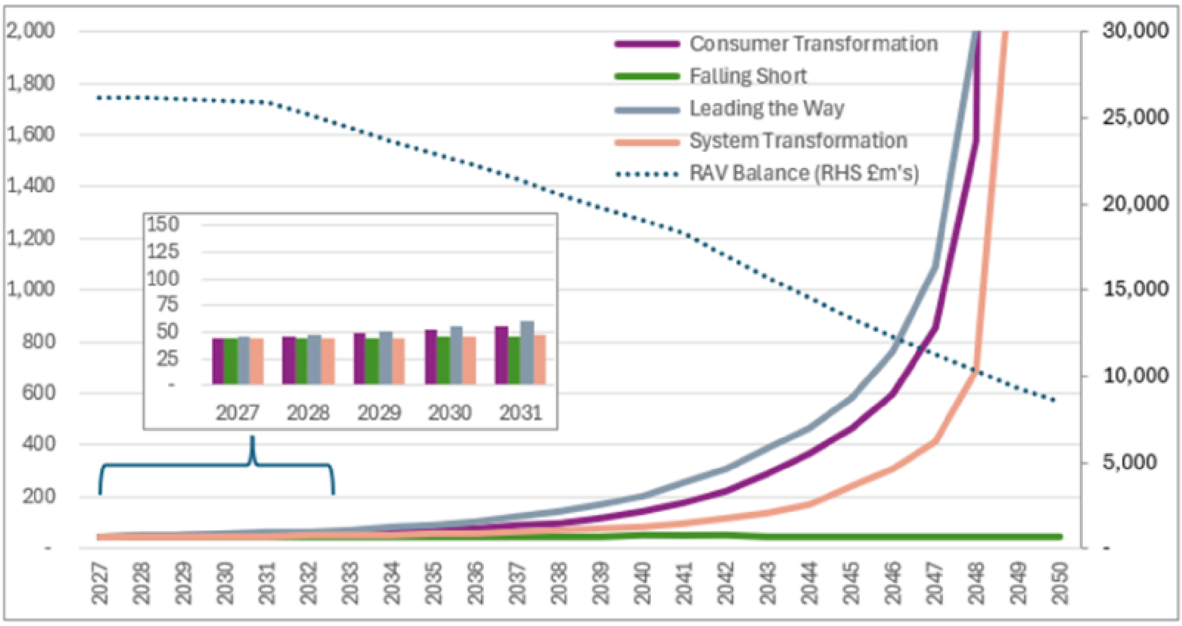


Source: ESO (2024), FES 2024 Data Workbook – Figure EC.19

Under the *Electric Engagement* pathway, natural gas and hydrogen demand for heating is forecast to fall sharply to ~105TWh in 2040. But under the *Hydrogen Evolution* scenario, the reduction is less dramatic (to ~155TWh comprising ~115TWh of natural gas and ~40TWh of hydrogen). These figures are necessarily approximations, but nevertheless, the scenario uncertainty presented in FES 2024 implies demand for gas distribution assets could potentially vary by a factor of c.1.5x in just 15 years from now.

As Ofgem's SSMD has identified, some FES scenarios could result in unpalatable increases in domestic customer bills in the 2040s (**Figure 7-3**).

Figure 7-3 Ofgem's GD consumer charge estimate under status quo depreciation policy



Source: Ofgem (July 2024), RIIO-3 SSMD – Finance Annex, Figure 15.

Note: The left-hand axis is the per annum cost to consumers of gas depreciation (in £, bar chart insert and solid lines), and the right-hand axis is the RAV balance over time (in £m, dotted line). Ofgem's SSMD analysis relies on FES 2023 since FES 2024 was published later than Ofgem's SSMD – but our initial review of the changes suggests the same conclusion would hold.

Given this scenario analysis, Ofgem stated its intention to accelerate depreciation in RIIO-GD3.[21] This will result in an acceleration of allowed revenue and an increase in gas bills in RIIO-GD3, which will be offset by correspondingly lower customer bills in future. However, Ofgem's indicative modelling shared with the gas networks following SSMD shows that material bill increases would still be likely in future under some FES scenarios, even if depreciation is accelerated.

[21] SSMD Finance Annex, paragraph 8.19

For RIIO-1 and RIIO-2, Ofgem had already made changes to the gas grid depreciation policy to reflect the long-term scenario uncertainty.

- In RIIO-GD1, the regulatory life for post-2002 assets was reduced to 45 years following a study conducted by CEPA.[22] Ofgem applied a frontloaded (sum-of-digits) schedule to all gas distribution assets.
- In RIIO-GT2, a front-loaded depreciation profile was also applied to gas transmission for post-2002. This was because "*Ofgem and other stakeholders found that there was a risk (falling mostly but not exclusively on consumers) that gas volumes continue to fall. For this reason, Ofgem decided to align the depreciation and asset life policy for the GD and GT sectors*".

7.2 Summary of NGN's view

We welcome Ofgem's leadership and openness to properly consider the issues caused by the wide range of demand scenarios and the need to develop an appropriate regulatory response. We agree with Ofgem that depreciation policy is an important tool to strike a balance between the interests of current and future customers and to help mitigate stranding risk.

It is important to note, however, that there remains material and genuine uncertainty around the future use of gas distribution networks. It is clear that FES scenarios such as Electric Engagement and Holistic Transition show a dramatic reduction in the use of gas (whether natural gas or hydrogen) in the next two decades. On the other hand, FES's Hydrogen Evolution scenario shows potential for sustained ongoing use. We also note that NGN does not necessarily endorse the FES scenarios themselves – we believe that in reality, on the path to Net Zero, the demand trajectory uncertainty for gas is likely to be substantially wider than is implied by FES as it stands.

Given this uncertainty, Ofgem should not build its policy for RAV recovery based solely on a fixed assumption that one particular scenario is the most likely outcome. The policy for RAV recovery should reflect a balanced view of possible long-term outcomes. This is in the customer interest to avoid a situation when customers today could end up over-paying (relative to future customers) if RAV recovery is excessively accelerated now. Any change to the RAV recovery policy must also balance questions of affordability/acceptance for today's customers and the need to ensure ongoing financeability and investability for the sector.

It is also essential that any change in Ofgem's approach to RAV recovery does not lead to underfunding the licensees in other areas (e.g. allowances for Capex, Repex, WACC etc). Ofgem is contemplating changes that would result in higher cashflows in RIIO-GD3 – but any assessment of financeability and investability must ensure that it 'sees through' any policy changes that re-profile cash between current and future customers (i.e. to ensure the underlying and long-term financeability and investability of the sector).

We also note that customer bills are likely to be rising in RIIO-GD3 even under the status quo depreciation profile – driven by higher interest rates; Ofgem's decision to apply 'Option 1' on inflation

[22]CEPA (2010) The economic lives of energy network assets. A report for Ofgem. https://www.ofgem.gov.uk/sites/default/files/docs/2010/12/cepa-econ-lives.pdf

policy; the various drivers of Totex that we have identified in our plan; and the moderate decline in customer numbers envisaged under some FES scenarios and NGN's forecast from the start of RIIO-GD3. A material acceleration of depreciation will exacerbate this problem today.

7.3 Ofgem's policy evaluation criteria

In the SSMD, Ofgem proposed four criteria to evaluate depreciation policy options:

- the level of consumer bills in RIIO-GD3;
- the level of consumer bills over time;
- perceived stranding risk; and
- financeability.

We agree with Ofgem that there is a need to establish transparent criteria for assessing the different options for changing depreciation policy. While at a high level, we think the proposed criteria appear sensible and relevant, it is important to draw out some of the details of aspects that should be given consideration. We group the first two criteria below as being related to customer bills; with the second two criteria as being related to investor impact.

7.3.1.1 Customer bills criteria

First, it is clear that striking the balance between the interests of current and future consumers is a key consideration for the choice of depreciation policy. As outlined above, accelerating depreciation will affect the balance of current versus future customer bills.

Striking a balance here is particularly challenging because, as explained above, there is still considerable scenario uncertainty regarding the future of gas networks. There is also uncertainty about the prospects for re-purposing gas grid assets for alternative uses in the long term. Any assessment of options should therefore take due care to recognise that long-term bill levels are inherently uncertain in order to avoid placing too high a burden on customers in earlier price controls. The trade-off Ofgem faces is to balance the *certainty* of bill increases today in order to offset the *risk* of higher bill increases in future. To weigh this trade-off appropriately, it is necessary to place at least some weight on scenarios where the grid continues to be used beyond 2050.

In the context of customer bills, it is also important to carefully evaluate the implications for different types of consumers, beyond the intertemporal distinction. In particular:

- Ofgem should aim to evaluate the impact of the policy on vulnerable customers, both in the near- and longer-term. We note that vulnerable customers are likely to be the slowest to switch to alternative heat sources and therefore they may end up bearing both higher charges today and the risk of steep tariff rises in future as other less vulnerable customers switch away. Clearly, this is also an issue which goes well beyond Ofgem's depreciation policy and may entail Government intervention being required in future.
- Similarly, it is also important for Ofgem to consider how acceleration of depreciation may affect industrial and commercial customers, and perhaps to review the share of allowed revenue that can be recovered based on the network usage.

We note that the impact of depreciation policy will not be isolated – the entirety of decisions in RIIO-GD3 will influence the level of bills, therefore the “net” effect of all policies should be considered alongside their individual effects.

7.3.1.2 Investor-impact criteria – stranding risk

Ofgem is right to consider the effect of its policy on stranding risk. We consider Ofgem could in fact go further here, and define a policy that relates to its ‘investability’ concept more widely, of which stranding risk is a part. We discuss stranding risk further at the end of this section, but here we consider further its proposed use as a criterion to assess depreciation options.

It would be helpful if Ofgem could further articulate how it intends to use this proposed criterion to select between depreciation options. For example:

- Would Ofgem set a ‘cap’ for long-term bill increases and only consider depreciation options where that cap is not breached under any scenario? If so, how would Ofgem define the cap?
- Alternatively, is there a different metric that Ofgem considers will ‘demonstrate’ the effect of different policy options on stranding risk? For example, will Ofgem target a specific RAV level at a particular date (say, 2040) and only take forward policy options which leave RAV at or below this target level?

It is also unclear to us if Ofgem envisages the stranding criterion as a ‘threshold’ test (of the sort highlighted above) or if there is a ‘marginal scale’ along which different policy options might be deemed more / less preferable using this criterion.

Finally, we query if Ofgem’s use of the term “perceived” in respect of stranding risk implies Ofgem’s view is that there is some distinction between “perceived” and “actual” risk. Our view is that the stranding risk exists, as is evident from Ofgem’s long-run charges analysis and the FES scenarios; and that investors clearly not only perceive this risk but also price it in as is evident from the analysis we set out in earlier sections on the Cost of Equity and Cost of Debt.

7.3.1.3 Investor-impact criteria – financeability

We also agree with Ofgem that financeability is an important consideration. Our view is that it should be regarded as a minimum ‘threshold’ test for any policy that is chosen, rather than an aspect that allows differentiation *between* different options. In other words, *any* policy Ofgem chooses must ensure that companies remain financeable. Beyond this, it is not obvious to us that financeability should be used as a criterion to select between different depreciation options, so long as they meet the threshold test.

One important aspect of this, however, is that the financeability test should explicitly have both a short-term and a long-term component. All else equal, accelerating depreciation will result in an increase in short-term cashflows and a decrease in long-term cashflows. Ofgem should therefore aim to “look through” any short-term boost to financeability metrics.

Finally, we would ask that Ofgem also considers any effect that its chosen depreciation policy might or should have on its dividend policy, given the expected increase in near-term cashflows. We discuss this fully in **Section 8**8.

7.4 Ofgem's four depreciation Options

Ofgem's SSMD outlined four Options for accelerating depreciation of gas distribution assets:[23]

- Option 1 proposes that RAV is returned by 2050 by depreciating assets on a sum-of-digits basis such that assets capitalised before the start of RIIO-GD3 are depreciated over 24 years, assets capitalised in the first year of RIIO-GD3 are depreciated over 23 years, and so on.
- Option 2 proposes that an acceleration (variation) factor is decided at each price control and applied to the depreciation profile obtained through Option 1, with the effect of accelerating/decelerating depreciation charges in that price control. The increased/decreased depreciation during previous price controls would be offset by the change in depreciation charges for the remainder of the asset life.
- Option 3 is equivalent to Option 2 with the exception that the depreciation profile is calculated on a straight-line basis rather than sum-of-digits.
- Option 4 mimics Option 1 with the exception that the change in policy only applies to assets capitalised in RIIO-GD3 onwards. Legacy assets depreciate in accordance with the current profile.

Given the genuine scenario uncertainty, our view is that targeting a RAV of zero by 2050 as proposed under Option 1-3 is neither necessary nor suitable. In fact, it would be wrong (from an intergenerational fairness perspective) for Ofgem to target a RAV of zero in 2050. Doing this creates the clear problem that customers today would be unfairly over-charged, relative to customers tomorrow, if it turns out that the gas grids are used for longer – a scenario to which Ofgem should attach some positive probability as discussed above.

Moreover, substantial work is being undertaken to understand how natural gas assets can be repurposed for the transportation of hydrogen and how their value can be transferred to serve this new use. We expect a significant amount of work will also be undertaken in the next two decades to understand other alternative uses of the gas assets. Targeting a specific value of RAV in the future makes a presumption about the repurposing value of these assets which cannot at this stage be substantiated.

We support Ofgem's intention to accelerate depreciation in RIIO-GD3. However, given the considerations above, our view is that such change should be undertaken through a simple and transparent approach - such as a straightforward change to asset lives or further front-loading of the depreciation profile. This will have the benefit of retaining the fundamental structure of the existing framework. Ofgem should also recognise that the currently high levels of uncertainty will ultimately resolve over time and there will be a possibility to course-correct at future price controls as more information emerges.

A reduction of asset lives to 35 years (with the recovery of the backlog of depreciation spread over time following, for example, the approach taken to Gas Transmission in RIIO-2 or to Gas Distribution in RIIO-1) from RIIO-GD3 would achieve the goal of reducing the RAV by 2050 compared with the status quo but with a smaller short-term bill impact than Ofgem's proposed options which reduce asset lives more aggressively. Such policy would be agnostic about the potential asset repurposing value, contrary to Options that target a RAV of zero (or any other specific number) by 2050. At the same time, this change would have a more immediate and meaningful effect than Ofgem's Option 4

[23] SSMD Finance Annex, Table 19.

which targets new assets only, which would only noticeably feed into customer bills towards the end of RIIO-GD3.

We are also concerned that the choice of acceleration factors under Options 2 and 3 can introduce a degree of arbitrariness to the price control which may increase perception of risk therefore impacting GDNs' investability and financeability. It may also introduce volatility of bills which Ofgem has generally considered to be not in the interest of consumers. In the event that Ofgem's chosen depreciation policy includes an acceleration (variation) factor, our view is that the process and rules applied to choosing the factor and any potential adjustments to it should be made clear and tested for robustness.

In any case, we recommend that Ofgem revisits the calibration of depreciation trajectory/profile ahead of RIIO-GD4, once more information is known about how the market is evolving – including following the anticipated 2026 Government decision on hydrogen for heat. NGN will continue to work with Ofgem and the Government to ensure equitable outcomes for current and future generations of consumers.

7.5 Accelerating depreciation can only partially mitigate the risk of stranding

Importantly, we note that any adjustment to regulatory depreciation which Ofgem chooses to implement can only ever partially mitigate the stranding risk we face. Stranding risk cannot be entirely removed – even in scenarios with more rapid acceleration of depreciation - because scenario uncertainty will remain and the pace of technological change, policy change and customer behaviour change are all highly uncertain. Moreover, even with Ofgem's contemplated default profile of accelerated depreciation, Ofgem's indicative modelling shows significant bill increases are required in the 2040s under some FES pathways – raising questions about the feasibility of whether required revenues can be recovered in the long term in those scenarios.

In light of this, we agree with Ofgem that one avenue for closing the gap would be via mechanisms outside of the standard RAV framework. Indeed, as Oxera notes *"A number of solutions are available to address the asset stranding risk. Some of these are outside of the regulatory framework and generally within the remit of the government, and sometimes they require legislation to be passed in order to be implemented"*.[24] In our view, it is highly likely that some form of socialisation and/or other Government (i.e. non-RIIO) mechanisms are going to be required. We are keen to support Ofgem in working with the Government to develop such mechanisms. We note that this discussion must also aim to achieve clarity around liability for decommissioning costs and the risks and uncertainty for investors arising from this.

Our assumption is that a binding Government commitment in this area is unlikely to be established in time for RIIO-GD3. Absent Government underwriting of RAV or other legislative commitment to RAV recovery, it is clear that Ofgem will need to compensate the stranding risk based on the facts today. Therefore, the asymmetric stranding risk that investors will continue to bear must also be compensated, as discussed in **Section 3.4.1.7** above.

[24] Oxera (March 2024), "Risks and investability of the GB gas distribution sector", p.32

8 Dividends

The principles that underpin our dividend policy for RIIO-GD3 will remain unchanged from RIIO-GD2. We have a long-standing dividend policy that recognises that shareholder returns should be transparent, that promotes us to exceed our commitments to customers, that supports sustainable and prudent financing and that is efficient and balanced in both the short and longer term. Dividends paid will reflect our performance against regulatory standards, ensuring that investors will continue to challenge us to deliver the best long-term results for all stakeholders.

We also maintain our view that equity investors have a role to play in managing the overall financeability of the business. Discretionary reductions in the dividend payout ratio relative to the base allowed return on equity could be appropriate in limited cases when necessitated by financial resilience considerations.

At SSMD, Ofgem has stated that it will continue to work with stakeholders to identify an appropriate dividend yield assumption for the notional company, but that the working assumption at SSMD is maintained at the 3% used at RIIO-GD2. This working assumption is significantly lower than even the base allowed return on equity of 5.43% and is therefore clearly insufficient.

We consider that it is inappropriate to assume a dividend yield as low as 3% as the baseline expectation for the notional GDN. In the **Oxera GDN dividends report**, Oxera assesses the role of dividends in the context of the RIIO-GD3 price control. It explains that dividend expectations *"depend on the ability of the business to reinvest the cash it generates into profitable investment opportunities"*, and that this has implications for investability: *"the investability assessment should assess the ability of the regulatory framework to not only attract and retain capital, but also to return it to shareholders."* Given the economic context of the gas sector over RIIO-GD3 and subsequent price controls, Oxera explains that an increase in the dividend yield is needed to reflect that the RAV growth of gas networks will be lower than before, or even negative at some point. Indeed, if the sector expects a decrease in RAV in the long run, then there should be a return of capital back to the investors, over and above the full payment of allowed equity returns in the form of dividends.

In particular, accelerated depreciation aims to return the RAV to investors faster than under the status quo. This should by definition lead to higher distributions back to equity holders, as there is more cash available in the short to medium term.

Ofgem's assumption at RIIO-GD2 that a significant portion of the allowed return on equity can be deferred is therefore incompatible with the current context of the GD sector. Dividend deferral can make sense in industries with expected long-term growth, whereby lower dividend yields in the short term can be acceptable to equity shareholders given the expected growth in future equity returns. Given that sustained RAV growth is no longer expected in the GD sector, a continued assumption of dividend deferral would lead to disproportional capital restructure incompatible with the optimal and efficient structure that has been in place in the sector and investor expectations going forward.

Based on these principles, we assume a base dividend yield of 6.36% p.a for RIIO-GD3, in line with NGN's proposed Cost of Equity estimate. This is lower than the most relevant EU benchmarks as outlined below.

The Oxera GDN dividends report assesses recent empirical evidence on dividend yields and payout ratios of traded European gas and electricity networks. It finds that the average dividend yield of European gas networks has increased from 5.4% in 2018 to 7.4% in 2023. This exceeds the average dividend yield of European electricity networks, which remain relatively constant over the same period (between 4.1–4.8%). Oxera also finds that payout ratios of the gas networks were higher on average than for electricity networks and higher than in previous years. That gap between gas and electricity networks' ratios has also widened, which is consistent with observations for dividend yields. These findings support the conceptual view that dividends in the gas sector need to be higher to reflect the context around lower RAV growth and accelerated depreciation.

Oxera also explains that for the purpose of financeability assessment, assumptions need to be consistent between RAV growth, gearing, cost of capital and dividend yield. In particular, "*a higher dividend yield is necessary to maintain the gearing at or around the notional assumption, as higher distributions to shareholders would counterbalance the downward pressure that the introduction of accelerated depreciation (and lower RAV growth more generally) would put on the GDNs' gearing*."

With this in mind, we have modelled gearing levels for the notional company and found that maintaining 60% gearing requires total distributions (base dividend yield plus return of capital) to be at an average level of c. 6.5% across the price control. Using Ofgem's dividend yield of 3% for the notional company this implies a return of equity capital of 3.5% on average for RIIO-GD3. For the actual company, we have calculated the total distributions to be c. 8.7% on average over RIIO-GD3. The latter value comprises a Base dividend yield of 6.36% (equal to NGN's proposed Cost of Equity) and a further 2.3% return of capital on average for the period of RIIO-GD3, which is lower compared with the notional company reduced in order not to exceed our 70% internal upper bound of gearing throughout the period.