
PR24

NORTHUMBRIAN
WATER *living water*

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RISK AND RETURN

APPENDIX A5 (NES06)



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EXECUTIVE SUMMARY

Northumbrian Water relies on investors to provide private finance to deliver its investment programmes and the benefits they provide to customers and the environment. Like other appointed water and wastewater companies in England Northumbrian Water Limited (NWL) is a privately owned and financed business. To meet new legal obligations, increase capacity in the asset base, maintain that asset base and improve services to customers and the environment the business needs to invest significantly. Water and wastewater services are very asset and capital intensive in comparison to other sectors, meaning that they require very substantial sums of new investment on an ongoing basis which needs to be raised from either equity or debt financing. Indeed, over the last three years for every £1 recovered from customers through the bills they pay the amount invested by NWL in its activities was around £1.08 so NWL spends more every year already than it earns from customer bills¹ with the gap being financed through borrowings.

If that investment cannot be raised, then the improvements it drives will not be forthcoming – service improvements to customers and the environment will suffer.

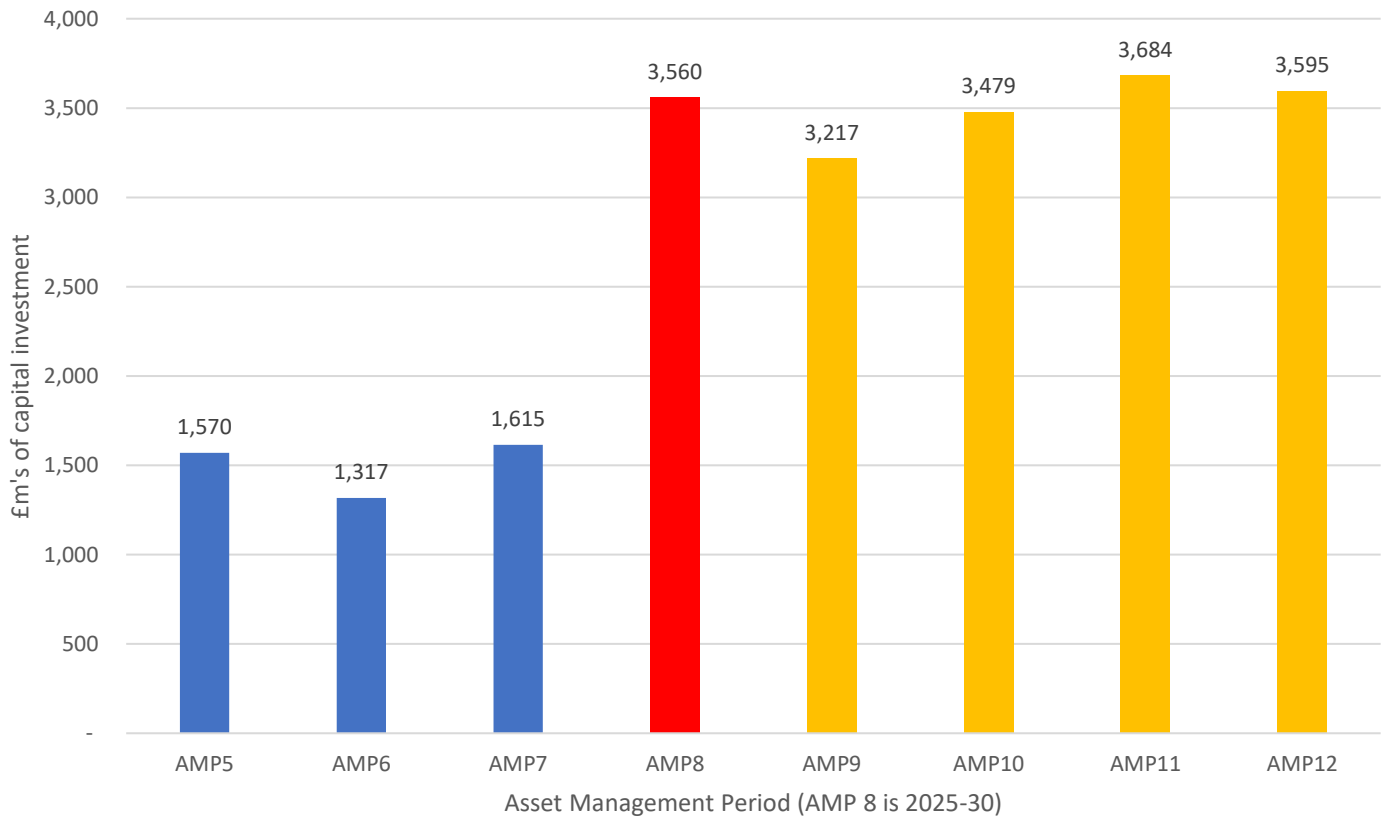
The capital requirement for the 2025-30 period is materially higher than it has been in the past and the long-term strategy (LTS) suggests that this may be true for the foreseeable future. Our business plan sets out a material increase in the amount of capital investment that will be needed across the business in the 2025-30 period and beyond. For the 2025-30 period the plan assumes that this is £3.6bn across the period and this represents a more than doubling of the investment in the current period. Underlying risk, and the proportion of it (including the systematic component) allocated to companies, has also increased. The LTS signals that this may well become the ‘new normal’ of investment over the next 25 years.

In developing our business plan, we have tested the financeability of the plan and considered what levels of debt and equity financing would be needed to deliver such a large increase in these programmes. We have also undertaken separate work with external advisors to explore different ways of financing the investment programme which offer different levels of financial resilience. For the 2025-30 period that work estimates that £400 of new equity investment will be required to finance the 2025-30 investment programme with the remainder coming from debt finance. This is required for the notional company structure (as per the PR24 methodology) to be able to maintain a Baa1/BBB+ credit rating. The LTS, which is a forecast of investment further into the future and is therefore less certain, suggests that a further £3.3bn of new equity may be required over the next 25 years². Given that around 90% of the new investment in our plan is driven by legal obligations we would expect these investment requirements to be consistent across all companies.

¹ 2020-23 APR Table 1D Cash Flow Cash invested/Cash generated.

² LTS page 65: 2025-50.

FIGURE 1: WE ARE INVESTING MORE THAN EVER TO MEET OUR LONG-TERM OBJECTIVES



Source: NWL LTS.

Equity providers can only be expected to invest if the return on offer is reasonable compared to the returns available on other assets or investments elsewhere which face similar risks. If the returns available to equity investors are below what could be earned elsewhere for a similar risk, then it would not be rational for investors to put the investment in. It will either not be forthcoming at all or will be reduced to the minimum possible level restraining the benefits to customers and the environment correspondingly.

We have used Ofwat’s ‘early view’ return as adjusted for updated market data’ WACC in our business plan. Ofwat set out its ‘early view’ of the appropriate allowed return for PR24 alongside its methodology statement for PR24 to provide helpful early certainty to investors. In that statement it was clear that companies were required to use this return in their business plans or face a penalty in the quality and ambition assessment of a 30-basis point reduction in the allowed cost of equity. In September 2023, just ahead of business plans being submitted, Ofwat informed companies that it would accept updates to that ‘early view’ based on market movements. Hence, we have used the ‘adjusted early view’ in the business plan including the financeability testing.

Markets have moved considerably since Ofwat assembled its ‘early view’ allowed return in September 2022 and it is now essential to take a fresh look at what the appropriate allowed return should be. The period between 2020

and now has been marked by unprecedented volatility and uncertainty. The global Covid-19 pandemic and the war in Ukraine has brought considerable volatility to financial markets and a recent period of very high inflation. In seeking to bring the inflationary pressures under control the Bank of England has raised base interest rates across successive reviews by its Monetary Policy Committee. When Ofwat set the 'early view' return base rates were at 2.25%, having previously been at 1% or below since March 2009 but they have now risen to 5.25%, the highest level since 2008. Ofwat recognised this latterly in their correspondence to companies in September 2023.

Under the Capital Asset Pricing Model (CAPM) which is used by Ofwat and other regulators to set the allowed returns it is necessary to start the calculation of equity returns at the risk-free-rate, that is, the return that investors need for investing in a 'riskless' asset. This is typically calculated by observing gilts and other 'riskless' assets proxies such as AAA corporate bonds. The pricing of gilts has moved significantly in line with the movement of interest rates as has debt pricing. Ofwat signalled that this might be the case in its methodology statement³.

Given the movement of interest rates and the Ofwat email of 8 September allowing updates to the EV WACC for market data changes, we initially sought to simply update the Ofwat 'early view' methodology allowing for these market movements. This led to an allowed return estimate of 3.55% (real wholesale return) and an allowed cost of equity of 4.47% or 6.56% in nominal terms. However, with the cost of new BBB debt at over 6% currently (average yield on Ofwat's preferred iBoxx BBB reference index was 6.27% in June 2022) and further interest rate rises possible the board of NWL could not see how the allowed return could be financeable to equity. While financeability testing confirmed that under the EV adjusted WACC, the plan would be financeable to debt under the notional company with a £400m equity injection and that the plan would enable NWL to maintain an investment grade credit rating of Baa1 for the notional company and Baa2 for the actual company before stress testing, it was not financeable to equity because higher or similar returns could be earned from alternatives that quite clearly have a lower risk profile. At the same time the debt financeability metrics remained marginal and several stress tests would have required equity injections to retain the credit rating under Ofwat's 'early view' return but the metrics improved significantly under our alternative return.

Moreover, Ofwat proposed to use the Market to Asset Ratios (MAR) of the listed companies as its principal 'cross check' on the allowed return⁴. During the period leading up to the business plan submission the MAR of one of these companies fell below one (and would have been far below one when that company's financing position is accounted for).

Given these issues it became necessary to look afresh at the allowed return as the Board of NWL could not see how Ofwat's 'early view', even corrected for updated market information would be financeable or indeed consistent with a reasonable interpretation of Ofwat's statutory duty to make sure that (efficient) companies can finance their functions including earning a reasonable return on the capital invested⁵.

³ Ofwat, 2022, PR24 methodology p24, App11.

⁴ Appendix 11, Section 3.6.2 and Appendix A2.

⁵ <https://www.ofwat.gov.uk/about-us/our-duties/>.

We have therefore carried out a line-by-line review of the allowed return including reflecting on the most recent decisions from the CMA and the ongoing developments in other sectors. We set out in greater detail the review of each of the parameters in Section 4 and Annex A of this document but in summary:

- **We retain Ofwat’s notional gearing assumption of 55%.** This does not represent the gearing of any privately owned company in the sector currently and doesn’t benchmark well with other infrastructure sectors and we therefore consider is very unlikely to represent the efficient financing structure of the sector. However, the recent high-inflationary period and the expected true-ups at the end of the 2025-30 period will have a natural de-levering effect and a 5% downward movement in gearing across the AMP from the 60% position in PR19 does not seem unreasonable. Moreover, the increasing scale of the investment requirements for AMP8 and into the future does suggest that a larger equity buffer may be prudent.
- **We make a number of amendments to Ofwat’s ‘early view’ equity and debt parameters to reflect, in full, the CMA’s PR19 redetermination decisions.** We have consistently argued that these decisions, which represent the longest and most thorough review of these matters since privatisation in our opinion, need to be maintained and that there should be a high bar for departing from them⁶. We consider that parliament designed the CMA appeal mechanism to ensure that in extremis disagreements of this sort could be referred to them for settlement and our approach seeks to follow that redetermination as closely as possible.

The table below provides a comparison of the various cost of capital elements and returns including A. Ofwat’s PR19 allowed return, B. The CMA’s PR19 final determination, C. Ofwat’s raw ‘early view’ for PR24, D. The Ofwat ‘early view’ value updated for market movements and E. Our NWL alternative return. The source for the NWL alternative return is summarised in the final column of the table.

⁶ For example: NWL Response to PR24 and Beyond: Creating tomorrow together July 2021 para 13.

FIGURE 2: PARAMETER BY PARAMETER REVIEW OF THE ALLOWED RETURN SUMMARY

Component	A. Ofwat (PR19 FD)	B. CMA PR19 FD	Real, CPIH C. PR24 early view (EV)	D. PR24 EV updated	E. NWL Alternate	Source for E
Gearing	60%	60%	55%	55%	55%	<ul style="list-style-type: none"> Uses Ofwat's 'early view' notional gearing.
Risk-free rate	-1.39%	-1.34%	0.47%	1.33%	1.99%	<ul style="list-style-type: none"> Follows the CMA PR19 method using a mix of gilts and AAA bonds updated for market movements. 23 June data.
Total market return	6.50%	6.80%	6.46%	6.46%	6.80%	<ul style="list-style-type: none"> Uses the TMR figure from the CMA PR19 redetermination directly.
Equity risk premium	7.89%	8.15%	5.99%	5.13%	4.82%	<ul style="list-style-type: none"> Updated to reflect RFR changes.
Debt beta	0.125	0.075	0.100	0.100	0.075	<ul style="list-style-type: none"> Uses figure from the CMA PR19 redetermination directly.
Unlevered beta	0.29	0.29	0.277	0.277	0.29	<ul style="list-style-type: none"> Uses figure from the CMA PR19 redetermination directly.
EV gearing	54.20%	54.20%	53.35%	53.35%	54.20%	<ul style="list-style-type: none"> Uses figure from the CMA PR19 redetermination directly.
Asset beta on PR19 basis	0.36	0.331	0.330	0.330	0.331	<ul style="list-style-type: none"> Uses figure from the CMA PR19 redetermination directly.
Notional equity beta	0.71	0.71	0.612	0.612	0.643	<ul style="list-style-type: none"> Updated for notional gearing change at 55%.
Aiming up		0.25%			0.25%	<ul style="list-style-type: none"> Uses figure from the CMA PR19 redetermination directly which has been cross-checked with the risk/return balance in the package.
Cost of equity	4.19%	4.73%	4.14%	4.47%	5.34%	
% embedded debt	80%	83%	83%	83%	83%	<ul style="list-style-type: none"> Uses Ofwat 'early view' but will need updating following industry business plans.
Cost of new debt	0.53%	0.19%	3.28%	3.67%	3.82%	<ul style="list-style-type: none"> Uses average IBOXX data from June 2023 excluding Ofwat's 'halo' adjustment consistent with the CMA PR19 redetermination.
Cost of embedded debt	2.42%	2.47%	2.34%	2.50%	2.50%	<ul style="list-style-type: none"> Uses Ofwat's 'early view' debt model but updates for market will need updating from industry APR24 and business plan data.
Issuance costs	0.10%	0.10%	0.10%	0.10%	0.10%	<ul style="list-style-type: none"> Uses Ofwat's 'early view'.
Overall cost of debt	2.14%	2.18%	2.60%	2.80%	2.80%	
Appointee WACC (vanilla)	2.96%	3.20%	3.29%	3.55%	3.95%	
Retail deduction	0.04%	0.08%	0.06%	0.06%	0.00%	<ul style="list-style-type: none"> Updating this for latest data we consider will reduce the retail margin adjustment to zero.
Wholesale WACC (vanilla)	2.92%	3.12%	3.23%	3.49%	3.95%	

Sources: A. Ofwat PR19 final determinations, B. CMA PR19 redeterminations, C. Ofwat PR24 final methodology statement, D. NWL analysis.

The NWL alternative real cost of equity of 5.34% equates to 7.44% in nominal terms. With the cost of new BBB debt at over 6% currently (average yield on Ofwat's preferred iBoxx BBB reference index was 6.27% in June 2023) and returns on risk free assets of around 4-5% the proposed return to shareholders is in line with the kind of market benchmarks that investors will be measuring water companies against. A real terms differential of 100-150bps would to us appear a

credible position that would be financeable to equity and we demonstrate elsewhere in this document is actually far less than the differential observed historically between debt and equity returns.

The cost of equity value proposed is within the bottom half of the range presented in an independent report that has been commissioned by a range of companies across the sector (7.21- 7.81%). This is driven by more closely following the CMA's PR19 positions.

The Board of NWL considers that there is therefore compelling evidence that a wholesale WACC of 3.95% (real CPIH) is the necessary level of return to be able to attract investment and be financeable to equity. Therefore, it has good reason to propose an alternative return which departs from the 'early view' values that Ofwat has previously set out. We note that independent assurance provided by First Economics (NES69) also supports this view.

We propose to index the risk-free rate within our 'alternative return' which will help to reduce the impact of higher returns on customer bills given affordability pressures. The increase in the allowed return from Ofwat's early view is largely driven by changes in market rates driven by interest rate rises to address inflation. Interest rates movements from current levels to 2030 are significantly uncertain and so setting a fixed rate in line with Ofwat's early view methodology is likely to inflate returns beyond what the return required for a riskless asset is across the 2025-30 period. Some other regulators have already introduced indexation of the risk-free rate⁷ and Ofwat left the issue open in its methodology statement⁸. Indexation would enable these savings to be passed on to customers at this difficult time if rates fall as forecast while still making sure that returns are sufficient for equity shareholders. Overall, we forecast that the indexation of the risk-free rate could return £92m to customers over the period⁹.

Following on from this, the Board can confirm that, if we use NWLs 'alternative WACC' and Ofwat's proposed notional capital structure (55% gearing), our plan is consistent with us achieving an investment grade credit rating for debt (BBB+/Baa1 credit rating) and a return to equity that reflects the risks faced and offers a fair return in comparison to other benchmarks. Therefore, under those assumptions, we would be financeable on a notional basis specifically in relation to debt with greater headroom in the credit metrics and for shocks and stresses that may arise. Moreover, the revised cost of equity would be consistent with the risks faced by our equity investors including the analysis contained in this document on the balance of risk and reward.

On both a notional and an actual company basis the business plan requires £400m of new equity capital to be raised under either financing approach. The board therefore submits the plan on the basis that this equity will need to be raised

⁷ Indexation of the risk-free rate is common practise in the energy sector.

(R1102 ED2 https://www.ofgem.gov.uk/sites/default/files/docs/2021/03/r1102_ed2_ssmd_annex_3_finance_0.pdf, Section 3.17.

⁸ Appendix 11, S3.3.5.

⁹ EI analysis of a WACC falling from 3.88% to 3.59% over the period. Economic Insight, 2023, ESTIMATING THE CUSTOMER BENEFIT OF INDEXING THE RfR, Analysis for Northumbrian Water.

to support the plan and is confident in raising the equity under the alternative WACC but not confident under Ofwat's 'early view' even when that is updated for market movements.

We have socially responsible approaches to our dividend policy; executive pay; and taxation, which are consistent with Ofwat's guidance and criteria on these matters.

INTRODUCTION

This appendix sets out the approach we have taken to the balance of risk and return in our Business Plan. The Final Methodology for PR24 sets out some minimum requirements for risk and return as part of the Quality and Ambition Assessment. The table below sets out where these requirements are addressed and summarises our response to each test.

FIGURE 3: MINIMUM EXPECTATIONS FOR RISK AND RETURN IN PR24 BUSINESS PLANS

PR24 methodology minimum expectations	Where this is covered
<p>The Business Plan uses our early view of the allowed return on capital or provides compelling evidence that another rate is more appropriate. Aligning risk and return 7.3.</p>	<p>We use Ofwat’s ‘early view’ return updated for market movements in line with the September correspondence from Ofwat for our plan and to test for financeability. See Section 4 where we set out the Board’s concerns with the Ofwat ‘early view’ and why we took the view that a fresh review was needed of this figure. Section 5 then sets out our ‘alternative return’.</p>
<p>The company’s submission provides sufficient and convincing evidence that the overall business plan provides an appropriate balance of risk and return. Aligning risk and return 7.2.</p>	<p>See Section 3. We have set out the overall risk position for the business plan including the outcome delivery incentives and investment proposals in the plan that we believe are deliverable. If these were amended by Ofwat, this would change the balance of risk and return.</p> <p>We have assessed our projected RoRE range of +4.0% to -9.5%. This is asymmetric to the downside, due to (among other reasons) historical industry totex underperformance, the inclusion of several penalty-only ODIs and asymmetric cost sharing rates. We address this asymmetry in the proposed return.</p>
<p>If the company’s business plan includes bespoke uncertainty mechanisms and notified items, then these meet the expectations we have set out in our methodology. Aligning risk and return 7.2.</p>	<p>See A3 - Costs (NES04). All the uncertainty mechanisms we propose are symmetrical and are proposed to protect customers, should external circumstances change over 2025-30.</p> <p>At a time of increased volatility, we believe there is a case for revisiting the case of indexation of the risk-free rate component of the cost of equity. This would protect customers, should interest rates decline from 2024 levels. There is already an equivalent mechanism for the cost of new debt, which has been generally supported by stakeholders. Ofgem already take a similar approach and we note Ofwat are already considering this as an option. This approach forms part of our ‘alternative WACC’.</p>

The company's Board provides assurance that its business plan is financeable on the basis of the notional structure, and this is supported by sufficient and convincing evidence of the steps taken to provide this assurance.

Financeability 8.1; 8.4; 8.5.

The business plan uses appropriate cost recovery rates and provides sufficient and convincing evidence for any adjustments to underlying PAYG and RCV run-off rates.

Financeability 8.2.

The company's Board has provided assurance that it will maintain financial resilience during 2025-30 and in the long-term, taking account of its business plan under its financing and capital structure. We expect also this is supported by sufficient and convincing evidence of the steps taken to provide this assurance and of the steps to improve financial resilience where necessary.

Promoting financial resilience 9.2; 9.3.

[A2 - Data, information and assurance](#) (NES03) provides the assurance statement and summarises the evidence that the Board has considered in giving that assurance. The Northumbrian Water Board confirms that our business plan is financeable (from a debt perspective) under Ofwat's proposed notional gearing. We have set a financial rating target for the notional company of BBB+/Baa1 and made equity injection assumptions where necessary, to make sure this rating is achieved.

We set out an alternative NWL return that would be financeable to equity and is in line with the kind of market benchmarks that investors will be measuring water companies against.

We have set a financial rating target of at least BBB/Baa2 for the actual company. We are currently rated at BBB/Baa2; and we do not have any material concerns over financial resilience at that credit rating. Meeting the financeability hurdle for the actual company requires a substantial equity raising, which the Board has accepted in signing off the plan, but we are concerned about the equity financeability of the plan when the Ofwat 'early view' WACC is used. We highlight these concerns in Section [4](#).

See Section [6.3](#). As we did in PR19, we have set PAYG rates at the 'natural rate' (operating costs as a percentage of totex). We have set run-off rates to within the limits set out in Table 7.2 of the Ofwat guidance. Our bioresources PR19 run-off rate was already below the guidance level, so we have kept it at the same rate.

[A2 - Data, information and assurance](#) (NES03) provides the assurance statement and supporting evidence from the Board. We have carried out a series of robust stress tests, as set out the guidance, for the notional and actual capital structures. We have set out the mitigations in place where these stress tests breached the BBB/Baa2 threshold for the actual company or the BBB+/Baa1 metric thresholds for the notional company. These are summarised at Section [6.2](#) and Annex [C](#).

The business plan sets out the company's dividend policy for 2025-30; and the policy is in line with our guidance. Promoting financial resilience 9.5.

See Section 7. We have set out our dividend policy as approved by our Board in 2022. The policy makes a formal and explicit link between performance and how dividends are set, and we have shown how it meets the Ofwat guidance. Across the 2019-23 period average dividend yield for NWL on a notional company basis is c.4.4% which is consistent with Ofwat's PR19 return on equity expectations.

The business plan sets out the company's policy for performance related executive pay during 2025-30 and the policy is in line with our guidance and Board leadership, transparency and governance principles. Promoting financial resilience 9.6.

See Section 7. We have set out our policy for performance related executive pay in our plan and how it meets the Ofwat guidance.¹⁰ We have not amended our policy which was positively endorsed by Ofwat in 2021¹¹ but intend to update the metrics and targets as appropriate in line with the changes to these in the regulatory settlement but also reflecting the priorities of customers in our research.

¹⁰ 'Creating tomorrow, together: consulting on our methodology for PR24. Appendix 12 – Business plan incentives.' Ofwat (July 2022).

¹¹ 'Board leadership, transparency and governance – Report on how companies are meeting the principles.' Ofwat (February 2021); page 10.

THE RISK AND REWARD CONTEXT AT PR24

This section highlights the key risk and reward context relevant to setting the appropriate rate of return at PR24. In turn, we address the following:

- The fact that our plan needs to deliver the largest ever capital programme in the UK water sector's history.
- Investor risk has increased at PR24, with an additional increased skew to the downside, requiring an increase in allowed returns, relative to PR19.
- The PR19 determinations, coupled with the high inflationary period and uncertainty appears to have been very challenging, with the industry now generating returns below the allowed cost of equity (see RORE Section 3.3.2). Thus, even before the increase in risk at PR24, there was a need to recalibrate returns and reconsider the risk.
- Consistent with the above, we expect risk under our plan for PR24 to be skewed to the downside.

THE IMPORTANCE OF PRIVATE CAPITAL FOR CUSTOMERS AND THE ENVIRONMENT

Northumbrian Water relies on investors to provide private finance to deliver its investment programmes and the benefits they provide to customers and the environment. Like other appointed water and wastewater companies in England Northumbrian Water Limited (NWL) is a privately owned and financed business. To meet new legal obligations, increase capacity in the asset base, maintain that asset base and improve services to customers and the environment the business needs to invest significantly. Water and wastewater services are very asset and capital intensive in comparison to other sectors, meaning that they require very substantial sums of new investment on an ongoing basis which needs to be raised from either equity or debt financing. Indeed, over the last three years for every £1 recovered from customers through the bills they pay the amount invested by NWL in its activities was around £1.08 so NWL spends more every year already than it earns from customer bills¹² with the gap being financed through borrowings.

If that investment cannot be raised, then the improvements it drives will not be forthcoming – service improvements to customers and the environment will suffer.

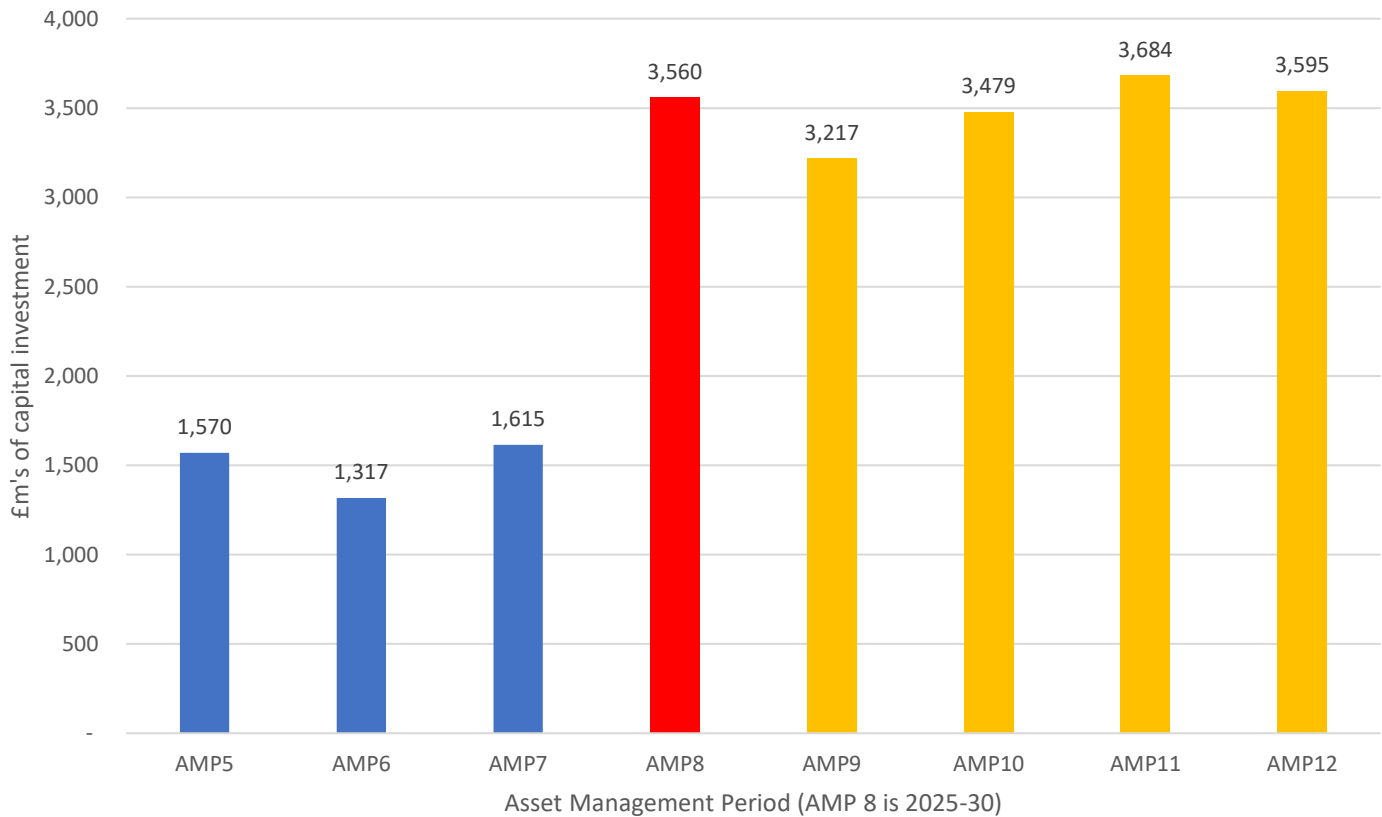
THE SCALE OF INVESTMENT NEEDED IN THE FUTURE

Our business plan for 2025-2030 will need to deliver the largest scale investment programme since the Victorians. This investment is vital, in order to meet our environmental and societal aspirations and legal obligations. It is also essential to unlocking industry level productivity.

The scale and nature of investment is such that it requires us, and the water industry more broadly, to secure substantial new debt and equity finance. Indeed, the quantum of new equity required under our business plan is substantial at c.£400m; and this trend is expected to continue in future periods, as highlighted in our [long-term strategy](#) (NES_LTDS).

¹² 2020-23 APR Table 1D Cash Flow Cash invested/Cash generated.

FIGURE 4: A STEP CHANGE IN CAPEX IN AMP8 IS EXPECTED TO BE MAINTAINED UPTO 2050 (£M'S)



SOURCE: NWL LTDS¹³.

To attract this investment, it is essential that the regulatory regime allows an efficient, well-run, company to make a reasonable return on that investment. This includes ensuring that equity investors face a ‘fair-bet’, whereby (for an efficient company that delivers on its obligations and targets) investors’ central expectation is that they will earn a rate of return commensurate with the risks they face. Investors have a choice of investments outside of the water industry, by sector and internationally and the water industry will need to compete for that investment.

By way of illustration, the Regulatory Capital Value was projected to have real growth of 6.5% for AMP7¹⁴. The average real terms growth per AMP from AMP8 to AMP12 is projected to be 32%¹⁵, more than doubling from 2025 levels.

¹³ <https://www.nwg.co.uk/globalassets/corporate/about-us-pdfs/long-term-delivery-strategy-final.pdf>.

¹⁴ Ofwat PR19 FD, Risk and Return Table 6.3.

¹⁵ LTDS model.

UNDERSTANDING THE LEVEL OF RISK INVESTORS ARE TAKING

Detailing key changes in risk, allocation and symmetry

Historically, the water sector has been seen as low risk by investors. This is due to the monopoly service provision, the protection of the regulatory capital value, inflation linked revenues, the existence of reopeners and Ofwat's financing duty. However, these are all built into the historically low cost of capital values set in previous determinations and the low debt costs that underpin them.

The key point for the PR24 process is to consider, at a time of significant change for investors, how the risk return balance may be changing, particularly for 2025 onwards. Investors are being asked not just to retain their investment in the sector, but significantly increase it to finance service improvements for customers.

When considering risk at PR24, in the context of setting the risk-reward balance, it is helpful to distinguish between:

- **Changes in underlying risk.** This can arise either because: (i) risk itself increases / decreases (for example, demand or cost risk may be 'greater' or 'smaller' than in the past; say because water consumption, or weather, patterns are becoming more variable); or (ii) because the mix of activities (each having its own underlying risk) being carried out is changing, relative to the past.
- **Changes in the allocation of risk.** Changes in the regulatory method that result in 'more', or 'less', of the systematic component of the above risk being allocated to companies or customers.
- **Changes in the symmetry of risk.** Whether companies face a greater degree of downside risk, relative to upside risk, or vice versa, compared to the past.

In our assessment, there is both a greater amount of risk (including systematic risk) allocated to companies at PR24 and a greater degree of asymmetrical downside skew to the risk faced by companies, compared to PR19 (and to the CMA PR19 redeterminations). Investors also require compensation for the downside skew to risk, which could be compensated for directly (or, if this did not happen, could be offset through an uplift to the equity return, in addition to that required for the increase in systematic risk).

The following table summarises our assessment of the key changes in risk over PR24. This draws on evidence from external reports for Water UK¹⁶ and companies on relative risk analysis work¹⁷, but also reflects our own views.

¹⁶ 'Relative risk analysis and beta estimation for PR24.' KPMG (2022).

¹⁷ 'Analysis of Relative Risk of Price Control Design at PR14, PR19 and PR24.' PA Consulting (2022).

TABLE 1: NORTHUMBRIAN WATER ASSESSMENT OF CHANGES IN INVESTOR RISK

Issue	Risk change (PR24 compared to PR19 / CMA PR19 redeterminations)	Our assessment of the impact
<p>Cost (totex) risk</p>	<p>Underlying cost risk: Extreme weather events, such as droughts and flooding, are expected to increase in future, which will increase underlying cost risk and make capacity planning more challenging. Under the PR19 Performance Commitment (PC)/Outcome Delivery Incentive (ODI) definitions some potential exclusions were provided for certain extreme weather events but our experience in the current period has highlighted that these are being removed for PR24. Our plan separately includes additional investment to support resilience and partially mitigate this risk. Macroeconomic uncertainty over interest rates and energy costs have also increased.</p> <p>The increasing scale of the overall capital programme (more than doubling) set out in the business plan combined with the fact that an increasing proportion of the plan relates to enhancement expenditure rather than base expenditure is likely to increase the underlying systematic risk in the package. At the same time the application of Price control Deliverables (PCDs) to these costs is likely to increase the asymmetry of risk to companies.</p> <p>Allocation of cost risk: At PR19, Ofwat had ‘sculpted’ cost sharing rates, which were based on the ratio of company Plan totex to Ofwat’s assessed totex. For companies whose view of efficient costs aligned with Ofwat’s, a symmetrical sharing rate for over / under spending of 50% applied. For NWL, the FD sharing rates were 46%-54% (water) and 34%-66% (wastewater).</p> <p>In contrast, at PR24 Ofwat is proposing a simpler approach, whereby sharing rates vary with its QAA categorisation of companies. For companies classified as ‘outstanding’ or ‘standard’, a symmetrical sharing rate of 50% applies. For ‘lacking ambition’ this becomes 55%-45%; and for ‘inadequate’, 60%-40%.</p> <p>In comparison, the CMA set the same sharing rate across <i>all</i> companies that sought a redetermination at PR19, of 55%-45%.</p> <p>It is difficult to make like-for-like comparisons of cost risk allocation over PR19 to PR24, due to the above differences in methods. However, for a company whose view of efficient costs aligns to Ofwat (and which accepts Ofwat’s minimum expectation stipulations under its QAA), it seems likely that the sharing rates will be unchanged (50% symmetrically), or similar, as between PR19 and PR24. However, it is important to note that neither: (i) agreeing with Ofwat’s assessment of costs; nor (ii) performance against its QAA assessment, would be expected to <i>strictly</i> align to a company being efficient per se. For example, if a company objectively considered Ofwat’s common ODI incentive</p>	<p>Slight increase is systematic component of cost risk.</p> <p>We discuss this further in Section 3.3.3 below but we expect the change in the scale and nature of the investment programme to increase systematic and asymmetric risk.</p> <p>Allocation of cost risk broadly unchanged. However, because sharing rates are determined by QAA assessments (which are not <i>wholly</i> based on efficiency) there is the <i>possibility</i> that efficient firms face a greater cost risk allocation at PR24, as compared to the PR19 FDs and the CMA redeterminations. For the purpose of assessing the WACC, however, we conservatively assume either no, or modest, impact vis-à-vis risk allocation.</p>

	<p>rates, or WACC, were inappropriate, there is a risk it would be placed in the 'inadequate' QAA category for reasons unrelated to efficiency. Given this, it should be highlighted that Ofwat's PR24 cost sharing rates give rise to the <u>possibility</u> that an efficient firm faces a 60%-40% sharing rate. In contrast, at PR19 that possibility did not arise. Nor did it under the CMA's redeterminations, as all firms (including efficient firms) faced a 55-45% sharing rate.</p> <p>Symmetry of cost risk: For PR24, Ofwat is considering setting cost benchmarks 'beyond' the upper quartile (as used at PR19). In addition, by introducing a separate cost challenge for bioresources, Ofwat is not reflecting the fact that firms allocate resources to balance trade-offs, in order to maximise overall efficiency.</p>	<p>Unknown until the cost benchmark is set by Ofwat under the PR24 FDs. However, we expect more demanding benchmarks to increase downside risk, relative to PR19 (as will the new bioresources efficiency challenge).</p>
<p>Financing</p>	<p>The level of future interest rates has become increasingly volatile, with a consequential impact on the risk-free rate and the cost of new debt.</p> <p>For the former, we are proposing indexation of the risk-free rate.</p> <p>For the latter, Ofwat introduced an indexation approach for the cost of new debt at PR19 which reduces risk. Ofwat is fully transitioning to CPIH indexation at PR24; and is also removing the RPI/CPIH true-up mechanism. This means that companies with legacy RPI-linked debt are more exposed to variation between RPI and CPIH inflation than previously (although this will unwind over time, as the industry moves towards CPI-linked debt).</p>	<p>While underlying financing costs risks are increasing, the use of indexation approaches should mitigate this. There is therefore unlikely to be any material change in finance risk exposure at PR24, relative to PR19 under our 'alternative return' but financing risk is likely to increase under Ofwat's 'early view' which is not subject to risk free rate indexation.</p>
<p>ODI risk (including measures of experience)</p>	<p>Underlying ODI risk: Extreme weather events are expected to increase in the future, which will impact overall performance risk for certain PCs.¹⁸</p> <p>Allocation of risk: Ofwat is implementing a five-year aggregate cap of +/- 5% RoRE for PR24, which limits overall risk. However, under the regulator's proposals there will be a removal of caps / collars and deadbands on ODIs, in</p>	<p>Increase in systematic risk exposure, but likely relatively modest over the time horizon of a price control particularly given our proposals for power and flooding investment.</p> <p>A greater amount of risk is allocated to companies at PR24, of which</p>

¹⁸ 'Managing extreme weather event risk in the regulatory framework,' Frontier Economics (October 2022); page 8.

	<p>addition to it no longer being possible to ‘suspend’ ODI penalties under civil emergencies. This is therefore a change, relative to PR19. It also represents an increase in risk allocation relative to the CMA’s PR19 redeterminations; where, for example, in retaining ODI deadbands the CMA specifically cited weather events.¹⁹</p> <p>Our RORE range for P10/P90 risk is skewed to the downside, with the P50 set at -0.28% (Section 3.4)</p> <p>Symmetry of risk: Ofwat has reduced the use of bespoke ODIs, which helped companies balance the overall package of outcomes incentives. C-Mex; D-Mex; and BR-Mex are asymmetric in their design or application, as acknowledged by Ofwat.²⁰ In addition, Ofwat expects further improvements from base funding.</p>	<p>some component (for example, weather related) is likely systematic.</p> <p>Overall method for outcomes incentives creates an expected downside skew, beyond that under PR19.</p>
<p>Regulatory and political risk</p>	<p>Greater media focus on water companies following coverage on storm overflows, FFT investigations, and drought restrictions.</p>	<p>Risk of ex-post interventions that reallocate risk to equity is greater and is skewed to the downside.</p>

Illustrating the RoRE impact of Ofwat method changes

Further to the preceding, which explains how (and why) risk has varied between PR19 (FDs and CMA redeterminations) and PR24, PA Consulting have considered movements in risk that have occurred, as a result of method changes made by Ofwat.²¹ PA Consulting’s report highlights the following (risk impacting) method changes made by Ofwat:

- No cost sharing in average revenue price controls (bioresources and retail).
- No indexation of retail price controls.
- Increasing the financial exposure on ODIs impacted by external events, with no exemptions; no deadbands; or collars on underperformance.
- Removal of deadbands on performance against statutory compliance ODIs.
- Increasingly stretching totex allowance, with limited provision for company-specific costs/RPEs.
- Increased consolidation of PCs into common ODIs, with stretching targets and increased financial exposure.

The above changes in regulatory policy, implemented by Ofwat over consecutive price controls, could have material financial implications for companies and their investors. This is because each individual change impacts the likelihood of

¹⁹ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (2021); para 7.2.35.

²⁰ ‘PR24 Final Methodology – Appendix 10 Aligning risk and return.’ Ofwat (December 2022).

²¹ ‘Analysis of relative risk of price control design at PR14, PR19 and PR24.’ PA Consulting (2022); pages 17-18.

companies (including efficient companies) either overspending on totex allowances and/or underperforming against ODI targets.

To examine and quantify the impact of the above changes, PA Consulting examined the extent to which RoRE falls below the base equity return in PR14; PR19; and PR24, under a range of scenarios. The scenarios they tested were as follows:

- **Scenario A:** Inflation and other requirements drive a 15% cost increase in bioresources.
- **Scenario B:** Bad debt and inflation leads to a 25% increase in retail costs.
- **Scenario C:** External events (such as severe weather) result in a 15% decline in performance against relevant ODIs (leakage; supply interruptions; and internal sewer flooding).
- **Scenario D:** Impact of removal of deadbands for water quality compliance, assuming PR14 levels of performance are maintained throughout PR19 and PR24.
- **Scenario E:** Impact of setting increasingly stretching totex allowances which, relative to PR14, the notionally efficient company overspends against by 4% in PR19 and 7% in PR24.
- **Scenario F:** Impact of setting increasingly stretching ODI targets, which relative to PR14, the notionally efficient company underperforms against by -2% in PR19 and -8% in PR24.

Scenarios A-C demonstrate the financial impact of events outside of the control of companies. Scenarios D-F show the impact of Ofwat setting ODIs and totex allowances that are 'too stretching'. The results are shown in the following spider-diagrams, which are taken from the PA Consulting report. In summary, PA Consulting find that the policy changes made by Ofwat, if considered in isolation, could reduce equity returns by -0.5% pa. In addition, the cumulative and combined impacts of these policy changes will be greater still; and this would be compounded if multiple scenarios outside of company control occurred concurrently (for example, extreme weather at a time of high inflation).

FIGURE 5: IMPACT ON RORE OF POLICY CHANGE SCENARIOS

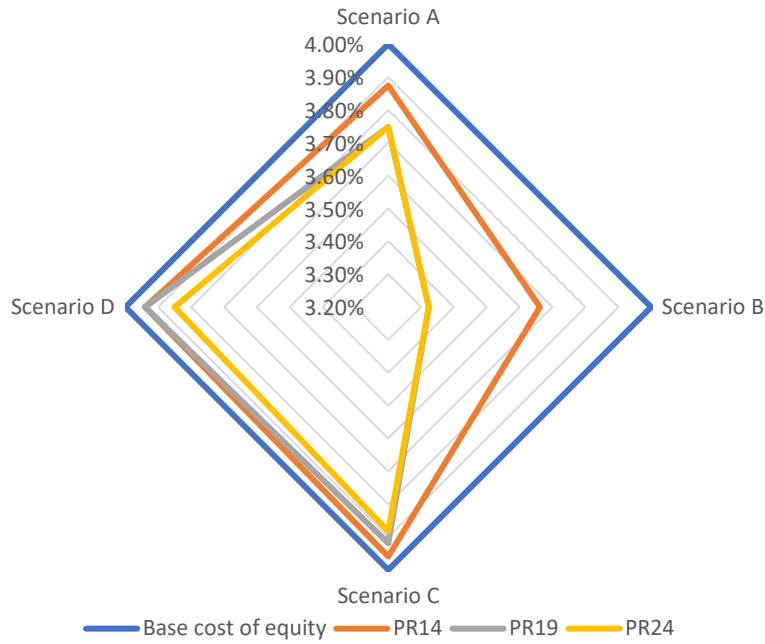
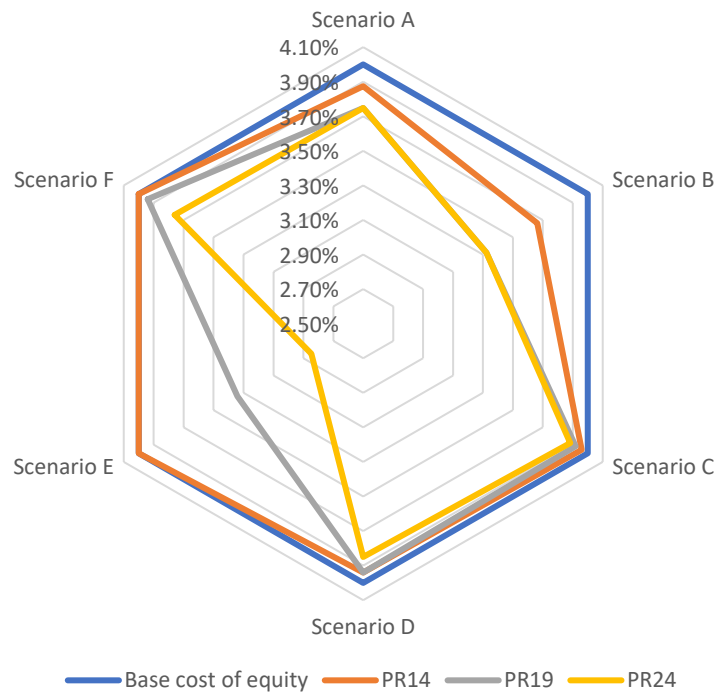


FIGURE 5: IMPACT ON RORE OF POLICY CHANGE SCENARIOS AND SCENARIOS WHERE ODIS AND TOTEX ALLOWANCES THAT ARE TOO STRETCHING



Further challenges that may impact investor risk at PR24

The scale of the enhancement programme versus base expenditure

In addition to the above changes in individual risks, the systematic risk we face will increase at PR24 due to the large-scale enhancement programme under our plan. Specifically, it is well-established in academic literature that the construction phase of projects has higher systematic risk, and thus requires a higher rate of return, than the operational phase.²² This has also been recognised by CEPA, who (when advising Ofgem on the WACC) stated: “*non-diversifiable risks relating to the nature of the activities undertaken will differ, with the construction phase generally associated with greater risks than during the operations phase.*”²³ While the balance of activities carried out in the industry varies somewhat across individual companies and over time, the scale of investment now needed is such that PR24 marks a clear ‘break-point’ in this regard, which must be duly considered in any approach to setting a forward-looking WACC.

The large-scale introduction of price control deliverables (PCDs) for PR24 enhancements increases the risk of companies experiencing downside risk, with PCDs designed not to be symmetrical (there are no rewards for over delivery) and adjustments for under-delivery that go beyond cost neutral recovery:

*Where companies propose to do this, they need to explain how the combination of PCD, cost sharing and ODI payments will more than cover the cost of the protected enhancement so that companies are **worse off** if they under-deliver or do not deliver the funded improvement.*

*As already mentioned, PCD payments, together with any related ODI underperformance payments and cost sharing arrangements, should return to customers **more than the allowed cost of the enhancement**, and should reflect any foregone benefits.*²⁴

Risk arising from Ofwat’s regulatory ring-fence license modification

We set out our views regarding Ofwat’s proposed regulatory ring-fence (financial resilience) licence modification in full in our relevant consultation response. However, in summary, we remain of the view that the proposals “*will result in a risk transfer to equity investors that will increase the cost of capital, reduce certainty and damage investor sentiment precisely at a time when the sector is seeking substantial amounts of new capital for environmental improvement.*”²⁵ In addition, the potential limitations on company distributions will likely further deter investors.

²² For example, see: ‘[Infrastructure investment, the cost of capital, and regulation: an assessment.](#)’ Helm; Oxford Review of Economic Policy; (2009).

²³ ‘[Review of Cost of Capital for New Assets for Ofgem’s Network Division.](#)’ CEPA (2018); page 27.

²⁴ Appendix 9, Setting Expenditure Allowance.

²⁵ ‘[NWL response to s13/12A consultation on strengthening the ring-fence.](#)’ NWL (September 2022); page 3.

INDUSTRY PERFORMANCE UNDER THE CURRENT PR19 SETTLEMENT

There has been operational underperformance at an industry level

It is challenging to set the appropriate balance of risk and return in the price control and in practise the PR19 settlement appears to have been very stretching. Despite strong incentives to outperform the settlement almost all companies have failed to achieve the settlement. To date, 14 companies are overspending on totex, and are incurring ODI financial penalties (despite four of the companies receiving material uplifts in allowed revenues from the CMA). Indeed, and as shown in the table below, average industry underperformance on (operational) RoRE has been -2.44% for AMP7 to date.

TABLE 2: INDUSTRY OPERATIONAL RORE VARIANCE

Average industry RoRE variance	2020/21	2021/22	2022/23	AMP7 to date	AMP6 2015-20
Wholesale totex	-0.29%	-0.26%	-3.05%	-1.34%	-0.21%
ODIs	-0.41%	-0.40%	-0.86%	-0.50%	-0.09%
Retail	-0.79%	-0.43%	-0.52%	-0.56%	(in totex)
Total operational RoRE variance	-1.49%	-1.09%	-4.42%	-2.40%	-0.30%

Source: MFR reports, 2020-21 (p20) and 2021-22 (p23) and 2019-20 (p11), Table 1E APR23.

Equity returns and dividends have been below those assumed by Ofwat

As a consequence of the above, actual industry equity returns have been below the allowed base equity return over AMP7 to date, as shown in Table 3.

TABLE 3: INDUSTRY ACTUAL RORE VERSUS BASE ALLOWANCE

Average industry RoRE	2020/21	2021/22	2022/23	AMP7 to date	AMP6 2015-20
Base RoRE	4.0%	4.08%	4.10%	4.08%	5.76%
Total out/(under) performance (totex, ODIs, interest, tax)	-1.8%	-1.75%	-0.41% ²⁶	-0.88%	0.38%*
Actual RoRE	2.3%	3.78%	3.70%	3.20%	6.14%

Source: Ofwat MFR data 2020-21, 2021-22 and 2020 MFR report and data, Table 1E APR23.

*Note – the 0.38% outperformance for AMP6 included 0.57% for financing, primarily due to outperformance on the cost of new debt. This source of outperformance has been removed for PR19 onwards under the debt reconciliation model, leaving a net underperformance on a current regulations basis.

²⁶ 2022-23 includes 4.01% RORE outperformance for financing, due to temporary high inflation.

Consistent with underperformance on RoRE, average industry dividend yields have also been significantly below the 4% yield assumed in the PR19 Final Determinations, as shown in the following table.

TABLE 4: INDUSTRY AVERAGE DIVIDEND YIELDS

Average industry dividend Yield	2020-21	2021-22	2022-23	AMP7 to date	AMP6 2015-20
Dividend yield	2.1%	3.8%	5.3%²⁷	3.1%	7.1%*

Source: Ofwat MFR data 20-21, 21-22 and 2020 FMR report and 2023 APR Table 4H.

*Excludes Anglian dividend 17-18.

Industry operational underperformance is consistent with the CMA’s expectations under its redeterminations

During the CMA’s PR19 redeterminations, the competition authority elected to ‘aim up’ on the cost of capital. In doing so, a key stated reason was the CMA’s view that there was a downside asymmetry under the package of incentives proposed by Ofwat.²⁸ The CMA specifically stated that it considered the asymmetrical design of the ODI package at AMP7 would translate into underperformance of around 0.1%-0.2% RoRE, for an average performing company. However, it described this as a ‘*broad estimate of scale*’, rather than a precise estimate.²⁹ We therefore note that the fact that the industry has underperformed over AMP7 to date accords with the CMA’s views. The extent of actual underperformance (-2.4% operational RoRE variance relative to the base allowance or -0.5% on ODIs) is greater than that estimated ex-ante by the CMA. However, it is important to note that this is because the CMA’s estimate was limited to *only* reflect the asymmetry inherent in the design of (penalty-only) ODIs and did not capture wider sources of downside asymmetry (for example, such as the incentive target levels themselves).

Industry performance under the PR19 settlement

The above observed industry underperformance over PR19 to date arises from a number of factors. Examples include:

- The overall stretch in the regulatory settlement may have been too much. At PR19 Ofwat required stretching increases in outcomes performance to be delivered out of base funding, but it remains challenging to identify *what* level of performance was funded within base and the trade-offs across outcomes areas. The CMA recognised this inconsistency in its redeterminations, particularly in relation to leakage.³⁰ But the outturn performance for AMP7 remains significantly negative at a sector level and it is difficult to define the cost/service relationship making the setting of independent benchmarks for each one challenging. Moreover, Ofwat set a frontier shift challenge of 1.1% pa

²⁷ This is the unweighted average. The weighted average is yield 4.8% (Table 4H).

²⁸ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (March 2021); para 9.1344.

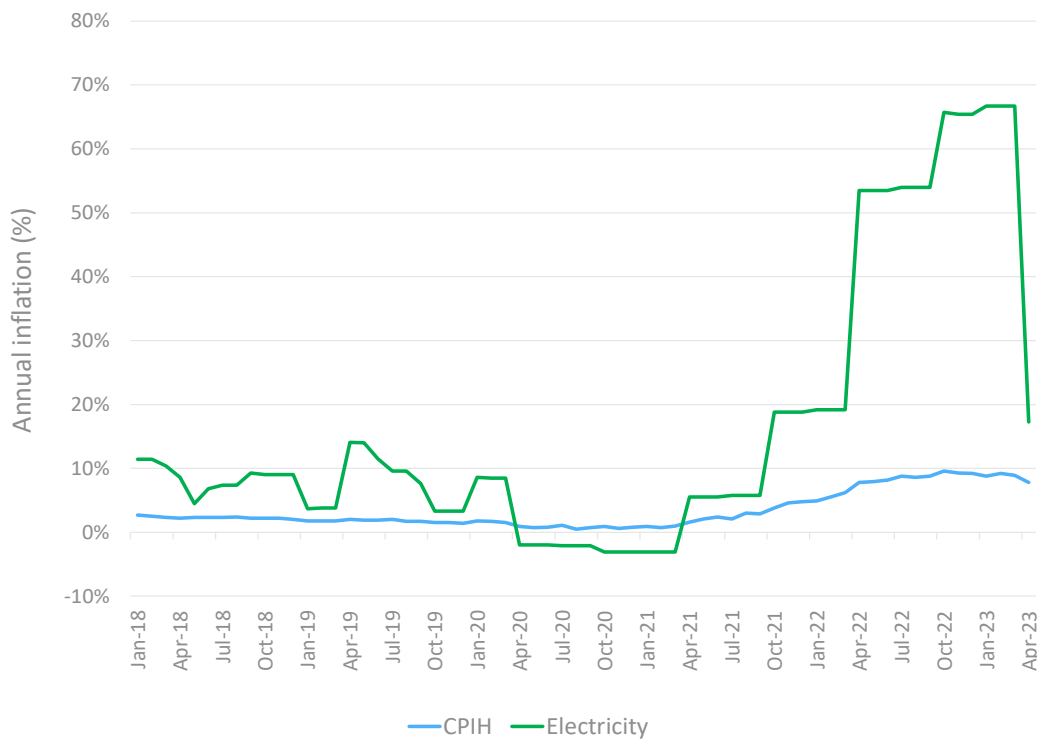
²⁹ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (March 2021); para 9.1342.

³⁰ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (March 2021); para 8.56.

which was adjusted by the CMA to 1%. However, UK total factor productivity (TFP) growth has averaged just 0.18% pa since 1996.³¹ It may have been difficult for companies to achieve the efficiencies assumed.

- In competitive markets, efficient companies would generally be expected to pass through inflationary pressure on (marginal) costs. In the PR19 FDs Ofwat and the CMA allowed for real price effects in relation to labour costs. Unfortunately, as a result of the war in Ukraine we have seen significant inflationary pressure particularly around energy costs which have correspondingly fed into other commodities like chemicals, construction materials, and so on (as illustrated in the figure below, which compares energy price inflation against CPIH, since 2018)³². The ONS data shows UK electricity inflation has averaged 16% pa since January 2018, compared to just 3.4% for CPIH.

FIGURE 6: ELECTRICITY PRICES VERSUS CPIH



Source: ONS.

- The sector will also have enjoyed a significant financing benefit from firstly the inflationary impact on the RCV and also some companies may see a benefit from the differential between the cost of fixed rate debt versus floating debt where this differs from the notional company. Both of these benefits arise from the high inflationary environment and the corresponding rise in interest rates that has followed. However, this has generally been less than the downside risk visible on sector RoRE from costs and outcomes leading to the net underperformance and the impacts of these offsetting effects are expected to be short-lived given that inflation is already falling and predict to return to the long-

³¹ Based on EU KLEMS latest data release; NACE 2 data; 'all industries' (1996 to 2019 inclusive).
³² ONS data.

term 2% target of the Bank of England during the second quarter of 2025 before the next regulatory period begins. So that benefits from high inflation will reduce whilst the service pressures might increase as targets become more stretching throughout the AMP.

RISK UNDER OUR PLAN IS ALSO SKEWED TO THE DOWNSIDE

We have assessed the RoRE risk ranges that arise under our Plan. Consistent with the evidence and discussion in the preceding passages (and as shown in Table 1), we find that risk across many individual areas, and for our plan overall, is asymmetrically skewed to the downside for equity investors. The variance ranges are based on our business plan proposals as the central case, and under a notional capital structure. Of course, should Ofwat (under its PR24 determinations) set ‘tighter’ values for allowed totex; ODI targets, and so on (relative to those assumed in our plan) the scope for downside performance would increase from the ranges we report below.

All RORE ranges are presented post taxation.

TABLE 5: NWL RORE RANGES PER COMPONENT OVER AMP8 WITH PROBABILITIES

Element	Downside (P10)	Upside (P90)	Data source (RR30:46-57)
NWL Base RORE	4.47%	4.47%	Real Cost of Equity
Totex (wholesale and retail) pre cost sharing	-8.86%	2.71%	2020-23 industry data
Outcome delivery incentives	-2.10%	0.93%	AMP8 range
Financing	-1.63%	1.37%	Inflation and new debt %
Measures of experience	-0.47%	0.41%	NWL CMEX upwards skew
Revenue and other	-0.02%	-	RFI penalty
Cost sharing mitigation	3.21%	-0.86%	RR30.60-61
Variation from Base	-9.87%	4.57%	

Source: NWL analysis. Full details of our calculations are supplied in the commentary to Table RR30.

For **Totex RORE**, we used the same approach as Ofwat took in Appendix 10 (p15) of the PR24 methodology by using the P10/P90 ranges of industry totex against FD, post cost sharing adjustments. However, we used the more recent industry totex performance data over 2020-23, which is strongly skewed to the overspend downside. We mitigated the bioresources downside case on the basis of our own leading efficiency position.

Full analysis of the **Outcome Delivery Incentives** P10/P90 range is in Section 4.1.3 of [A4 - Outcomes](#) (NES05). The results are asymmetric to the downside. Note – Chapter A4 has the ranges pre taxation, these are post taxation, per the guidance.

TABLE 6: NWL ODI P10/P90 RANGES FOR THE PR24 BUSINESS PLAN

NWL assessed P10	Monte Carlo	NWL assessed P90	Monte Carlo	P50
-2.78%	-0.84%	0.91%	0.21%	-0.28%

For **Financing RORE**, we included both the risks on embedded debt and new debt. For embedded debt, we calculated the risks of variances in inflation compared to the level implicit in nominal fixed debt. For new debt, we calculated the risks of a variance in the balance of new and embedded debt compared to the WACC assumption in the cost of debt. We assumed the debt indexation model mitigated the risks of variances in interest rates for new debt.

For measures of experience, we used the new incentive range for CMEX, mitigating the downside due to our leading position. Our range is similar to Ofwat’s, also slightly skewed on the downside.

For revenue, we applied the RFI forecasting penalty, to get an asymmetric range similar to Ofwat’s.

The need to ‘correct’ the PR19 imbalance requires a higher return

Drawing the preceding discussion together, the AMP7 settlement has not represented an even balance between risk and return. Therefore, even before taking into account the increase in risk at PR24, there would be a need to raise allowed returns or at least to ‘aim-up’ within the range.

While Ofwat may take steps in PR24 to resolve the totex asymmetry for PR24, the ODI asymmetry as currently assessed would support an uplift of at least 25bps (as was applied by the CMA at PR19) to the allowed return on equity, to ensure the ‘expected’ (that is, P50) return matches the allowed return.

REVISITING OFWAT'S ALLOWED RETURN

In this section, we explain how we sought to use the Ofwat 'early view' allowed return in the business plan, updated for movements in the market data as we were instructed to in the quality and ambition assessment guidance. The Board concluded that the 'early view' return, even when updated for market movements, was unlikely to be financeable to equity and hence we sought to do a fuller review of the parameters of the allowed return. In turn, we address the following topics:

- Overview of Ofwat's early view of the WACC, and how we have updated this to reflect the latest market data in line with the PR24 methodology.
- How the board concluded that the 'early view' return was not financeable to equity when considered against other benchmarks. Including a comparison of the cost of equity proposed by Ofwat under its early view of the WACC for PR24 compared to other UK utility sectors and how it was therefore intuitively difficult to reconcile with the apparent increase in equity risk going forward (and also compared to other UK utility sectors).
- How Ofwat has wrongly disregarded, in our view, the CMA's WACC method choices under its PR19 redeterminations and why we consider that there should be a high bar for deviating from those.

OFWAT'S 'EARLY VIEW' WACC

Ofwat approach

Ofwat has published its own 'early view' of the WACC for PR24 of 3.29% (CPIH), setting out the methodology it has applied for each individual parameter.³³ Under Ofwat's Final Methodology for PR24, the regulator has further instructed companies to use its WACC estimates; and any company that does not do so may face a material 30 bps reduction to the allowed equity return unless they can provide 'compelling evidence' that their allowed return was wrong. We have updated Ofwat's early view of the WACC to reflect the latest market data, as we briefly explain below.

Adjustments for latest market data

Markets have moved considerably since Ofwat assembled its 'early view' allowed return in September 2022 and this also supported the Board's view that we needed to take a fresh look at what the appropriate allowed return should be.

The period since 2020 has been marked by unprecedented volatility and uncertainty. The global Covid-19 pandemic and the war in Ukraine has brought considerable volatility to financial markets and a recent period of very high inflation. In seeking to bring the inflationary pressures under control the Bank of England has raised base interest rates across successive reviews by its Monetary Policy Committee. When Ofwat set the 'early view' return base rates were at 2.25%, having previously been at 1% or below since March 2009 but they have now risen to 5.25% (August 2023), the highest level since 2008.

³³ As set out in: ['Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.'](#) Ofwat (December 2022).

Under the Capital Asset Pricing Model (CAPM) which is used by Ofwat and other regulators to set the allowed returns it is necessary to start the calculation of equity returns at the risk-free-rate, that is, the return that investors need for investing in a 'riskless' asset. This is typically calculated by observing gilts and other 'riskless' assets proxies such as AAA corporate bonds. The pricing of gilts has moved significantly in line with the movement of interest rates as has debt pricing. Ofwat signalled that this might be the case in its methodology statement³⁴.

Given the movement of interest rates we initially sought to simply update the Ofwat 'early view' methodology allowing for these market movements. KPMG have applied Ofwat's early view method, updated to use a June 2023 data cut-off (compared to a cut-off of September 2022 for Ofwat's published figure of 3.29%, as above).

As part of a group of water companies, KPMG will be producing a report on the cost of debt, both embedded and new. This report was not available in time for the BP submission, but we assume that the evidence from the report, along with new debt market information, debt costs from the 2024 APR and the balance of new/embedded debt from company business plans will contribute towards Ofwat's cost of debt calculation over 2024.

We set out a selection (non-exhaustive) of the updates we have made to the EV Cost of Debt Model³⁵:

a) At this stage the Model has been updated for market data available as at June 2023 but not 2023 APRs. No changes have been made to the calculation methodology.

b) The Model has three categories of inputs that would require updates to reflect the latest market data:

(1) refinancing assumption for fixed and index linked debt;

(2) inflation assumptions used for accretion up to the end of AMP7; and

(3) the calculation of the floating rate adjustment. The assumptions have been updated in the following manner:

– The refinancing assumption in cell C7 on the tab has been updated based on the June average of the yields on A/BBB non-financials index less the 15bps benchmark index adjustment. The rates were sourced from Refinitiv Datastream.

– The CPI and RPI values that feed into the calculation of compound inflation used for accretion of index-linked instruments until the end of AMP7 in cells C14-E15 on the tab have been updated based on March 2023 forecasts from the Office of Budget Responsibility.

– The floating rate adjustment calculation has been updated based on base rate and SONIA rates from June 2023 and reflected in column CG of the tab. The rates were sourced from Refinitiv Datastream.

³⁴ Ofwat, 2022, PR24 methodology p24, App11.

³⁴ Appendix 11, S3.3.7.

³⁴ Ofgem GD2 in 2020 had a 4.30% cost of equity, that a low point for the risk-free rate <https://ukrn.org.uk/app/upload>.

³⁵ Amended Cost of Debt model supplied (NES_M_16).

c) Updating each of these inputs to reflect a cut-off of June 2023 (and continued use of APR 2022 debt inputs) results in an **increase in the cost of embedded debt from 2.34% to 2.50%** (based on 'All-in' and 'Actual-notional' approaches). We note the cost of embedded debt based solely on 'All-in cost' – that is, the appropriate basis to reflect actual financing costs – would be 2.59%.

Ofwat updated WACC

Applying Ofwat's stated methodology, with updated data, provides a revised estimate of 3.49% (Appointed CPIH real). We refer to this as the '**Ofwat early view updated WACC**'.

TABLE 7: OFWAT UPDATED WACC

Parameter	Ofwat early view (September 2022 cut-off)	Ofwat early view <u>updated</u> (June 2023 cut-off)
Inflation (CPIH)	2.00%	2.00%
Real risk-free rate	0.47%	1.33%
Nominal risk-free rate	2.48%	3.36%
TMR	6.46%	6.46%
Equity Risk Premium	5.99%	5.13%
Enterprise value gearing	53.35%	53.35%
Unlevered beta	0.277	0.277
Debt beta	0.100	0.100
Asset beta (PR19 basis)	0.330	0.330
Notional gearing	55.00%	55.00%
Notional equity	45.00%	45.00%
Re-levered beta	0.612	0.613
Aiming up % points	0.00%	0.00%
Cost of equity (real post tax)	4.14%	4.47%
Cost of embedded debt (real)	2.34%	2.50%
Proportion of embedded debt	83.00%	83.00%
Cost of new debt (real)	3.28%	3.67%
Proportion of new debt	17.00%	17.00%
Overall cost of debt (real)	2.50%	2.57%
Issuance and liquidity cost allowance	0.10%	0.10%
Overall cost of debt (real, pre-tax)	2.60%	2.80%
Appointee WACC (vanilla)	3.29%	3.55%
Retail margin deduction	0.06%	0.06%
Wholesale WACC	3.23%	3.49%

The only changes we have made are for updated market data for Risk-Free Rate and Cost of New and Embedded Debt.

WHY THE BOARD CONCLUDED IT WAS UNFINANCEABLE TO EQUITY

This section highlights the key considerations the board made in reaching its conclusion that Ofwat's 'early view' allowed return was not appropriate and that a fresh review was required of to set the appropriate value for the business plan, in particular, the equity return derived from Ofwat's updated 'early view' WACC was lower than the returns available in other assets or investments elsewhere which face similar or lower risks and it does not benchmark well against other comparable investments. However, the Board was also concerned with the approach taken which departs from the CMA PR19 redeterminations in a number of important instances.

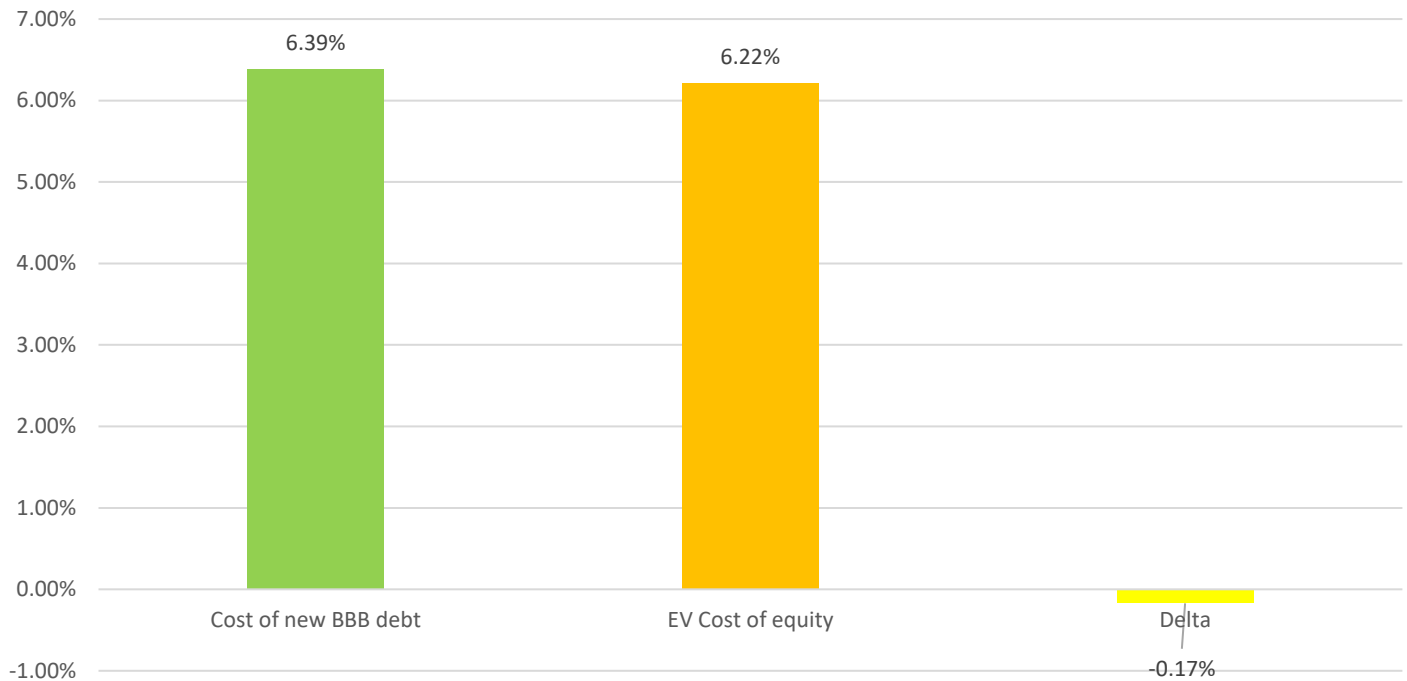
Benchmarking equity returns with debt markets

Equity providers can only be expected to invest if the return on offer matches the returns available on other assets or investments elsewhere which face similar risks. If the returns available to equity investors are below what could be earned elsewhere for a similar risk, then it would not be rational for investors to put the investment in. It will either not be forthcoming at all or will be reduced to the minimum possible level restraining the benefits to customers and the environment correspondingly.

Hedge ratios evaluate the gap between the cost of equity and the cost of debt, using historical data to determine whether the cost of equity is appropriately set, in order to secure efficient levels of equity investment (into the water industry). As equity is riskier than debt, the 'delta' between the cost of equity and debt should always be positive. Under a hedge ratios approach, one seeks to determine whether the size of the delta is appropriate, with respect to: (i) an implied risk premium on debt; and (ii) and estimated risk premium on assets.

In the PR19 redeterminations, the CMA identified theoretical merits in the approach,³⁶ arguing that the analysis appears: *"based on what seems like a logical principle: that for a regulated business with capped returns, the cost of equity used in the WACC should still be assumed to remain sufficiently above the current cost of debt to promote equity investment in the sector."*³⁷ We therefore consider that hedge ratios can be a valuable cross-check. As explained previously, and illustrated in the figure below, we note that there is now a 'negative' hedge ratio under Ofwat's early view cost of equity (using the latest market data).

FIGURE 7: NEGATIVE HEDGE RATIO UNDER OFWAT'S EARLY VIEW COST OF EQUITY

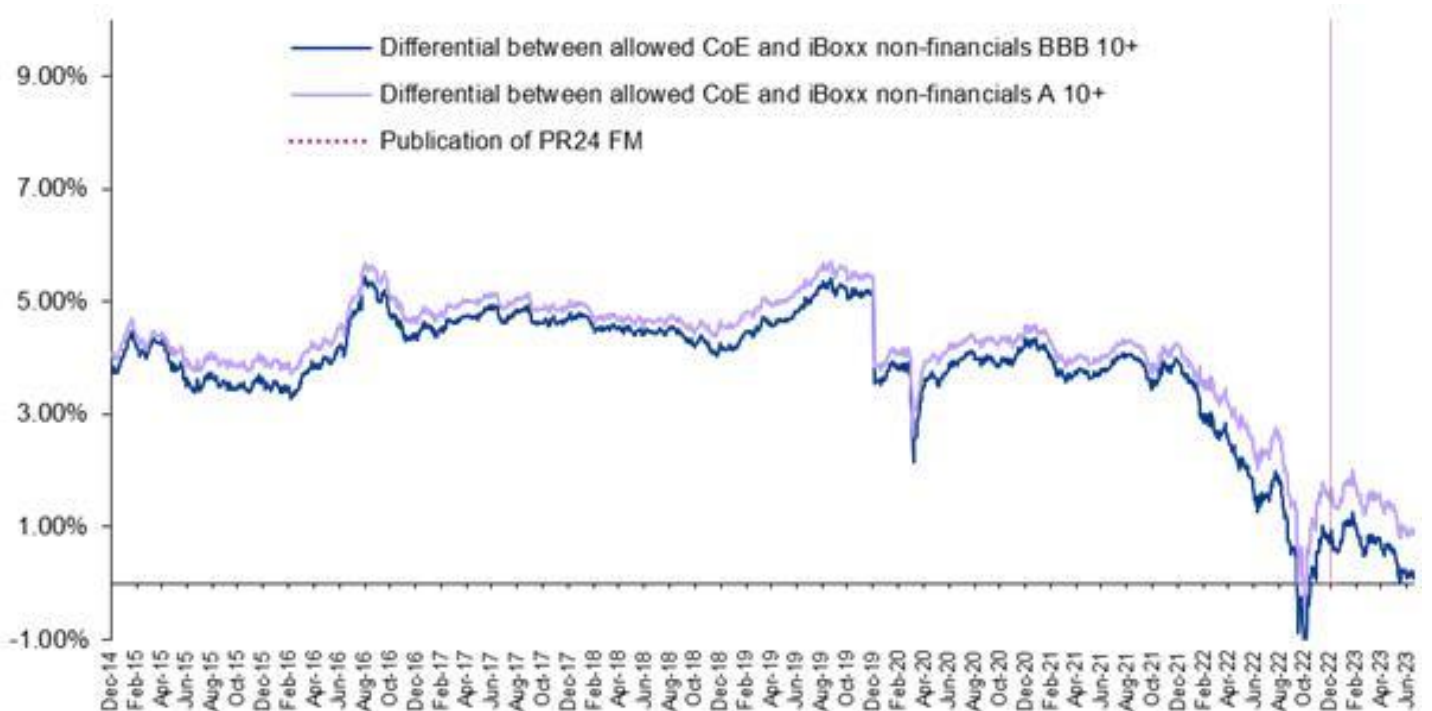


Note – Bloomberg, IBOXX BBB debt cost at 5/7/23.

This analysis suggested that the plan was not financeable to equity because higher or similar returns could be earned from alternatives that quite clearly have a lower risk profile.

Separately, KPMG has analysed the differential between the cost of equity and the cost of debt over time. They examined the evolution of the differential between December 2014 and June 2023. In the most recent period, the differential between allowed CoE and the yields on the BBB-rated has been very close to zero which effectively assumes that equity has the same risk exposure as BBB-rated debt. This is of course not consistent with corporate finance principles given the subordinated nature of equity.

FIGURE 8: EVOLUTION OF THE DIFFERENTIAL BETWEEN ALLOWED COE AND YIELDS ON THE BENCHMARK INDEX (ON A COMPARABLE 55% GEARING BASIS)



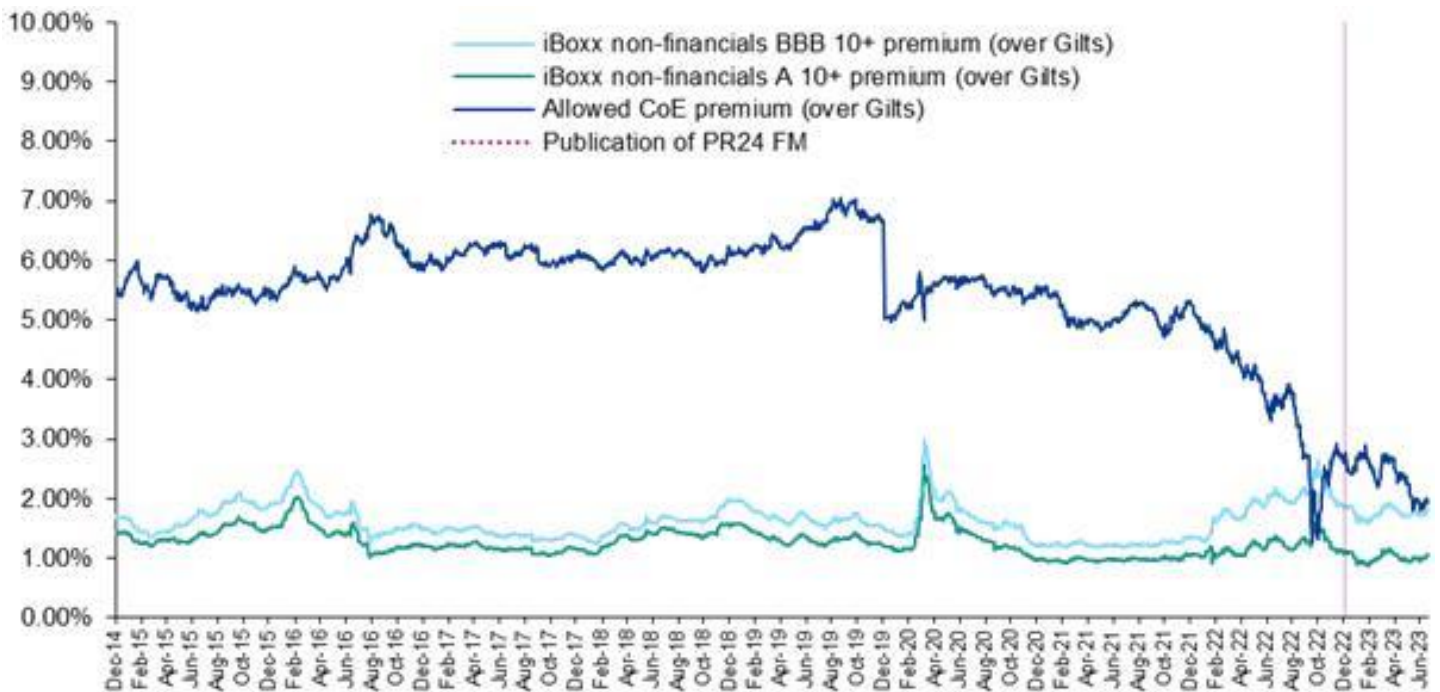
Note: Compares nominal yields on iBoxx indices to allowed CoE converted to nominal using long-term inflation assumptions in respective regulatory decisions. Allowed CoE for PR24 has been updated to reflect a June 2023 cut-off in terms of data with no changes to methodology.

Source: KPMG analysis of Ofwat, CMA decisions and Refinitiv Datastream data.

The second figure below illustrates that the implied premia (over Gilts) for CoE has decreased materially from the beginning of 2022 whereas the premia for debt has remained relatively stable. This suggests that the observed reduction in the differential between allowed CoE and yields on the benchmark index is driven by the way in which allowed CoE has been set, which is not consistent with debt pricing in current market conditions.

This analysis further evidences that the allowed cost of equity from Ofwat’s ‘early view’ is unlikely to be sufficient to attract equity as it sits too close to gilts and other ‘riskless’ asset groups.

FIGURE 9: EVOLUTION OF COE (ON A COMPARABLE 55% GEARING BASIS) AND BENCHMARK INDEX PREMIA (OVER GILTS)



Note: Compares nominal yields on iBoxx indices to allowed CoE converted to nominal using long-term inflation assumptions in respective regulatory decisions. Premium calculated relative to the 20Y nominal gilt yield. Allowed CoE for PR24 has been updated to reflect a June 2023 cut-off in terms of data with no changes to methodology.

Source: KPMG analysis of Ofwat, CMA decisions and Refinitiv Datastream data.

Returns available in other regulated sectors

Moreover, as shown in Table 8, the cost of equity proposed by Ofwat under its early view of the WACC for PR24 (4.14%) is the lowest across all recent regulatory determinations (which, in relation to decisions made by other regulators, range from 5.02% to 7.90%). Strikingly, Ofwat’s proposed figure represents a reduction from the cost of equity it set at PR19 (4.19%). Given the evidence that: (i) the risk-reward balance was mis-set at PR19; (ii) the industry is earning equity returns below the base return in AMP7; and (iii) equity risk is higher at PR24 relative to PR19, this result was implausible to the Board.

TABLE 8: COST OF EQUITY COMPARISONS WITH OTHER REGULATED SECTORS

WACC Component	Real, CPIH stripped					
	Water			Energy	NI Energy	Airports
	PR19 Ofwat (FD)	PR19 CMA FD	PR24 early view (September 2022)	Ofgem ³⁸ ED2 (November 2022) ³⁹	NI Utility Reg GD23 (February 2023)	H7 CAA FD (mid), March 2023
Gearing	60%	60%	55%	60%	55%	60%
Risk-free rate (RfR)	-1.39%	-1.34%	0.47%	1.23%	1.77%	1.54%
Total market return (TMR)	6.50%	6.80%	6.50%	6.50%	6.50%	6.80%
Equity Risk Premium (ERP=TMR-RFR)	7.89%	8.15%	6.03%	5.27%	4.73%	5.26%
Debt beta	0.125	0.075	0.100	0.075	0.075	0.075
Asset beta	0.290	0.290	0.330	0.31	0.35	0.53
Notional equity beta	0.707	0.745	0.609	0.76	0.69	1.21
Cost of equity	4.19%	4.73%	4.14%	5.23%	5.02%	7.90%

Sources: Taken from published regulatory determinations.

Ofwat's position with respect to certain individual parameters above also lacks plausibility. Specifically:

- In relation to the RfR, Ofwat's early view estimate (0.47% in CPIH terms) is materially lower than those of the NIAUR and CAA (1.77% and 1.54% respectively, on the same basis). Estimates of the RfR should not vary by industry and should also be (relatively) stable over time.
- In relation to the asset beta, Ofwat's early view WACC indicates a range of 0.32 to 0.34. This compares to an asset beta under its PR19 Final Determinations of 0.36.⁴⁰ Asset beta estimates may change between determinations either due to changes in: (i) estimation method which, based on robust evidence, may be *objectively* said to 'improve' the reliability of the estimates; and / or (ii) the overall level of market risk in the industry. In Annex A we provide evidence to show that (i) does not hold in this case. In addition, the alternative intuitive explanation (that is, that the overall 'market risk' to water industry investors has declined between PR19 and PR24), is plainly implausible, for the reasons outlined in Section 2 of this document. Therefore, the reduction in asset beta implied under Ofwat's early view, is itself, also implausible.
- Finally, as discussed in the previous section Ofwat's cost of equity is now lower than the cost of debt implied by recent market data.

³⁸ Ofgem GD2 in 2020 had a 4.30% cost of equity, that a low point for the risk-free rate. <https://ukrn.org.uk/app/uploads/2020/12/2020-UKRN-Annual-Cost-of-Capital-Report-Final-1.pdf>.

³⁹ Ofgem and Ofwat are now broadly aligned on the methodology for estimation of market-wide parameters. Should the same cut-off (September 2022) be applied to both determinations, RFR and TMR would be virtually the same. Ofwat has left the door open for RFR indexation similar to that applied by Ofgem which would largely align the outturn RFR estimates across PR24 and ED2 based on like for like market conditions. The differences in the overall CoE across water and energy are predominantly driven by the assumptions that (1) energy networks are exposed to materially higher systematic risk and (2) that this underlying risk has not changed materially since October 2020.

⁴⁰ 'PR19 final determinations: Allowed return on capital appendix.' Ofwat (December 2019); page 5.

Market to asset ratios

One equity metric Ofwat does intend to utilise under its PR24 Final Methodology is the market to asset ratio (MAR). Specifically, Ofwat proposes that it will use an analysis of MARs as a cross-check when setting the allowed cost of equity.⁴¹ The inference Ofwat seeks to draw from MARs is that, where MARs are (even marginally) above 1, they provide evidence of cost of equity outperformance (that is, indicating that the cost of equity has not been ‘too low’).⁴²

The Board of NWL was not convinced that the MAR does represent a suitable cross-check for the allowed return and MARs in the current period refer to the current allowed return rather than the PR24 WACC. However, we note that, even if MARs could be relied upon, the Pennon MAR went marginally below one as we were finalising our business plan. Specifically, and as shown in the following table, SWB’s MAR was 0.98. This figure would be significantly lower if the financing outperformance of Pennon was taken into account. South West Water enjoys one of the lowest costs of borrowing across the sector and if this were priced in by investors as we would expect then it would suggest that the MAR could be well below one.

TABLE 9: PENNON (SWB) MAR

Item	Value (£ms)
Market cap	£1,633
Short term debt	£127
Long term borrowings	£3,040
Total debt	£3,167
Cash	£165
Enterprise value	£4,635
RCV 2022/23 (SWB and Bristol)	£4,716
MAR (2 dp)	0.98

Source: Bloomberg, Ofwat and Pennon annual report.

We see similar share price 12-month declines for SVT and UU.

⁴¹ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.’ Ofwat (December 2022); pages 49-50.
⁴² ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.’ Ofwat (December 2022); page 50.

FIGURE 10: PENNON (SWB) SHAREPRICE MOVEMENTS

Pennon Group

PINN

As of 14:08 17 Aug 2023
 15 min delay
 Source: Morningstar

Data summary

Market open

	1D	1M	3M	1Y	5Y
% change				-36.56%	
Price range (£)				632.00 - 1004.00	
Change				-364.50	
Market capital (£)				1,634.50m	



OFWAT HAS DISREGARDED THE CMA’S REDETERMINATION FINDINGS ON THE WACC

The Board of NWL has consistently stated that the CMA’s PR19 redetermination decisions, which represent the longest and most thorough review of these matters since privatisation in our opinion, need to be maintained and that there should be a high bar for departing from them⁴³. We consider that Parliament designed the CMA appeal mechanism to make sure that in extremis disagreements of this sort could be referred to them for settlement and our approach seeks to follow that redetermination as closely as possible.

Ofwat has only adopted some of the CMA’s WACC method choices

Ofwat appears to have largely rejected methodological choices made by the CMA under its PR19 redeterminations.⁴⁴ We have reviewed the method choices made by Ofwat for each WACC parameter and have identified where the regulator has adopted, or deviated from, the CMA’s position.

As can be seen in Table 10, Ofwat has largely rejected the method choices made by the CMA. Where Ofwat has adopted a method choice consistent with the CMA, it has done so only selectively, and only in circumstances where the method choice results in a *reduction* (or no change) in allowed returns.

⁴³ For example, NWL Response to PR24 and Beyond: Creating tomorrow together July 2021 para 13.

⁴⁴ These points were set out in our January 2022 response to the risk and return discussion paper.

TABLE 10: SUMMARY OF OFWAT DEVIATION FROM CMA METHOD CHOICES FOR SETTING THE WACC

Parameter area	Was it changed by CMA?	Impact of CMA change on allowed return	Is Ofwat's PR24 methodology consistent with CMA?	Impact of Ofwat change in allowed return
Cost of Equity				
Risk-free rate	Yes	Upward	No	Downward
Total market return	Yes	Upward	No	Downward
Beta	No	No change	Yes	Downward
Treatment of Covid-19 data	Yes	No change	TBC	TBC
Beta de-levering and re-levering	No	No change	No	Downward
Aiming up	Yes	Upward	No	Downward
Cost of debt				
Cost of embedded debt	Yes	Flat	TBC	TBC
Embedded debt scope	Yes	Flat	No	Downward
Cost of new debt	Yes	Upward	No	Downward
Customer benefits test	Yes	Upward	Yes	No change
Notional gearing	No	N/A	No	N/A
Cross checks – Financeability	Yes	Upward	No	Downward
Cross checks – Alternative	Yes	Upward	No	Downward

As can be seen from the above, under its 'early view' of the WACC, Ofwat has adopted method choices consistent with the CMA for just two elements: beta calculation and the customer benefits test. Moreover, in relation to beta, Ofwat's final approach remains unclear; and the regulator has left open method choices that would further reduce the allowed return.

Rejecting the CMA's method choices undermines the wider legitimacy of the regulatory model and broader legislative framework for regulation in the UK

We are surprised that Ofwat has chosen to reject so many of the CMA's decisions. Parliament set out a legal framework for water companies and their investors at privatisation more than thirty years ago. That broader framework gives companies an opportunity to seek a redetermination of Ofwat's price controls through the CMA in extremis. This provides a critical 'check and balance'. Therefore, if Ofwat's approach at PR24 is to effectively 'set aside' the outcome of the redetermination, the legitimacy of the legislative framework, and regulatory model, is itself undermined. This approach gives rise to the prospect that the same issues are returned to the CMA on multiple occasions, resulting in unnecessary costs which are, ultimately, paid for by customers and taxpayers.

The CMA's water redeterminations represent the best precedent for the appropriate methods to set the allowed return and there should be a high-bar for departing from them

Ofwat has made various references to the energy network CMA appeals. For example, Ofwat referred to the principle that the CMA decided that Ofgem's approach 'was not wrong', specifically in reference to the decision not to 'aim up'⁴⁵. Ofwat's PR24 Final Methodology suggests in various places that these decisions are more recent; and so should be given more weight, relative to the CMA's PR19 redetermination. We do not agree with these conclusions. The best, and most relevant, guide to the choices that must be made for PR24 is, and remains, the CMA's redeterminations in relation to the water industry and there should be a high-bar for departing from them.

Firstly, the energy sector is different to the water sector (with different characteristics), which will drive a different risk-reward balance. Ofwat has itself recognised this difference in its submissions to the CMA energy appeals; and in its proposals to use listed water company betas under its WACC methodology.

Secondly, and pertinently, the energy network licence modification appeals regime is materially different to the water redetermination regime. Water is subject to a full 'de novo' redetermination, while in energy appeals companies can only challenge specific aspects of the price control decision on a standalone basis. In doing so, said companies must demonstrate that one or more of the five potential grounds of appeal are met (such as demonstrating that the decision is based on 'an error of fact', or is 'wrong' in law). In contrast, the redetermination that occurs under the water regime gives the CMA full control to review and consider all aspects of the price control and determine, for each constituent part, what it considers to be the most appropriate methodological choice.

INDEPENDENT THIRD-PARTY ASSURANCE ALSO SUPPORTED THE BOARD'S VIEW

In considering the financeability of the business plan the board sought independent assurance of the approach taken by NWL's management team from First Economics. In their [assurance letter](#) (NES69) First Economics highlighted that:

'We agree that the Directors' conclusion that the appointee is not likely to be able to finance its activities if Ofwat applies the 'updated early view WACC' is rational and well justified'. First Economics, September 2023

⁴⁵ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (2022); p54.

OUR ALTERNATIVE RETURN ESTIMATE

In Annex A we set out a detailed assessment of Ofwat’s position with respect to each parameter of the WACC; and highlight where our own view differs from that of the regulator. For summary purposes, the most material deficiencies are:

- Ofwat is intending to estimate the risk-free rate (RfR) solely with reference to index-linked gilts (ILGs), despite it being widely accepted that they embed a convenience premium, which will result in this method understating the ‘true’ RfR.
- Ofwat is placing insufficient weight on the current and projected volatility in the RfR, which could be addressed through three main mechanisms: choice of averaging periods; applying forward-rate adjustments; and/or indexing the RfR. Indexation of the RfR is our preferred mechanism because this will also help to manage affordability pressures in AMP8.
- In relation to the Total Market (equity) Return (TMR) Ofwat proposes to only rely on the ONS CPI(H) backcast data, despite known limitations and uncertainties regarding this.
- Ofwat is not proposing to ‘aim up’ on the cost of equity, despite the fact that there is a de-facto case for doing so, on the basis that there is asymmetry in the package that needs to be corrected for.
- In relation to the cost of new debt, Ofwat is mistaken in assuming companies can outperform the allowed index by 15bps.
- As regards embedded debt, Ofwat should not omit swaps under its balance sheet approach. Companies would only utilise these if they were an effective and efficient means of managing inflation risk. Therefore, they are beneficial to customers and Ofwat is artificially understating the cost of embedded debt by excluding them.

Below we summarise our alternative view of the allowed return.

NWL’S ALTERNATIVE VIEW OF THE RETURN

Our own alternative view of the WACC (‘NWL alternative WACC’) starts as closely as possible from the CMA’s redetermination in line with the points we highlighted previously on this. Table 11 below sets out our alternative view of the WACC, which is 3.95% on an appointee (vanilla) basis, compared to 3.29% under Ofwat’s early view and 3.55% under the Ofwat adjusted view.

TABLE 11: NWL ALTERNATIVE WACC

Parameter	Ofwat early view (September 2022 cut-off)	Ofwat early view updated (June 2023 cut-off)	NWL alternative WACC
Inflation (CPIH)	2.00%	2.00%	2.00%
Real risk-free rate	0.47%	1.33%	1.99%
Nominal risk-free rate	2.48%	3.36%	4.03%
TMR	6.46%	6.39%	6.80%
Equity Risk Premium	5.99%	5.13%	4.82%
Enterprise value gearing	53.35%	53.35%	54.20%
Unlevered beta	0.277	0.277	0.290
Debt beta	0.100	0.100	0.075
Asset beta (PR19 basis)	0.331	0.331	0.331

Notional gearing	55.00%	55.00%	55%
Notional equity	45.00%	45.00%	45%
Re-levered beta	0.613	0.613	0.643
Aiming up % points	0.00%	0.00%	0.25%
Cost of equity (real post tax)	4.14%	4.47%	5.34%
Cost of embedded debt (real)	2.34%	2.50%	2.34%
Proportion of embedded debt	83.00%	83.00%	83.00%
Cost of new debt (real)	3.28%	3.67%	3.94%
Proportion of new debt	17.00%	17.00%	17.00%
Overall cost of debt (real)	2.50%	2.70%	2.72%
Issuance and liquidity cost allowance	0.10%	0.10%	0.10%
Overall cost of debt (real, pre-tax)	2.60%	2.80%	2.82%
Appointee WACC (vanilla)	3.29%	3.55%	3.95%
Retail margin deduction	0.06%	0.06%	0.00%
Wholesale WACC	3.23%	3.49%	3.95%

We tested financeability for this alternative return alongside Ofwat's 'early view' updated for market movements and we note that our NWL alternative WACC delivers significant improvements to financial headroom, under both notional and actual company capital structures (for both debt and equity financeability metrics). Importantly, it does so without making any significant difference to the affordability, or customer acceptability, of our proposals because:

- the indexation of the risk-free rate will offset the bill increases if interest rates fall. and even with the additional return the bill projections remain below or consistent with what we tested with customers through the research; and
- while the additional costs on bills will push a small number of additional customers into water poverty (at the 5% income threshold) the activities we plan to carry out are more than sufficient to ensure that no customer spends more than 5% of their income on their water and sewerage services.

The NWL alternative real cost of equity of 5.34% equates to 7.44% in nominal terms. With the cost of new BBB debt at over 6% currently (average yield on Ofwat's preferred iBoxx BBB reference index of 6.27% in June 2022) and returns on risk free assets of around 4-5% the proposed return to shareholders is in line with the kind of market benchmarks that investors will be measuring water companies against. A differential of 100-150bps would to us appear a credible position that would be financeable to equity.

The cost of equity value proposed is also within the the range presented in an independent report that has been commissioned by a range of companies across the sector (5.42-6.06%)⁴⁶. This is driven by more closely following the CMA's PR19 positions.

⁴⁶ NES59-A5-01 Estimating the cost of equity for PR24

A FINANCEABLE, AND FINANCIALLY RESILIENT, PLAN

This section addresses the financeability and financial resilience of our Business Plan. In turn we set out:

- The financeability framework we have used to test our plan. We explain that financeability requires that the WACC overall is set at the appropriate level (and that cash flow metrics are consistent with being able to raise debt finance on reasonable terms). However, it is further essential that the cost of equity and expected equity return are sufficient for a company to be investable for equity. We highlight that a key limitation of Ofwat's approach to financeability is an inadequate focus on equity investability.
- A robust testing of the financeability of our business plan, including applying various stress tests and identifying appropriate mitigations. We demonstrate that our plan is financeable and resilient, but there is considerably more headroom under our own alternative view of the WACC. We consider BBB/Baa2 to be a reasonable credit rating for NWL to target (under our actual capital structure).
- How we have set out cost recovery rates (our PAYG and RCV run-off rates).

A ROBUST FINANCEABILITY FRAMEWORK MUST DELIVER APPROPRIATE EXPECTED EQUITY RETURNS

NWL's view of the appropriate framework for assessing financeability

The key limbs to financeability and the importance of being investable for equity

It is long established that there are two main parts to the assessment of financeability. Firstly, the WACC must be set at the appropriate level (that is, such that the allowed cost of equity and cost of debt accurately compensate equity and debt investors for the risks they face). However, even if the WACC were set at an appropriate level, mismatches in the timing of cash inflows and outflows from year to year may impede the ability of a firm to raise debt finance on reasonable terms. Put simply, setting the WACC at the appropriate level is a *necessary*, but not *sufficient*, requirement to achieve financeability. Secondly, therefore, it is also necessary to ensure that key cash flow metrics in individual years are consistent with firms being able to access debt at a reasonable cost.

Of relevance to the first limb, the return earned by equity investors is not solely determined by the allowed cost of equity set by a regulator. Rather, it is also a function of the performance of a firm against any regulatory financial incentives (such as ODIs, totex, and so on). Therefore, for the expected equity return of a company to be equal to its allowed cost of equity, any targets with associated financial incentives (penalties and rewards) must be set at the 'most likely' (P50) level. When the expected equity return is in line with the cost of equity, a firm would be able to attract new equity investment (that is, it is 'investable' for equity). Where that is not the case (say, because targets were set 'beyond' the P50 level, such that net financial penalties were the expected outcome) a firm's expected equity return would be *below* the allowed return. In that circumstance, the firm would not then be investable for equity, unless that was offset in some other way. For example, in principle, a higher cost of equity could be set (aiming up) such that, overall, the expected equity return was once again in-line with the (central view) of the appropriate cost of equity. It therefore follows that a robust approach to financeability should make sure:

- That the WACC *overall* is set at a level commensurate with the level of risk investors face (and, within that, *both* the cost of equity and cost of debt are similarly set at levels commensurate with the relevant associated risks).
- That separate attention should be paid to the expected equity return, to make sure companies are investable for equity (where here, we mean that regulators should carefully assess net expected financial penalties/rewards under their incentives and calibrate them appropriately, and/or adjust for any resultant expected skew in returns elsewhere, if that does not occur).
- That financial ratios are consistent with efficient firms securing reasonable investment grades from credit rating agencies, allowing them to raise debt finance on reasonable terms.

Financeability should be considered from both a notional and actual perspective

We recognise that the role of economic regulation is not to support inefficient firms, nor to underwrite bad decision-making. As such, regulatory duties relating to financeability (including Ofwat's financing duty), are generally interpreted as applying to a hypothetical (notional) efficient firm. It is therefore important to assess whether companies are financeable, using the above framework, on a notional basis. However, for current and prospective investors in the real world, and for company management, it is also necessary to understand whether companies are financeable on an actual basis (that is, with their actual costs; performance and capital structure). This is to inform sound commercial and investment decision-making.

The testing of financeability should follow a ratings agency approach

A firm's ability to raise debt finance on reasonable terms, the second limb of financeability, is reliant upon its credit worthiness. This indicates the likelihood of a company defaulting on its debt obligations and is measured by its corporate credit rating. In assessing financeability, Ofwat indicates that companies should target a credit rating of at least two notches above minimum investment grade (BBB+/Baa1) for the notional firm in their PR24 business plans.

Any implementation of said financeability assessment should be consistent with the rating agencies approaches, first and foremost. By this we mean the method should align with the guidance from corporate credit rating agencies (that is, published methodologies of agencies such as: Moody's; S&P; and Fitch). This is because it is these agencies, rather than the regulator, that determine a company's credit worthiness in practice (and this holds for all firms, including efficient firms).

Limitations of Ofwat's approach to financeability

Setting aside the concerns we have regarding the 'level' of the WACC; cost of equity; and cost of debt proposed by Ofwat (that is, in our view, the WACC and allowed equity return proposed by Ofwat are 'too low'), the regulator's overall framework for assessing financeability itself suffers from some limitations. We summarise these below.

Insufficient focus on equity

Ofwat's methodology for assessing financeability is based around companies being able to meet their debt servicing obligations; and does not duly consider the industry's ability to attract new equity. Specifically, Ofwat's approach is framed around corporate credit ratings, which are defined based on an assessment of a company's creditworthiness (that is, which indicates the likelihood of a company defaulting on its debt obligations/being able to service its debt). The specific financial ratios used under Ofwat's method are:

- gearing;
- (adjusted cash) interest cover ratios; and
- funds from operations to net debt.

While creditworthiness, indebtedness, and the ability to service and attract debt finance (as measured by the above ratios), are important from the view of debt investors, it is a perspective that omits the critical role that equity plays in achieving financeability overall. While Ofwat also considers equity related metrics (dividend yield; dividend cover; RoRE and RoCE), they do not directly feed into the regulator's financeability assessment.

The above is further apparent from Ofwat's approach to risk analysis and the use of RoRE under its broader PR24 Final Methodology. In principle, a RoRE framework and metric could be used to ensure that the expected equity return aligns to the allowed cost of equity. Put simply, a symmetrical RoRE range around a P50 that itself was equal to (an *appropriately set*) cost of equity would achieve that. However, and as explained previously, while Ofwat has stated that it 'will' set a symmetrical balance of risk at PR24 (and has already published RoRE ranges that are symmetrical) the regulator's approach to risk analysis is at odds with that position. Put simply, in order for the expected equity return to align with the cost of equity, for each component of the price control, one would ideally carry out careful and robust risk analysis; and then use that to 'set' the relevant targets at the expected (P50) level. In contrast, Ofwat has set out risk ranges *before* making its determinations and positioned RoRE analysis as more of a 'cross check'. Under Ofwat's method, the risk range will always *appear* to be symmetrical, with the central value being equal to any target it sets. This is circular; it provides no basis for determining the expected equity return in practice.

The limitations in Ofwat's financeability approach likely contribute to its proposed WACC (and equity return) being inappropriately low

In addition to the methodological limitations of Ofwat's approach to setting the WACC (including specifically in relation to the cost of equity) it seems likely that the regulator's above failure to sufficiently incorporate equity into its financeability framework will have contributed to its inappropriately low proposed equity return. In this context, we highlight the previous points made, including that:

- The cost of equity assumed for the early view is the lowest in water regulatory history, at a time when attracting new equity will be a fundamental part of sustaining financeability for PR24.

- Based on the latest market data, Ofwat's early view of the cost of equity is below or in line with the cost of debt. This is implausible and means there is no incentive for equity investment in the sector.

Overreliance on market-to-asset ratios

Further to the above, one equity metric Ofwat does intend to utilise under its PR24 Final Methodology is the market to asset ratio (MAR). Specifically, Ofwat proposes that it will use an analysis of MARs as a cross-check when setting the allowed cost of equity.⁴⁷ The inference Ofwat seeks to draw from MARs is that, where MARs are (even marginally) above 1, they provide evidence of cost of equity outperformance (that is, therefore indicating that the cost of equity has not been 'too low').⁴⁸

In contrast to Ofwat's position, the CMA did not place much emphasis on the use of MARs when setting the cost of equity under its PR19 determinations. Specifically, the CMA reached the following conclusions in relation to MARs: *"In the round, we do not consider any of the parties' MAR analysis to represent sufficient evidence to determine whether the CMA or Ofwat's cost of capital is more appropriate for the entire water sector, nor to arbitrate between an allowance that is at the midpoint or one that is 0.1% higher in WACC terms. As a result, we have therefore not given the MAR analysis significant weight in coming to a final view on the point estimate."*⁴⁹

The CMA's conclusions above reflect its view (one we share) that MARs can be influenced by a wide range of factors, which are inherently difficult to control for. Hence, identifying any 'real' premia using MARs (that is, being able to infer whether allowed rates of return may have been 'too high' or 'too low') is extremely challenging. We therefore do not consider that MARs should be used as a cross check. Rather, we think there are more appropriate cross-checks on the cost of capital, which we briefly discuss in the next section. Furthermore, even if MARs could be relied upon, there is available MAR evidence that undermines Ofwat's claims of expected cost of equity outperformance. Specifically, and as shown previously, SWB's MAR is now less than one.

Alternative cross-checks: multi-factor models; financeability tests; and hedge ratios

Multi-factor models (MFMs) seek to 'explain' variation in asset (stock) pricing by adding in a broader set of variables than the classic Fama-French three factor model for asset pricing (which only include: firm size; book-to-market values; and excess returns) under the CAPM framework. MFMs are effectively extensions of CAPM, with additional explanatory power. In our view, MFMs as a cross-check on the overall cost of equity have several advantages over MAR ratios.

These include:

- They are well supported in the academic literature; and so one can follow and apply specific, peer reviewed, MFMs (adopting the relevant variables included under them) without the need to subjectively evaluate ‘which factors’ to incorporate.⁵⁰
- MFMs have been shown to perform better than the standard CAPM in explaining asset prices.⁵¹
- MFMs are used in the real world to price assets, including by academics and fund managers.⁵²

Financeability testing (in the ‘narrow’ sense of ensuring key cash-flow and other metrics are consistent with a target / investment grade rating for the notional firm) can also be an important cross check on the cost of equity / WACC. That is to say, should financeability testing reveal limited headroom on said target investment grade, this might indicate the WACC needs to be increased. This position is consistent with the CMA’s view under the PR19 redeterminations, where it stated:

“Our analysis of the cost of equity, including the ranges that result from parameter uncertainty, illustrates that the CAPM model could be used to derive a wide range of potential options for the cost of equity. It is likely that the lower end of this wide range of estimates would ultimately result in ratios which are lower than necessary to support investment-grade credit metrics at the notionally-structured company. The overall determination, in the round, needs to include a consideration of whether the WACC assumptions chosen are consistent with the credit rating assumed throughout the determination. We therefore disagree with Ofwat’s submission that the need to maintain credit metrics can never be part of the WACC assessment.”⁵³

As highlighted elsewhere in this appendix, however, it is further critical to ensure that the ‘notional’ firm is appropriately identified in the first place, for the results of any financeability testing to be meaningful. At present, we are concerned that Ofwat’s proposed notional firm is not appropriately defined, implying increased equity finance in the context of a reduced equity return and higher equity risk, relative to PR19. Therefore, the assessment of financeability of the notional firm (as specified by Ofwat) will overstate the financial resilience of a more appropriately defined notionally efficient firm.

⁵⁰ ‘Use of Market-to-asset ratios (MARs) as a cross-check in the context of regulatory price controls.’ KPMG (September 2022); page 44.

⁵¹ ‘Use of Market-to-asset ratios (MARs) as a cross-check in the context of regulatory price controls.’ KPMG (September 2022); page 44.

⁵² ‘Use of Market-to-asset ratios (MARs) as a cross-check in the context of regulatory price controls.’ KPMG (September 2022); page 44.

⁵³ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (2021); para 9.1378.

TESTING TO ENSURE A FINANCEABLE AND RESILIENT PLAN

Our Board is satisfied our plan is financeable (specifically for debt) under the notional and actual capital structure

Our Board can confirm that, if we assume Ofwat’s WACC and Ofwat’s proposed notional capital structure (55% gearing), our plan is consistent with us achieving an investment grade credit rating for debt (BBB+/Baa1 credit rating) under the notional structure and an investment grade rating (BBB/baa2) for the actual structure. Therefore, under those assumptions, we would be financeable *specifically in relation to debt*.

However, we do not think that Ofwat’s EV Adjusted WACC is consistent with the risks faced by our investors (it is ‘too low’). In addition, we do not consider that the notional firm faces a symmetrical risk return balance. Therefore, under an appropriate definition of financeability (which includes setting the WACC at the correct level; and making sure that the expected equity return is equal to an appropriately set cost of equity), we cannot conclude that our plan would be financeable on a notional (or actual) basis, under Ofwat’s methodology. Therefore, it has been essential to set out our own ‘NWL alternative’ assessment of the WACC under our plan, for it to be internally consistent.

We will retain our transparent capital structure, with no securitisation and a conservative level of appointed gearing (below 75%). We have also tested the financial resilience of our business plan, making sure we have the flexibility to manage any adverse risks and shocks that arise.

We set out in Annex **C** the detailed financeability testing of the plan.

Financeability stress testing – our approach

We have carried out ‘stress testing’ of the financeability of our plan (in addition to our Annual Performance Report Viability Statement). This includes considering the specific stress tests defined by Ofwat,⁵⁴ in order to inform our financial resilience but we have amended those tests to better reflect recent observed performance across the sector and the most reasonable view of risk. Table 12 summarises the scenarios we have tested; impacts; and our mitigations.

TABLE 12: SUMMARY OF STRESS TEST SCENARIOS, IMPACTS AND MITIGATIONS

Common Scenarios	Scale of impact on financial ratios	Primary mitigations
Ofwat Scenarios		
A: Totex underperformance (10% of totex) over five years.	Severe	Dividend, new equity, IDOK
B: ODI underperformance payment (3% of RoRE) in one year	Severe	Dividend, new equity, IDOK

⁵⁴ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 10 – Aligning Risk and Return.’ Ofwat (December 2022); page 59.

C: Inflation below the assumption for the base case in the Business Plan (2% below).	Severe	Dividend, new equity
D: Deflation of -1% for two years, followed by a return to the long-term inflation target.	Severe	Dividend, new equity
E: High inflation; a 10% spike in inflation with a 2% increase in wedge between RPI and CPIH, followed by two years at 5% and a 1% increase in wedge.	Low	Increased revenue and RCV
F: Increase in the level of bad debt (20%) over current bad debt levels applied in years two and three.	Low	Dividend policy
G: Debt refinanced as it matures, with new debt financed at 2% above the forward projections of interest rates.	Medium	Dividend, new equity
H: Financial penalty – equivalent to 6% of one year of appointee turnover applied in year two.	Temporary	Dividend policy
Northumbrian Scenarios		
I: Totex underperformance (20% of totex) over five years	Severe	Dividend, new equity, IDOK
J: ODI underperformance payment (3% of RoRE) in every year	Severe	Dividend, new equity
K: Combination scenario (I and J)	Severe	Dividend, new equity, IDOK

We carried out our stress tests against the following metrics and thresholds:

TABLE 13: METRICS AND THRESHOLDS APPLIED UNDER STRESS TESTING

Rating and Credit Metric	BBB+/Baa1 Notional gearing target	BBB/Baa2 Actual gearing target
NWL gearing ^{Moody's}	<72%	<80%
NWL AICR ^{Moody's}	>1.5	>1.3
FFO/Group debt ^{S&P}	>9%	>6%
PMICR (Fitch)	>1.4	>1.3
Nominal PMICR (Fitch)	>1.7	>1.6

The Moody's thresholds are confirmed in a March 2021 ratings note.⁵⁵ Fitch similarly published a note⁵⁶ on the calculation of their PMICR metrics, which we have constructed using financial model data.

Setting a BBB/Baa2 target credit rating for the actual capital structure

We consider BBB/Baa2 to be a reasonable credit rating for NWL (under our actual capital structure) to target for the period 2025-30. This aligns with the following statement by Ofwat within its PR19 Final Determinations: *“On their actual*

⁵⁵ Research: Rating Action: Moody's changes outlook on Northumbrian Water to stable, affirms ratings - Moody's (moodys.com).

⁵⁶ The Importance of Post-Maintenance Interest Coverage Ratios for Credit Analysis of UK Regulated Networks, 8/1/19.

structure, most companies target BBB+/Baa1/BBB+ (Fitch, Moody’s, Standard and Poor’s), in most cases being consistent with current or expected credit ratings. Four companies target credit ratings one notch lower, at Baa2 (Moody’s) and/or BBB (Standard and Poor’s)...These targets are primarily driven by companies’ actual financing arrangements.”⁵⁷

Further to the above, our response to the Ofwat consultations on financial resilience confirmed that around a third of FTSE 100 companies have credit ratings of BBB/Baa2 or lower; and are viable, resilient, companies. There are 35 companies in the FTSE 10 with credit ratings of BBB/Baa2, representing over 20% of the market’s capitalisation. Twenty-six of these companies paid dividends in 2020. It includes other infrastructure investors, such as: BT Group; National Grid; and Severn Trent (that is, all of which are classed as BBB/Baa2 or lower).⁵⁸

Finally, we note the KPMG Financial Resilience Impact Assessment report⁵⁹ analysed the gap in the cost of debt between BBB/Baa2 and BBB+/Baa1 ratings. They concluded that there could be a reduction in the cost of debt equivalent to a cost of capital impact of up to 1bps arising from the changes to rating. This confirms our view that there is no material impact on customers of a credit rating varying between BBB/Baa2 and BBB+/Baa1.

In light of the above, we do not believe that targeting BBB+/Baa1 for the NWL actual capital structure would be in customers’ interests.

Financeability stress testing – results

As part of our business plan submission, we have provided a full analysis of the stress tests we have undertaken⁶⁰, and their resulting metrics. Tables 14 and 15 provide a summary of the results.

TABLE 14: STRESS TEST RESULTS – NOTIONAL GEARING BBB+/BAA1 TARGET

Common Scenarios	Unmitigated	Post mitigation
Totex underperformance (20% of totex) over five years.	Fail	Pass
Retail costs (20-25% overspend) over five years.	Fail	Pass
ODI underperformance payment (2-3% of RoRE) in each year .	Fail	Pass
Inflation below the assumption for the base case in the business plan (2% below).	Fail	Pass
Deflation of -1% for two years, followed by a return to the long-term inflation target.	Fail	Pass
High inflation; a 10% spike in inflation with a 2% increase in wedge between RPI and CPIH, followed by two years at 5% and a 1% increase in wedge.	Fail	Pass
Increase in the level of bad debt (20%) over current bad debt levels applied in years two and three.	Fail	Pass

⁵⁷ 'PR19 final determinations: Aligning risk and return technical appendix.' Ofwat (December 2019); page 79.

⁵⁸ Annex to NWL Response to Financial resilience in the water sector – January 2022.

⁵⁹ 'Financial Resilience: Impact Assessment.' KPMG (September 2022); page 30.

⁶⁰ See commentary to Table RR17.

Debt refinanced as it matures, with new debt financed at 2% above the forward projections of interest rates.	Fail	Pass
Financial penalty – equivalent to 6% of one year of appointee turnover applied in year two.	Fail	Pass

TABLE 15: STRESS TEST RESULTS – ACTUAL GEARING BBB/BAA2 TARGET

Common Scenarios	Unmitigated	Post mitigation
Totex underperformance (20% of totex) over five years.	Fail	Pass
Retail costs (20-25% overspend) over five years.	Fail	Pass
ODI underperformance payment (2-3% of RoRE) in each year .	Fail	Pass
Inflation below the assumption for the base case in the business plan (2% below).	Fail	Pass
Deflation of -1% for two years, followed by a return to the long-term inflation target.	Fail	Pass
High inflation; a 10% spike in inflation with a 2% increase in wedge between RPI and CPIH, followed by two years at 5% and a 1% increase in wedge.	Fail	Pass
Increase in the level of bad debt (20%) over current bad debt levels applied in years two and three.	Fail	Pass
Debt refinanced as it matures, with new debt financed at 2% above the forward projections of interest rates.	Fail	Pass
Financial penalty – equivalent to 6% of one year of appointee turnover applied in year two.	Fail	Pass

Financeability stress testing – mitigations

In the following, we describe the mitigations we have identified and applied under our business plan, to make sure we are financially resilient in the event of these shocks.

Inclusion of PR19 reconciliation income

Our business plan includes a material level of additional revenue over 2025-30 relating to PR19 reconciliation items (DSRA; cost of debt; tax; and others). While we acknowledge that Ofwat’s guidance⁶¹ is to exclude this income from financeability assessments for the notional company, in practice for the actual company, it will aid financeability for NWL and will lessen the need for other mitigation measures. We have therefore included this income when assessing the financeability of our business plan on an actual gearing basis. This does not undermine business plan incentives, as Ofwat only uses notional gearing when assessing financeability.

⁶¹ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 10 – Aligning Risk and Return.’ Ofwat (December 2022); page 39.

Targeted management actions

Our executive implement the Board's strategies and closely monitors performance. This includes making sure sufficient and suitable resources are applied to scrutinise performance; and to identify and manage risk. It also makes sure there is an appropriate: assignment of responsibilities; corporate structure; reporting lines and accountabilities, all supported by annual positive assurance on systems and controls.

Dividend policy

Our dividend policy, which we amended before Ofwat's recent licence modifications, is closely linked to performance. Therefore, many of the stress tests outlined above would manifest themselves as underperformance against the PR24 Final Determination, with a subsequent impact on dividends. The policy also includes the option of financial resilience adjustments, designed to make sure the company maintains a prudent investment grade credit rating and an appropriate buffer to absorb relevant financial risks. The policy would thus reflect the impacts on performance of the stress tests and consider the financial resilience requirements of the business.

New equity raising

Whilst the notional structured core plan assumes a certain level of new equity being raised, the actual required amount could be higher, should the stress test conditions require it. We have already assumed new equity injections that outstrip dividends for AMP8.

Interim Determination

While NWL is only proposing specific notified items, the substantial effects (SE) interim determination (IDOK) mechanism could apply, should totex increase significantly for reasons beyond management control. In practice for NWL, this would mean an increase of 4% or more of opex would qualify for an SE IDOK. We would not anticipate this applying immediately at that threshold, but it would have to be considered as a mitigation of any opex increase stress test scenario of more than 5%, for example.

Correlation of macro-economic effects between company costs and CPIH

Significant cost shocks to the UK economy would impact the water industry. Macro-economic events that drive increased costs, such as increased energy prices, will increase both company costs and CPIH, as seen over 2022-24. In this way, the increase in revenue and RCV through an increase in CPIH will at least partially offset the impacts on company costs (thus, mitigating the impact of the shock). There would be a timing difference, however, with costs incurred at least a year before revenues begin to adjust. Additional RCV indexation growth would provide additional debt capacity, which would help to cover the increased costs from a cash perspective.

Northumbrian Water has been financially resilient to date

Our financial resilience under our business plan for PR24 (evidenced above) should also be seen in the context of us sustaining a financially resilient business throughout the Covid-19 pandemic and energy crisis (both of which were severe

real-world stress tests). We did not declare any dividends over 2019/20 and 2020/21 until the outcome of the CMA Determinations and the impact of the pandemic was clear. Our dividends over 2019/22 were at an average yield of 4.4%⁶², within the real cost of equity range set by the CMA in PR19.⁶³

SETTING PAYG AND RUN OFF RATES

As we did in PR19, we have set our PAYG rates at the ‘natural rate’ (operating costs as a percentage of totex).

For the RCV as at 1/4/25, we have adjusted our PR19 run-off rates for remaining lives slightly downwards, to be within the upper limits set under Ofwat’s PR24 Final Methodology.⁶⁴ Our bioresources PR19 run-off rate was below the guidance level; we have therefore kept this at the same rate. Accordingly, there are no adjustments made for financeability and our cost recovery rates support intergenerational equity.

For new investment, we have used the weighted average asset lives of the 2025-30 enhancements to set (lower) run-off rates, which reflect the full economic life of the assets. As a significant amount of our enhancements for 2025-30 relate to long life network assets, this approach will spread the cost of these across multiple price control periods, which we consider to be fair for customers from an intergenerational perspective. Table 16 summarises our PAYG and RCV run-off rates.

TABLE 16: SUMMARY OF OUR PAYG AND RCV RUN-OFF RATES

Cost Recovery Rates 2025-30	Water Resources	Water Network plus	Wastewater Network plus	Bioresources
PAYG Rate (average 25-30)	90%	30%	30%	70%
Run Off Rates				
RCV at 1/4/2025 (remaining lives)	4.5%	4.5%	4.5%	7.28%
Enhancements Run off (1/life)	1.7%	1.7%	1.7%	3.3%
Enhancements (full economic lives)	60	60	60	30

OUTPERFORMANCE SHARING AND UNCERTAINTY MECHANISMS

We support the sharing of the benefits of outperformance in principle, where the methodology and sharing rules are clearly set out as part of the price determination. Our customer bills reduction over 2020-25 was the highest in the industry,⁶⁵ based in part on the sharing with customers of over £180m of outperformance over 2015-20⁶⁶ as well as changes to our PAYG rate resulting from a move to annual setting of these levels.

⁶² Updated dividend policy letter to J Russell December 2022.

⁶³ 4.73% per CMA FD19.

⁶⁴ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 10 – Aligning risk and return.’ Ofwat (December 2022); Table 7.1.

⁶⁵ ‘PR19 final determinations: Overview of final determinations.’ Ofwat (December 2019).

⁶⁶ ‘PR19 final determinations: Northumbrian Water - Accounting for past delivery appendix.’ Ofwat (December 2019).

We support the proposed suite of PR24 outperformance sharing models; and we believe they cover the key exogenous events that can impact company performance. There are reconciliation models in place for cost sharing, varying taxation, and interest rates, which are three large areas of performance variance during a price control period.

We set out a mechanism for the reconciliation of input prices and various uncertainty mechanisms in [A3 – Costs](#) (NES04) and we also propose various other mechanisms in the business plan for sharing outperformance with customers which we discuss elsewhere including:

- introducing a new shareholder funded hardship fund of £20m to support customers with major affordability challenges;
- reinvesting any outperformance in capital maintenance funding; and
- increasing our support for customers who experience repeat sewer flooding and reinvesting any outperformance in relation to the biodiversity incentive.

We also propose an additional reconciliation mechanism for the symmetrical indexation of the risk-free rate. At a time of increased volatility where inflation and interest rates remain high creating affordability pressures for customers and where equity is an increased proportion of Ofwat's WACC calculation, we believe that indexation of the risk-free rate is worthy of reconsideration. Over the next five years we estimate that this could return c.£92m to customers if inflation and interest rates fall in line with forecasts⁶⁷. There is already an equivalent mechanism for the cost of new debt, which has been generally supported by stakeholders. We note Ofwat are already considering this as an option.⁶⁸

The mechanism could operate in a similar fashion to the Ofgem mechanism⁶⁹ with an annual reconciliation of revenues similar to the current in-period ODI mechanism. The benchmark could be set based on RPI-linked government bonds (gilts) and AAA corporate bonds (to account for the convenience yield) with a 20-year tenor to calculate the indexed RfR. Ofwat could take outturn gilt and AAA corporate bond yields to produce indexed RfR estimates. The daily average RfR estimate for the October prior to the start of the financial year could be used to calculate the indexed RfR with an update on the allowed RfR published by Ofwat prior to the start of the financial year. OBR forecasts for RPI and CPI could be taken to calculate the difference between RPI and CPIH, assuming that the RPI-CPIH wedge is equal to the RPI-CPI wedge. The RPI-CPIH wedge could then be added to the yields on RPI-linked gilts to calculate a CPIH-derived RfR.

⁶⁷ ESTIMATING THE CUSTOMER BENEFIT OF INDEXING THE RfR Analysis for Northumbrian Water, Economic Insight, August 2023.
⁶⁸ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital,' Ofwat (December 2022); page 18.
⁶⁹ This mechanism is discussed in '[Cost of equity indexation evaluating the case for PR24 and beyond](#)', PwC, 2022.

A SOCIALLY RESPONSIBLE APPROACH TO DIVIDEND POLICY, EXECUTIVE PAY AND TAXATION

OUR DIVIDEND POLICY

Our Dividends paid for 2019-23

While our new dividend policy was approved in 2022, our recent dividends have been broadly in line with the 4.73% real, 6.82% nominal cost of equity as set by the CMA for PR19.

TABLE 17: NWL DIVIDENDS PAID 2019-23

Dividends £m, outturn	2019/20	2020/21	2021/22	2022/23	Total / Comments
Declared relating to the year					
Interim	0.0	0.0	58.2	55.4	Paid in year
Final	0.0	123.3	55.4	25.3	Paid in following year
Total	0.0	123.3	113.6	80.7	
Regulatory Equity					
Notional	1,726	1,679	1,819	2,039	40% of RCV
Actual	1,418	1,279	1,377	1,614	Table 4H
Declared Yields					
					Average
Notional	0.0%	7.3%	6.2%	4.0%	4.4%
Actual	0.0%	9.6%	8.2%	5.0%	5.7%

Source: APR and Accounts.

Our dividend policy for 2025-30

The NWL Board approved a new dividend policy in 2022, as part of our periodic review process, which has applied since the start of 2023. This update was to make sure we had a policy that best reflected our latest views on service performance for customers. We also reflected Ofwat's feedback on our policy when updating it. We first published our new policy in our 2023 APR; and intend to apply it throughout the 2025-30 period. Table 18 sets out how our new policy addresses Ofwat's dividend policy criteria.

TABLE 18: HOW OUR DIVIDEND POLICY MEETS OFWAT’S CRITERIA

<p>Ofwat expectations: Appendix 10 – Aligning risk and return, p64.</p> <p><i>The factors that companies should take into account in the design and application of their dividend policies should include:</i></p>	<p>Relevant extract from NWL Dividend Policy (as published in the 2023 APR)</p>
<p><i>Performance in meeting their obligations including their statutory and licence obligations.</i></p>	<p>A performance adjustment linked to business performance and outcomes for customers and the environment.</p>
<p><i>The commitments they have made to customers.</i></p>	<p>NWL considers that its dividend policy should be transparent, recognising the company’s commitments to customers, employees and investors.</p>
<p><i>Out/underperformance against regulatory metrics and benefit sharing.</i></p>	<p>A performance adjustment linked to business performance and outcomes for customers and the environment.</p>
<p><i>Employee interests.</i></p>	<p>NWL considers that its dividend policy should be transparent, recognising the company’s commitments to customers, employees and investors.</p>
<p><i>Pension obligations.</i></p>	<p>The policy makes specific reference to the pension deficit repair plan and compliance with Pensions Trustee and Regulator.</p>
<p><i>Actual capital structure, including whether, for a company with high gearing, it has considered maintaining the same dividend yield as under our notional structure.</i></p>	<p>A financial resilience adjustment designed to appropriately calibrate the company’s overall gearing levels with the underlying risk profile of the business.</p>
<p><i>The need to finance future investment (RCV growth) or fund costs not covered by the price review.</i></p> <p><i>Financial resilience.</i></p>	<p>Financial resilience adjustments are designed to ensure the company maintains a prudent investment grade credit rating and an appropriate buffer to absorb relevant financial risks. To achieve this an adjustment will be made to ensure that any real terms growth in the regulatory capital value is funded from both debt and equity in line with an efficient capital structure.</p>

BEST PRACTICE APPROACH TO EXECUTIVE PERFORMANCE-RELATED PAY

We are pleased to read that Ofwat considers the NWL annual bonus scheme to be transparent and related to actual performance; and that the regulator has highlighted this as an example of best practice. *“Northumbrian Water clearly sets*

out the targets for each metric which made up its annual bonus scheme alongside the actual performance in the year against each metric, whether the target was achieved, and if so, the percentage of the bonus award which was payable as a result.”⁷⁰

To align the Executive Leadership Team’s focus with the business outcomes we want to attain, performance-related elements of pay are dependent upon the achievement of stretching internal targets from across our balanced scorecard of performance measures. Both short-term and long-term incentive plans are structured with 60% related to targets delivering benefits for customers and the environment; and 40% related to financial targets. The Remuneration Committee Report is available within our Annual Report and Financial Statements; and provides full, transparent, detail on our directors’ remuneration policy and how remuneration in the year has been calculated.

Table 19 summarises our performance related executive pay policy, as stated in the Northumbrian Water Limited Annual Report and Financial Statements for the year ended 31 March 2022, and how this meets Ofwat’s expectations under its PR24 Final Methodology.

TABLE 19: OVERVIEW OF PERFORMANCE RELATED EXECUTIVE PAY POLICY AGAINST OFWAT’S STATED EXPECTATIONS

Ofwat expectations on performance related executive pay, Appendix 10, Chapter 10	NWL Executive Pay Policy Performance related executive pay
Alignment to delivery for customers and the environment.	Our Short-Term Incentive Programme (STIP) covers eight key customer metrics, five environmental targets, two financial targets and two people related targets.
Stretching targets.	Our STIP included stretching targets, for example, a target of top two companies for CMEX and DMEX. Our 2022 STIP indicates that these targets are not always met, so they are clearly stretching for the company. None of the STIP and LTIP targets are set at levels lower than the committed Performance Commitment Levels for customers and they are genuinely set to target industry leading levels of performance consistent with our vision to be the ‘national leader’.
Overall performance.	The Long-Term Incentive Programme (LTIP) is a cash-based award, with deferred payment. Vesting of the LTIP is based on performance in the first calendar year after award. Payment is deferred until the completion of four years from the start of the performance period.
Underpins, malus and clawback.	A clawback applies in the event that results on which the STIP is paid are subsequently found to be inaccurate or there has been relevant misconduct on the part of the employee.

⁷⁰ ‘Board leadership, transparency and governance – Report on how companies are meeting the principles.’ Ofwat (February 2021); page 10.

PAYING FAIR TAX

The provision of licenced water and wastewater services to customers is carried out by the company in the UK. Funding for the company's growing capital programme to deliver those services also takes place in the UK, mainly through Northumbrian Water Finance plc (the company's wholly owned finance subsidiary) which typically issues listed bonds to investors. The company is therefore subject to UK tax rules, which require the submission of accurate tax returns and the payment of tax at the right time. All tax returns are currently up to date and are not the subject of any major enquiries by HMRC, and tax has been paid in quarterly instalments.

The company's tax affairs are conducted in accordance with a Tax Strategy (see Annex **B**). The strategy sits within the company's tax governance arrangements; and HMRC also carry out risk assessments to determine if any areas need to be addressed. The HMRC business risk assessment carried out for 2022/23 resulted in the company being rated low risk. The company adopts a professional and co-operative relationship with HMRC.

Excerpt from HMRC 2022/23 Business Risk Review for Northumbrian Water, page 1:

Approach to tax compliance:

There is no indication that you are structuring transactions to produce a result contrary to the intentions of parliament or that do not have genuine commercial reality.

You are open and transparent with HMRC and share relevant information relating to how risk is managed across all taxes in real time.

You publish your tax strategy document on your website and update it regularly.

The sector you operate in is heavily regulated. This limits the opportunity for aggressive tax planning, however there is no indication for any appetite for this.

A low-risk rating for your approach to tax compliance is appropriate

The financial years ending on 31 March 2022 and 2023 have been affected by two key factors: significant energy cost increases; and the Government's introduction of higher tax reliefs for capital expenditure to incentivise growth in the UK economy, following the pandemic. This has resulted in a reduction of taxable profits in those years, and in the amount of corporation tax paid. It is expected that taxable profits will increase in the years ending 31 March 2024 and 2025; and the amount of corporation tax payable will increase as a result of the tax rate increasing from 19% to 25% on 1 April 2023.

The overall company position was confirmed in 2023 as part of the Good Business Charter re-accreditation for Northumbrian Water⁷¹ as the criteria includes assurance on companies 'paying fair tax'.

⁷¹ <https://www.goodbusinesscharter.com/accredited-organisations-posts/>.

ANNEX A – OUR ALTERNATIVE COST OF CAPITAL

This annex sets out our alternative view of the appropriate WACC at PR24 ('NWL alternative WACC'); and is structured as follows:

SUMMARY OF OUR ALTERNATIVE WACC

For the unlevered beta, TMR and our aiming up adjustment, we have retained the values used by the CMA in PR19.

TABLE 20: OFWAT UPDATED WACC

Parameter	Ofwat early view (September 2022 cut-off)	Ofwat early view updated (June 2023 cut-off)	NWL alternative WACC
Inflation (CPIH)	2.00%	2.00%	2.00%
Real risk-free rate	0.47%	1.33%	1.99%
Nominal risk-free rate	2.48%	3.36%	4.03%
TMR	6.46%	6.39%	6.80%
Equity Risk Premium	5.99%	5.13%	4.82%
Enterprise value gearing	53.35%	53.35%	54.20%
Unlevered beta	0.277	0.277	0.290
Debt beta	0.100	0.100	0.075
Asset beta (PR19 basis)	0.331	0.331	0.331
Notional gearing	55.00%	55.00%	55%
Notional equity	45.00%	45.00%	45%
Re-levered beta	0.613	0.613	0.643
Aiming up % points	0.00%	0.00%	0.25%
Cost of equity (real post tax)	4.14%	4.47%	5.34%
Cost of embedded debt (real)	2.34%	2.50%	2.34%
Proportion of embedded debt	83.00%	83.00%	83.00%
Cost of new debt (real)	3.28%	3.67%	3.94%
Proportion of new debt	17.00%	17.00%	17.00%
Overall cost of debt (real)	2.50%	2.70%	2.72%
Issuance and liquidity cost allowance	0.10%	0.10%	0.10%
Overall cost of debt (real, pre- tax)	2.60%	2.80%	2.82%
Appointee WACC (vanilla)	3.29%	3.55%	3.95%
Retail margin deduction	0.06%	0.06%	0.00%
Wholesale WACC	3.23%	3.49%	3.95%

RISK-FREE RATE

Risk-free proxy and convenience yields

We support the CMA's approach to calculating the risk-free rate (RfR) under its PR19 redeterminations, which involved using a mix of index-linked gilts (ILGs) and AAA corporate bonds. This is also supported by: (i) the recent CAA H7 price control position; (ii) evidence provided by First Economics; and (iii) analysis by Oxera.⁷² As such, we are not persuaded by Ofwat's choice to reject the use of AAA corporate bonds and to solely rely on ILGs.

There is a wide range of evidence supporting the existence of a convenience premium in ILGs

Under its PR19 redeterminations the CMA found that, while ILGs were a useful input to the estimation of the RfR, they were not wholly sufficient (due to the presence of a convenience premium). The CMA thus concluded that: *"the ILG rate available to the government is unlikely to be a perfect proxy for the RFR, and that the 'true' rate of RFR in the market is likely to be above this level."*⁷³ Relatedly, the CMA further concluded that: *"we can gain sufficient insight into the market RfR by assessing the likely RfR of interest applicable to two appropriate market participants: 1) the government and 2) the highest rated (lowest cost) nongovernment borrowers."*⁷⁴

Further to the CMA's position, the presence of a convenience premium in ILGs (and thus a need to also place weight on alternative metrics, such as corporate bonds) is supported by:

- The CAA, in relation to H7, found that ILGs exhibit a convenience premium (and/or are subject to other specific factors that mean the yields on ILGs may underestimate the RfR). In estimating the rate, it therefore used an average of yields on ILGs and yields on ILGs adjusted for a convenience premium, as estimated using AAA corporate bonds.⁷⁵ Its estimate of the convenience premium was 32bps.
- Oxera provide academic and wider evidence regarding the convenience premium.⁷⁶ This included considering other sectors such as aviation (the CAA) and international energy regulation (for example, in Germany, where 'yields on debt securities outstanding issued by residents' are used as a proxy for the RfR). After reviewing a range of evidence, Oxera estimated the convenience premium to be around 50bps.
- First Economics showed that the margin of error in an ILG only methodology is now far greater than the margin of error that arises from using additional proxies, due to concerns that the gilt market behaves differently than other asset markets.⁷⁷

⁷² 'Economic regulation of Heathrow Airport Limited: H7 Final Decision Section 3: Financial issues and implementation,' CAA (2023); 'The Risk-free Rate Prepared for a Group of England & Wales Water Companies,' First Economics (August 2022); 'RFR methodology for PR24,' Oxera (September 2022).

⁷³ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations,' CMA (March 2021); para 9.158.

⁷⁴ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations,' CMA (March 2021); para 9.263.

⁷⁵ 'Economic regulation of Heathrow Airport Limited: H7 Final Proposals' Section 3, CAA (June 2022); paras 9.245-248.

⁷⁶ 'RFR methodology for PR24' Oxera (September 2022); page 11.

⁷⁷ 'The Risk-free rate,' First Economics (August 2022); page 6.

- KPMG⁷⁸ set out the conceptual and methodological weaknesses in Ofwat's EV approach to their estimation of the convenience yield. Section 5.4.1 of their report sets out their conclusions:

'Ofwat's adjustment to CY(NG) to derive CY(ILG) has a narrow focus on liquidity. It does not take account of the factors widely referenced in academic literature for explaining CY which could exert upward pressure on CY(ILG). In consequence, Ofwat's adjustment is partial and not robust from a conceptual standpoint.'

'Even if Ofwat had not omitted relevant CY factors from its analysis, there are number of methodological weaknesses with Ofwat's approach in general and specifically when applied to Diamond and Van Tassel estimates of CY(NG). These methodological weaknesses similarly undermine the robustness of Ofwat's adjustment.'

The key point to consider relating to the above is simply that the 'true' RfR is unobservable. No one metric therefore provides a perfect measure of it. In this context, Ofwat's stated rationale for rejecting the use of AAA corporate bonds at PR24 (on the basis that there is a lack of datapoints and that they may suffer from distortions)⁷⁹ is flawed. Put simply, we would agree that AAA corporate bonds are an imperfect measure; but so are ILGs. Therefore, either (and indeed any) metric, if used in isolation, risks providing an inaccurate (and potentially biased) estimate. In our view, an approach that consider both ILGs and AAA bonds⁸⁰ gives a range under which the former might be regarded as the 'floor' for the RfR; and the latter might be regarded as the 'ceiling'.

The above is consistent with how the CMA framed its characterisation of the issues during the PR19 redeterminations: *"we are not convinced of the need to conclude on the exact nature of the marginal investor when deciding which measures may assist our estimation of the RFR. Rather, we are trying to calibrate our estimate of the RFR acknowledging that the ILG rate is available to all lenders but only one borrower, and that even the highest quality borrowers in the country could not access this rate... [therefore] we have instead looked for a helpful marker of the likely ceiling to any potential RFR estimate."*⁸¹

Finally, we note that the convenience premium Ofwat estimates (7bps, using a methodology identified by Diamond and von Tassel)⁸² understates the likely premium in any case. In contrast, and as noted above: (i) Oxera estimate the convenience premium to be around 50bps; and (ii) the CMA, in its PR19 redeterminations, estimated it to be 32bps. Moreover, the authors Ofwat refer to have themselves estimated a premium of 38bps.⁸³

⁷⁸ KPMG Estimating the cost of Equity for PR24 (August 2023) Section 5.4.

⁷⁹ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (December 2022); pages 12-13.
⁸⁰ Or other alternatives, such as the yield on deflated nominal gilts.

⁸¹ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.' CMA (March 2021); y Is 9.159-9.160.

⁸² 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (December 2022); page 15.

⁸³ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (December 2022); page 15.

Alternative measures

We disagree with Ofwat's proposal to use SONIA swap rates as a cross-check for the RfR. This is in line with the CMA's approach at PR19 and is further supported by Oxera analysis.

The key underlying factor is that SONIA swap rates exhibit wide, persistent, negative spreads due to distortions and market frictions. While RfR analysis attempts to produce long-term estimates, SONIA rates are inherently short-term rates.⁸⁴ Subsequently, when the horizon of SONIA rates is extended for the purposes of RfR estimates, Oxera argues that the long-maturity rates are distorted by persistent negative spreads.⁸⁵ This noise significantly undermines the robustness of the use of SONIA swaps as a proxy for the RfR.

Averaging Period

The Ofwat position on the averaging period for the RfR is somewhat unclear. In its final methodology, Ofwat chose a one-month trailing average for the RfR averaging period. In addition to departing from the draft methodology's period of 6-12 months, Ofwat stated that this averaging period could still be changed. For example: *"if there was good cause to believe that the level of yields averaged over a given month was unusually high or low due to temporary factors."*⁸⁶ It is important for Ofwat to avoid any perception of opportunism in the calculation of the RfR, by committing to an ex-ante period in early 2024 (for example), rather than making use of a longer time series that also reflects more recent data.

Market volatility supports the need for a longer averaging period

There has been a recent increase in volatility in the market, likely caused by several external events. The Covid-19 pandemic (and subsequent consequences) have impacted operating costs and ODIs, such as PCC. Energy price increases have also impacted the industry; and will continue to do so, as temporary hedging strategies come to an end.

This increased volatility has led to a rise in the returns required by investors, seen in both government bonds and the cost of new debt. Ofwat itself acknowledges this impact of market volatility: *"A clear rising trend is observable for both real and nominal instruments [for risk-free proxies], with significant volatility at the end of September 2022 following fiscal announcements by the UK government."*⁸⁷ Indeed, the recent volatility (and rising trend) in ILG yields over the last nine months is illustrated in Figure 11 below.

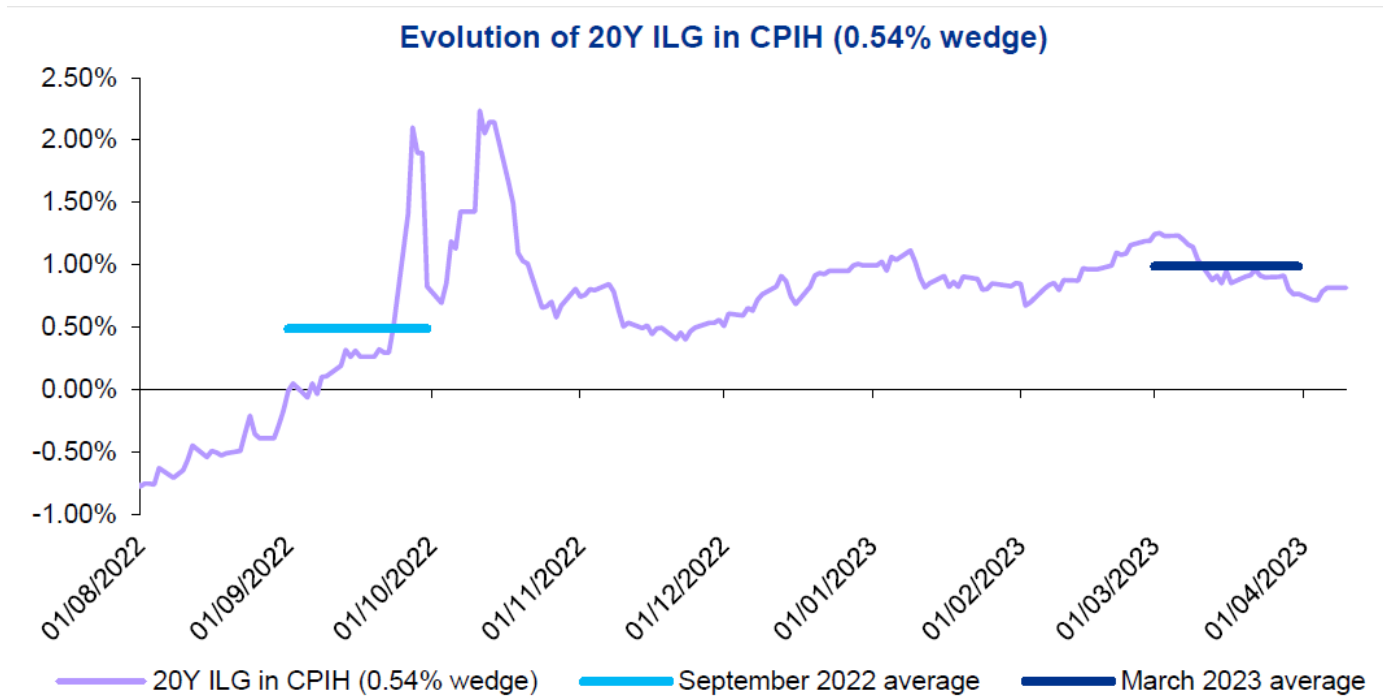
⁸⁴ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.' CMA (March 2021); para 9.196.

⁸⁵ 'RfR methodology for PR24' Oxera (September 2022); page 20.

⁸⁶ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital' Ofwat (December 2022); para 3.3.4.

⁸⁷ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital' Ofwat (December 2022); para 3.3.7.

FIGURE 11: EVOLUTION OF 20Y ILGS (CPIH); BLOOMBERG



Furthermore, events such as Covid-19 and the energy crisis must be adjusted for in a consistent manner, to maintain a focus on more permanent features of the industry.

Forward Rates

Ofwat has proposed not to include a forward-rate adjustment to the RfR in PR24, despite including one in PR19, arguing that said adjustments have poor predictive power and tend to systematically overestimate spot rates.⁸⁸ This is consistent with the CMA’s method at the PR19 redeterminations, where the authority also chose *not* to apply a forward-rate adjustment.⁸⁹

While we accept that forward-rates are, by definition, inexact, this uncertainty is not greater than the uncertainty present in flat RfRs. In choosing a flat RfR from 2024 onwards, Ofwat should recognise that it is, in effect, imposing a ‘flat forward-rate’ forecast. From an in-principle perspective, this is just as likely to be wrong as an ‘increasing’ or ‘decreasing’ forward-rate adjustment. The ‘in practice’ decision as to whether to apply a forward-rate adjustment should, therefore, primarily depend on: (i) the robustness of any forecasts; and (ii) the likely impact, particularly on customers, of either over or under stating the RfR.

⁸⁸ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital’ Ofwat (December 2022); page 8.
⁸⁹ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (March 2021); para 9.234.

Notwithstanding the above, we recognise that there are no particularly strong benefits arising *specifically* from adopting forward-rates per se. However, as we explain below in relation to the potential to index the RfR, it is important that the underlying trend in RfRs is captured *in some way* under any methodology.

Indexation of the risk-free rate

The clear current upward trend in the RfR should be reflected under the overall approach at PR24. To differing degrees, this can be achieved through: (i) the choice of averaging period; (ii) the consideration of forward-rates; and/or (iii) by indexing the RfR. At present, Ofwat's approach does not sufficiently consider the impact of the upward trend. Irrespective of the precise mechanism(s) used to redress this, we disagree with Ofwat's current position, when considered 'in the round'.

Our position is that, of the above solutions, indexation of the RfR is preferable. This is because the RfR is outside of company control and so it would be more efficient if its variance risk was allocated to customers. We further note that, indexation of the RfR can benefit customers financially (relative to a fixed RfR) in circumstances whereby the RfR declines. We explain elsewhere how a decline in the RfR in line with forecasts could return £92m to customers.

Inflation adjustment

We acknowledge that the transition of RPI to CPIH looks likely to go ahead in February 2030. We believe that market evidence of investors' expectations of inflation will be more relevant in the short term than official forecasts. Moreover, we note that investors' expectations of both RPI and CPIH inflation currently diverge considerably from those forecasts.⁹⁰ We recommend tracking this data over 2023/24, as the transitional commitment to CPIH becomes embedded in investors' expectations; then revisiting any gap between investor expectations and forecasts before considering any implications.

Finally, as First Economics notes, the risks of up to a 1% error in the inflation forecasts is a feature, and thus a weakness of, only using RPI ILGs for the RfR, further supporting the additional use of AAA rated bonds.⁹¹

1.1.1. Summary calculation

Based on a simple averaging of June 2023 data for iBoxx and 20-year ILGs (per CMA19), we estimate a risk-free rate of 1.99% for our business plan. We appreciate that this is a moving value and will need updating post business plan.

⁹⁰ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital' Ofwat (December 2022); fig 3.1 and 3.2.

⁹¹ 'The Risk-free rate.' First Economics (August 2022); page 6.

TABLE 21: OUR ALTERNATIVE RFR VALUE

Risk-free rate calculation (%), June 2023	iBoxx £ Non-Gilts AAA 10+ year series	iBoxx £ Non-Gilts AAA 10–15-year series	20-year index-linked gilts	
Tenor (years)	30	13.5	20	
Nominal	4.88	4.87		
Real RPI			1.01	
Real CPIH	2.71	2.57	1.33	
		AAA average	ILG	Average
Average		2.64	1.33	1.99

Inflation expectations	RPI	CPIH
H2 2023	4.55%	3.4%
2024	3.9%	2.9%
2025-2030	2.9%	2.0%
2030-	2.0%	2.0%

Source: Based on data from <https://www.gov.uk/government/statistics/forecasts-for-the-uk-economy-may-2023>.

COST OF EQUITY

Total Market Return (TMR)

Range of Estimators

We propose that the CMA’s approach to determining the TMR should be preferred to Ofwat’s, where the former used a wide range of estimators for the TMR. In contrast, under its final methodology for PR24, Ofwat proposes to focus on the overlapping estimator using a 10-20 year holding period when deriving its ‘ex-post’ range (therefore, excluding the non-overlapping estimator).⁹² Ofwat states that the non-overlapping estimator has too few data points and, as such, is too easily affected by outliers. However, the CMA (while acknowledging the relatively small number of observations, and thus the risk of disproportionate impacts from outliers), concluded that excluding such non-overlapping estimators may risk ‘cherry-picking’ from the data.⁹³

Use of historical and forward-looking evidence

Ofwat proposes to retain both historical and forward-looking approaches; but intends to use more recent data to inform the point estimate within the overall range.⁹⁴ This does not appear to be inconsistent with the CMA PR19 redeterminations (although we cannot comment in detail, until Ofwat ultimately decides ‘what estimates’ of the TMR to include and ‘how to

⁹² ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.’ Ofwat (December 2022); page 26.
⁹³ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (March 2021); para 9.333.
⁹⁴ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital’ Ofwat (December 2022); page 25.

weight them', under its PR24 final determinations). In the case that Ofwat intends to make use of Dividend Discount (Growth) Models, it is important to note that these are widely recognised to be the least robust estimation approaches available, due to being heavily assumption driven.

When deflating historical returns, and consistent with the CMA's PR19 redeterminations⁹⁵, we propose that a blended average of CPI/H and RPI back-cast series should be used, in contrast to Ofwat's proposal of only relying on the ONS' forthcoming CPIH back-series under its final methodology.⁹⁶ The ONS CPIH back-series relies upon the same data as existing RPI and CPI estimates (and consequently, suffers from the same underlying weaknesses they do). These include, as identified by the CMA in under its PR19 redeterminations, gaps in the historical data pre-WWII data in relation to CPI. Both series have merits and demerits and, as such, placing equal weight on the two, and possibly replacing CPI with the new CPIH series, will be the most appropriate approach.

Choice of TMR for the NWL WACC

The KPMG report⁹⁷ estimates a range for the total market return of 6.33% to 6.96%. The Total Market Return is a long-term measure that is supposed to be stable over short periods of time. We have therefore retained the 6.80% TMR value as used by the CMA in PR19.

Beta estimation

Choice of companies

We support Ofwat's proposal to focus on listed water company data and agree that this is most relevant. This approach is consistent with the CMA's position in its PR19 redeterminations.⁹⁸

Data frequency

We also agree with Ofwat's proposal to use daily betas, due to their greater precision. This is broadly in line with the CMA's PR19 approach, which used a range of frequencies (daily, weekly, and monthly) in its analysis; and the KPMG beta report, which holds the position that daily betas are the most robust input into setting the allowed return.⁹⁹ The use of daily betas in beta estimation is also consistent with good regulatory practice.¹⁰⁰

⁹⁵ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.' CMA (March 2021); para 9.295.

⁹⁶ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital' Ofwat (December 2022); page 27.

⁹⁷ KPMG Estimating the cost of Equity for PR24 (August 2023).

⁹⁸ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.' CMA (March 2021); para 9.479.

⁹⁹ 'Relative risk analysis and beta estimation for PR24' KPMG (September 2022); page 65.

¹⁰⁰ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.' CMA (March 2021); paras 9.457-9.465.

Investment horizon for beta estimation

We support the use of a long run investment horizon for beta estimation, which is consistent with both the CMA and KPMG, as outlined below. This is because:

- The water industry is characterised by long-lived assets, which require long-term investment. KPMG explain that both debt and equity investors in regulated utilities make long-term financing decisions, and that regulatory assets tend to be long-lived.¹⁰¹
- A long run investment horizon for estimating the forward-looking cost of equity is also important for reasons of consistency. In order for the WACC estimate to be a true expected return over the chosen time horizon, investment horizons across each parameter must be, where possible, consistent (the same). However, Ofwat is proposing using spot one, two, five and ten-year beta data, while placing 'particular weight' on longer estimation periods.¹⁰² Without a clear definition of 'particular weight', significant uncertainty is created surrounding the WACC's investment horizon. Furthermore, Ofwat's approach to the CAPM considers a long time period of 10-20 years.¹⁰³
- Using a long run investment horizon also mitigates the impact of temporary structural breaks, such as Covid-19 and the Russia-Ukraine war, on beta estimates. Using a short time period would place substantial, and incorrect, weight on these events, both of which are highly atypical and unlikely to influence the PR24 period and beyond.¹⁰⁴ In addition, given that (ex-post) investors were exposed to the impact of these events, it is incorrect to presume that any observed reduction in beta relating to them would reoccur *even if similar circumstances arose in future* (or at least, not to the same extent). In our view, the period from 2020 onwards should be excluded for the purposes of estimating beta. Relatedly, we note that under its PR19 redeterminations, the CMA excluded 'outliers' lying 1.5 times the interquartile range (above the third or below the first quartile). This excluded four-weekly beta estimates; a ten-year monthly five-year average; and a five-year monthly spot figure for December 2020.¹⁰⁵ At a minimum, Ofwat should adopt the CMA's approach and exclude outliers.

Use of unconditional CAPM

We disagree with Ofwat's assertion that the use of an unconditional CAPM would constitute a departure from standard regulatory practice, where betas are set for the period of the price control, rather than over the long-term CAPM investment horizon. This is not the case. As stated by KMPG: "*the standard version of CAPM used by regulators estimates the required return on an equity investment over a single period or investment horizon. This unconditional version of CAPM is the standard model.*"¹⁰⁶

¹⁰¹ 'Relative risk analysis and beta estimation for PR24.' KPMG (September 2022); para 2.2.3.

¹⁰² 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (December 20220); page 9.

¹⁰³ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (December 20220); page 9.

¹⁰⁴ 'Relative risk analysis and beta estimation for PR24' KPMG (September 2022); para 2.2.5.

¹⁰⁵ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.' CMA (March 2021); paras 9.474-9.475.

¹⁰⁶ 'Relative risk analysis and beta estimation for PR24.' KPMG (September 2022); paras 6.4.8-6.4.9.

Beta de-levering and re-levering

In its draft methodology, Ofwat proposes three approaches to beta de-levering and re-levering: (i) maintaining the PR19 approach, which involves the application of the Harris Pringle formula to de-lever and re-lever beta, while deriving an input for dent beta using empirical analysis, (ii) setting the debt beta at a level which would make the CAPM-WACC calculation invariant to gearing and (iii) changing the notional gearing to align with the EV gearing of listed companies.¹⁰⁷ In its final methodology, Ofwat proposes to use EV gearing in order to de-lever raw betas; and to otherwise maintain the PR19 approach.¹⁰⁸

We disagree with the use of EV gearing in completing the de-levering and re-levering of the beta (Ofwat's third option). This is because this method would allow companies to benefit from inflating their actual gearing, undermining the rationale for setting notional gearing in the first place. The KPMG beta report is consistent with this view.¹⁰⁹

In regard to Ofwat's second option, we recognise the implication of the Modigliani-Miller principle (that WACC should be invariant to gearing). However, setting the debt beta such that the CAPM-WACC calculation is invariant to gearing is problematic. For example, and as explained by KPMG:¹¹⁰

- It can be difficult to apply objectively, including determining which parameter of WACC should be adjusted; and by how much.
- It can introduce new distortions, as the new level of WACC to be held constant may vary between different levels of gearing. This variance of WACC with gearing may be caused by the calculation of other parameters of the WACC and, as such, priority should be assigned to calibrating these parameters accurately.
- Due to market frictions, it is not evident that there is an issue regarding WACC increasing with gearing. These frictions mean that the Modigliani-Miller assumption may not hold precisely in reality.¹¹¹

We propose, instead, to adopt an empirically justified approach for the debt beta and to focus on the appropriate calculation of the individual parameters of the WACC. As KPMG note, "*focus should be on the calibration of each parameter which all have margin of error which could be significantly larger than the variance to gearing highlighted in the draft methodology*".¹¹² Our position is consistent with that of the CMA under the PR19 redeterminations, which found that changes in the WACC in response to changes in gearing were only small.

Aiming Up

Under Ofwat's final methodology, the regulator is not proposing to aim up (thus rejecting the CMA's position under the PR19 redeterminations). Ofwat has specifically stated the following:

¹⁰⁷ 'Creating tomorrow, together: consulting on our methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (July 2022); page 20.
¹⁰⁸ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (December 2022); page 43.
¹⁰⁹ 'Relative risk analysis and beta estimation for PR24.' KPMG (September 2022); para 2.4.9.
¹¹⁰ 'Relative risk analysis and beta estimation for PR24.' KPMG (September 2022); para 7.5.7.
¹¹¹ 'Relative risk analysis and beta estimation for PR24.' KPMG (September 2022); para 7.5.5.
¹¹² 'Relative risk analysis and beta estimation for PR24.' KPMG (September 2022); para 7.5.8.

“We disagree that it is necessary to set an allowed return on equity above the mid-point of an estimated range, noting that the choice of the ends of ranges also influence the point estimate.” The regulator has further stated that: *“Our aim remains to set a determination that provides an efficient company, with the notional capital structure, a reasonable prospect of earning the base allowed return.”*¹¹³ Relatedly, while Ofwat has accepted the principle that, were there to be an asymmetry in risk, this could be adjusted for through the WACC, its intention at PR24 is to set a symmetrical balance of risk for an efficient company. Specifically, Ofwat has said: *“We consider that there are ways of addressing the issues raised by the CMA PR19 panel that are more beneficial to customers than aiming up. For instance, to the extent that there are issues around asymmetry or concerns about investment incentives at PR24, we propose, as our starting point, to address these issues at source rather than as an adjustment to the allowed return”*¹¹⁴ [emphasis added].

Whilst we support addressing asymmetry ‘at source’ wherever possible, we disagree with Ofwat’s position above and consider that it is appropriate to ‘aim-up’ at PR24, for the following reasons:

- **Mitigating customer harm in the face of uncertainty.** Because each parameter of the WACC (cost of equity) is subject to uncertainty, it is possible to either over – or under – state them. However, the detriment to customers is greater where the WACC is under-stated, as opposed to it being over-stated. This is because in the former case, under-investment (relative to the efficient level) leads to adverse outcomes and/or higher costs that persist over time. In contrast, in the latter case, the consumer detriment relates to ‘too high prices’ in the short run (that is, over the relevant price control, until the WACC is re-estimated). Therefore, there is a de-facto case for aiming up under this rationale (which is even more pertinent in a period of substantial investment, over the course of AMP8).
- **Addressing asymmetry.** As explained in the main body of this appendix, to be financeable the expected equity return must be equal to the allowed return. However, if returns are not symmetrical and instead are skewed (to the downside), investors must be compensated for this, for financeability to be achieved (which could include by means of aiming up on the WACC/cost of equity). At PR24, the evidence points to returns being materially skewed to the downside. Unless that skew is addressed, or investors are compensated for it in some other way, this also creates a strong case for aiming up in this instance.

The above is consistent with the reasons given by the CMA for aiming up in its PR19 redeterminations. The CMA ‘aimed up’ by 25bps in that case, noting the following factors as supporting its decision: concerns about the financeability of the settlement; concerns about uncertainty in the parameters; and the need to aim up to avoid the risk of underinvestment (our first rationale above); and a concern about downside skew in the overall package (our second rationale above).¹¹⁵

We would agree that, should Ofwat successfully set a symmetrical balance of risk at PR24, the asymmetry rationale for aiming up on the cost of equity would fall away.¹¹⁶ However, we note that:

¹¹³ *‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital’*; Ofwat (December 2022); page 54.

¹¹⁴ *‘PR24 and beyond: Discussion paper on risk and return.’* Ofwat (December 2021); page 22.

¹¹⁵ *‘Northumbrian Water response to PR24 and beyond: Risk & return discussion paper.’* NWL (February 2022); page 11.

¹¹⁶ Noting that this is not the only rationale as to why it may be appropriate to aim up.

- Firstly, Ofwat's stated intention at PR19 was also to set a symmetrical balance of risk; but (as evidenced previously) ex-post data indicates that this has *not* proved to be the case in practice. Nowhere has Ofwat set out a diagnosis of why this has occurred vis-à-vis the decisions it made under its previous determinations; and therefore, how it intends to avoid that reoccurring at PR24.
- Secondly, Ofwat's approach to RoRE risk analysis and the calibration of incentives at PR24 is at odds with its stated aim of achieving a symmetrical balance of risk. Most obviously, rather than using risk analysis to identify the range of possible outcomes for each parameter of the price control, and then selecting the 'most likely' value for an efficient firm, Ofwat is instead using risk analysis as more of a 'cross-check'. Indeed, there is an inherent tension between, on one hand, Ofwat publishing RoRE risk ranges, under which it has 'asserted' risk *will be* symmetrical; but, on the other, the regulator has yet to make those determinations, with Ofwat's method for various issues remaining unknown.

When considering aiming up, the CMA PR19 Determination made specific reference to the downside skew of expected ODI returns (along with other factors)

Overall, we conclude that expected returns on ODIs should reflect the balance of rewards and penalties. Accordingly, we would expect negative ODI-related returns on average. Therefore, for the expected return to be consistent with the cost of capital, we would expect a small premium to be required. (para 9.1340)

The overall degree of structural asymmetry in the ODIs, and otherwise in the determination, should be reflected in the choice of point estimate of the cost of capital. (para 9.1344)

The asymmetry of negative ODI returns for AMP7 has been borne out in practice to date, with the industry underperforming ODIs by 0.5% of RORE to date (2020-23, Table 1F). This is higher than the CMA estimate of 0.1-0.2% of RORE (9.1342), and contrasts with Ofwat's PR19 statement that did not expect AMP7 negative ODI payments for an efficient firm (para 9.1320).

Our analysis of the ODI risk ranges for PR24, under the Ofwat cap and collar approach suggests a ODI RORE probability range that is skewed to the downside. Our P50 RORE estimate for ODIs is -0.28% (see table 6).

On the assumption that Ofwat do not adjust the ODI methodology and targets to make it symmetric, we have applied a conservative 0.25% aiming up adjustment in our cost of equity assessment, to make sure **expected** returns match the cost of capital. This conservative approach does not take into account asymmetries of risk in expenditure and financing, which are much larger and would be additional to this.

THE COST OF NEW DEBT

Ofwat’s approach

In its final methodology, Ofwat¹¹⁷ proposes to calculate the allowed cost of new debt by: (i) retaining the average of iBoxx 10+ A-/BBB rated indices used in PR19 as the benchmark index; (ii) using a one-month trailing average; (iii) continuing to index the cost of new debt with no uplift for forward-rates; and (iv) applying a downwards benchmark index adjustment of 15bps.

Ofwat suggests that the downwards adjustment to the index of 15bps (previously referred to by Ofwat as the ‘outperformance wedge’) is justified both because: (a) companies are able to borrow at rates lower than implied by the index; and (b) companies being able to issue at shorter tenure.¹¹⁸

Outperformance wedge

We disagree with Ofwat’s approach to incorporate a benchmark index adjustment; and instead propose to follow the CMA’s approach¹¹⁹ in excluding such an adjustment. In not applying a downwards adjustments, the CMA concluded that there was insufficient evidence of an outperformance wedge between water company debt and the broader market. Instead, when bonds are controlled for differences in: tenor; rating; and timing, analysis shows that they follow the index relatively closely, rather than systematically outperforming it.¹²⁰ This point is further supported by analysis undertaken by KPMG who, in the PR19 CMA redeterminations, found that there was no outperformance or ‘halo effect’ on water company debt.¹²¹ Furthermore, in the CMA’s final determination for the RIIO-2 appeals, it maintained its provisional stance of removing the 22-25bp outperformance wedge introduced by Ofgem.¹²²

Summary calculation

We have used the IBOXX data as used in the debt reconciliation model, values for June.

TABLE 22: OUR ALTERNATIVE COST OF NEW DEBT CALCULATION

Average for June	iBoxx £ Non-Financials A 10+	iBoxx £ Non-Financials BBB 10+	Average
Nominal	5.52	6.27	5.89
Cost of new debt		Real, CPIH	3.82

Assuming 2% long term CPIH.

We note that this value will change over time and will need updated in the Determination.

¹¹⁷ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.’ Ofwat (July 2022); pages 73-79.

¹¹⁸ ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.’ Ofwat (July 2022); page 78.

¹¹⁹ ‘Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations.’ CMA (March 2021); para 9.823.

¹²⁰ ‘Northumbrian Water response to PR24 and beyond: Risk & return discussion paper.’ NWL (February 2022); page 25.

¹²¹ ‘NWL PR19 CMA Redetermination – Response to provisional findings.’ NWL (April 2020); para 299.

¹²² ‘Cadent Gas Limited, National Grid Electricity Transmission plc, National Grid Gas plc, Northern Gas Networks Limited, Scottish Hydro Electric Transmission plc, Southern Gas Networks plc and Scotland Gas Networks plc, SP Transmission plc, Wales & West Utilities Limited vs the Gas and Electricity Markets Authority – Final Determination Volume 2B: Joined Grounds B, C and D.’ CMA (October 2021); pages 69-71.

THE COST OF EMBEDDED DEBT

Ofwat's approach

Under its final methodology, Ofwat proposes to set a single (industry-wide) allowance for the cost of embedded debt. This will primarily be based on a balance sheet approach, drawing on analysis of actual company debt costs. Ofwat has said that an index-led approach will be used only as a 'cross check'. The balance sheet benchmark will be based on the median debt cost of what Ofwat refers to as 'large companies'¹²³. The balance sheet approach proposed by Ofwat also excludes the following instruments: swaps; junior debt; and intercompany loans. In relation to the index-led cross check, Ofwat has said that this will be based on the average of the A and BBB-rated GBP iBoxx non-financials 10+ indices. In terms of averaging periods for said indices, Ofwat has left this somewhat open, but has indicated it will look at 15-20 year trailing averages, arguing that there is no 'right' averaging period.¹²⁴

The exclusion of swaps

We remain opposed to the exclusion of swaps under Ofwat's balance sheet approach. Swaps are a valid debt instrument deployed by companies (and logically, are used precisely because they are an effective means by which to maximise the efficiency of company financing overall, to the benefit of customers). We note that the CMA's calculation of embedded debt under its PR19 redeterminations included swaps and disagree with Ofwat's characterisation that this was 'by necessity'¹²⁵ due to data availability.¹²⁶

Trailing average period for the index-led approach

When applying the index-led approach, it is important to take a long-term view. This is consistent with the CMA's position at the PR19 redeterminations, who considered that both a 15-year and 20-year trailing average for embedded debt was appropriate.¹²⁷ In particular, the CMA concluded that while a 15-year approach would match the average annual tenor at issue over the last decade, a 20-year approach matches the average maturity of the benchmark and better reflects "*the concept of funding long-life assets*".¹²⁸

The use of 20-year averages is able to capture behaviour over long cycles; and covers the vast bulk of the sector's debt.¹²⁹ This is particularly important in a setting where the proxy used for debt is highly volatile. The graph below shows

¹²³ That is to say, it excludes: Portsmouth Water, SES Water, and South Staffs Water.

¹²⁴ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital,' Ofwat (July 2022); page 65.

¹²⁵ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital,' Ofwat (2022); page 63.

¹²⁶ Had the CMA concluded that the inclusion of swaps was inappropriate (and would result in an overstatement of the cost of embedded debt) there were practical options available to it by which their impact could have been excluded.

¹²⁷ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations,' CMA (March 2021); para 9.709.

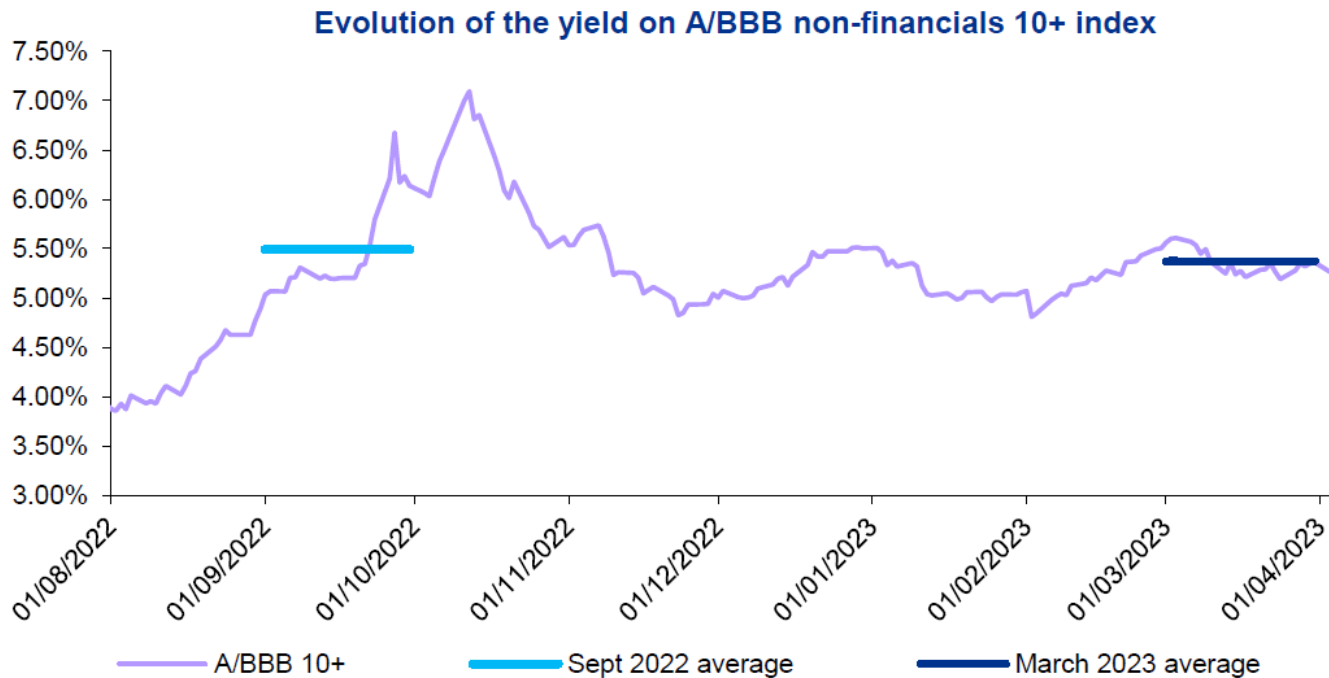
¹²⁸ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations,' CMA (March 2021); paras 9.710-9.713.

¹²⁹ 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations,' CMA (March 2021); para 9.698.

the yield curve of the iBoxx debt that Ofwat uses as a proxy for new and embedded debt. This debt has similar volatility to the ILGs used in estimation of the risk-free rate.

For the business plan, we have assumed the same embedded cost of debt of 2.50% for the NWL alternative as the updated EV value. We await further APR24 data and KPMG is also completing a report for the sector which will be available ahead of the Draft Determinations.

FIGURE 12: EVOLUTION OF THE YIELD ON A/BBB NON-FINANCIALS 10+ INDEX



THE CHOICE OF THE NOTIONAL LEVEL OF GEARING

Ofwat’s approach

In its PR24 Final Methodology, Ofwat proposes to adopt a notional gearing level of 55%, a reduction from PR19’s notional gearing level of 60%.¹³⁰ Specifically, Ofwat states: “[Reducing notional gearing] reflects our view that there is a stronger case for equity in the notional capital structure. We consider a reduction in gearing of c.5% compared with PR19 is achievable for the notional company ahead of 2025, taking account of the benefits of high inflation for equity in the current regulatory period.”¹³¹

¹³⁰ ‘Creating tomorrow, together: Our final methodology for PR24’ Ofwat (July 2022); page 5.
¹³¹ ‘Creating tomorrow, together: Our final methodology for PR24’ Ofwat (July 2022); page 96.

This is primarily driven by Ofwat's view that there should be a greater role for equity in the notional capital structure, in order to incentivise efficient financing choices.¹³² In addition, Ofwat suggest that higher levels of equity should increase the financial resilience of companies, as it reduces the chances of companies cutting costs or delaying investment, if costs of debt are too high. This, in turn, Ofwat suggests, will minimise the harm caused to customers.

In addition to the above, Ofwat considers that a higher equity buffer is appropriate in the context of likely substantial investment at PR24 and beyond.¹³³ The period of 2025-30 will likely entail large scale investment from companies. With this comes potential asset growth and, accordingly (Ofwat suggests) a greater role for equity finance.

In its final methodology, Ofwat is dismissive of evidence relating to actual company gearing and the consistency of notional gearing with credit rating guidance.¹³⁴

Purpose of notional gearing

In determining the appropriate level of notional gearing at PR24, it is important to start from considering 'why' one sets notional gearing in the first place. The underlying rationale for setting notional gearing is the same as that for determining allowed costs under economic regulation. Namely, the principle is that billpayers should fund *efficient* costs (that is, both financing costs and totex), leaving investors to bear risk associated with the actual financing structures and costs companies deploy/incur. It therefore intuitively follows from this that notional gearing *must* be closely informed by observable market evidence on efficient financing structures in the water industry (in the same way that efficient totex allowances are set with reference to benchmarking the actual costs incurred by companies). This is specifically to make sure that:

- The notional capital structure genuinely reflects an efficient capital structure for the industry, based on robust, verifiable, evidence.
- That there is a consistent and joined-up approach to determining what one means by a 'notionally efficient' firm in the first place (where capital structure is just one element of this).

In relation to the latter point, the salient issue is that firms face trade-offs that are relevant to other elements of the regulatory framework beyond notional gearing. Firstly, they may face trade-offs between capital and operating cost efficiency. Secondly, and somewhat relatedly, they may face trade-offs between various financing structures. Accordingly, firms must balance these, to maximise overall efficiency year-to-year. Thirdly, firms may face trade-offs between riskier and more innovative investments more likely to drive productivity gains *over time*, versus lower risk investments that are less likely to drive said productivity gains. The key implication that follows from this is that it is vital not to propose a notional firm (including a notional capital structure) that ignores these trade-offs, by being disconnected from *actual market data* for water companies.

¹³² ['Creating tomorrow, together: Our final methodology for PR24 – Appendix 10 Aligning risk and return'](#) Ofwat (December 2022); page 28.

¹³³ ['Creating tomorrow, together: Our final methodology for PR24 – Appendix 10 Aligning risk and return'](#) Ofwat (December 2022); page 29.

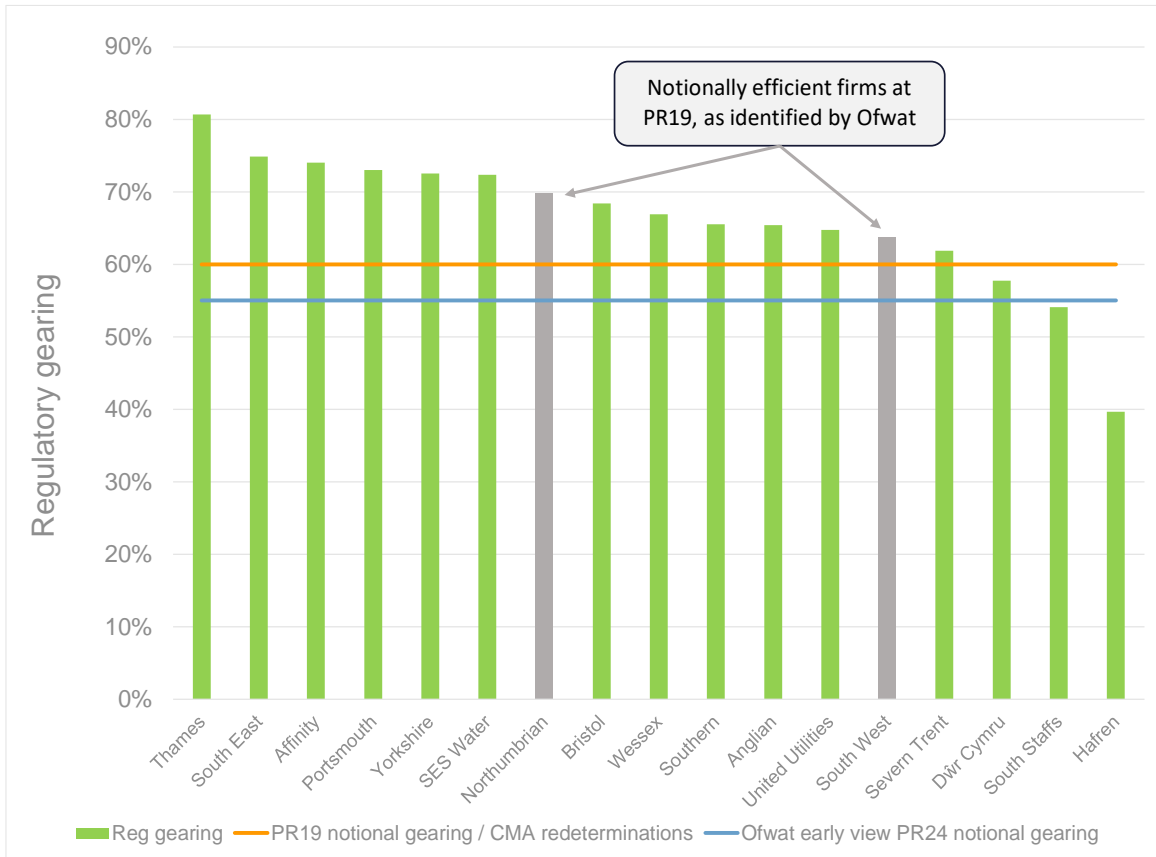
¹³⁴ ['Creating tomorrow, together: Our final methodology for PR24 – Appendix 10 Aligning risk and return'](#) Ofwat (December 2022); pages 29-32.

Water industry market data is not consistent with a reduction in notional gearing at PR24

Following from the above, actual market data does not support Ofwat’s proposal to lower notional gearing (particularly so substantively) at PR24. As shown in the figure below, only two companies have gearing below Ofwat’s proposed notional level of 55%, as of 2021/22. Indeed, the weighted average industry gearing in 2021/22 is 68.4%;¹³⁵ well above even the 60% notional gearing applied at PR19 (and under the CMA’s PR19 redeterminations).

Relatedly, when considering market evidence, we think particular consideration should be given to companies identified as being ‘notionally efficient’ by Ofwat, to ensure a consistent approach to the notional firm. Accordingly, the figure below also highlights NWL (Northumbrian) and South West Water (grey columns) as these were Ofwat’s benchmarks for wastewater and water totex efficiency respectively at PR19. Their gearing at 2021/22 was 70% and 64%; again well above the 55% notional gearing now proposed by Ofwat.

FIGURE 13: ACTUAL GEARING FOR 2021/22 VERSUS NOTIONAL GEARING



Source: Ofwat gearing data.

Wider market evidence is also unresponsive of notional gearing at 55%

¹³⁵ Analysis of Ofwat 2021/22 APR data.

While we consider water industry market data to be most relevant (given the importance of consistency with reference to a notional firm), wider market evidence from elsewhere is also unresponsive of Ofwat's proposals.

- Evidence from the aviation industry does not support the argument that the predominant structure in the water industry is inefficient. In 2021, HAL's gearing was approximately 76%,¹³⁶ while the final proposal in H7 was to apply a notional gearing level of 60%.¹³⁷
- Recent regulatory precedent in the energy sector set the notional gearing level at 60%, supporting the case that it is not appropriate for notional gearing to be set below this.¹³⁸
- Comparators from competitive infrastructure finance (for example, Offshore Transmission Operators) have consistently had gearing levels averaging around 75%.¹³⁹ Indeed, under DPC, CAP providers do not face regulatory gearing targets, providing more evidence for an efficient level of gearing than a regulator's judgement.¹⁴⁰

A reduction in notional gearing to 55% is further inconsistent with Ofwat's position on risk and reward, and its assessment of financeability, for the notional firm

There is a tension between assuming a hypothetical firm with a greater equity buffer (that is, reducing notional gearing to 55%) where equity risk is increasing, and Ofwat's proposed allowed equity return is reducing, at PR24. This risks financeability assessments on the notional firm providing a 'false sense of security'. Specifically, it could lead to Ofwat incorrectly concluding that allowed revenues are sufficient when, in fact, they need to be higher (that is, the regulator has 'wished for' greater equity, but without deploying a broader method whereby one would logically expect that to happen, for an efficient firm).

In addition, there are tensions between the credit ratings required by Ofwat and the gearing level needed to achieve these. Ofwat indicates that firms must target a credit rating of at least two notches above minimum investment grade (BBB+/Baa1) for the notional firm in their PR24 Business Plans. However, the gearing level needed to achieve such a rating from credit rating agencies does not align with Ofwat's proposed notional gearing level of 55%. Moody's threshold guidance indicates that a gearing level between 65-72% is sufficient for a Baa1 rating. A notional gearing level of 55% actually sits at the lower end of the range required for an A3 rating, a rating higher than Ofwat's target.¹⁴¹

Setting notional gearing at a level inconsistent with an efficient firm risks promoting inefficiency

¹³⁶ 'Heathrow (SP) Limited and Heathrow finance PLC – Investor report June 2022.' HAL (June 2022); page 9.

¹³⁷ 'Economic regulation of Heathrow Airport: H7 Final proposals – Summary.' CAA (2022); para 67.

¹³⁸ 'RIIO-2 Final Determinations – Finance Annex (REVISED).' Ofgem (February 2021); page 24.

¹³⁹ 'Infrastructure financing – an overview.' Schroders (April 2017); page 2.

¹⁴⁰ 'Notional capital structure: An independent assessment of Ofwat's proposed approach for PR24.' Frontier Economics (September 2022); page 5.

¹⁴¹ 'Rating methodology. Regulated water utilities.' Moody's investor service (June 2018); page 21.

By not considering notional gearing in a joined-up manner (including with reference to market data), Ofwat risks promoting inefficient capital structures. Indeed, as Frontier Economics note in their report, there is a risk that a reduction in the notional gearing level will mean companies are incentivised to move to inefficient actual gearing levels. This would lead to several adverse impacts, including: undermining investor confidence; over-reliance on a single source of financing; and equity issuance costs, which ultimately need to be borne by customers.¹⁴²

We have used the EV notional company gearing of 55% in our NWL alternative WACC, notwithstanding these concerns on the basis that such a large capital programme would reasonably require an increase in the equity buffer and the natural de-levering effect of the high inflationary period could reduce gearing by 5% over the AMP.

PARAMETERS TO BE ADJUSTED ONCE BUSINESS PLANS ARE RECEIVED

Retail Margin Adjustment

In PR19, Ofwat and the CMA calculated a retail margin adjustment to the WACC, using the retail control and RCV data from PR19 company business plans. We have used the calculation methodology for our own PR24 data to arrive at a zero retail margin adjustment for our NWL WACC. We anticipate that for the industry data, the RMA will reduce as financing costs increase, working capital requirements increase and the RCV increases faster over 2025-30 than the retail margin allowance. The evidence for this will be apparent once the PR24 industry business plan data on retail working capital and RCV growth is revealed.

We support the use of the retail fixed assets and the inclusion of all working capital components in assessing financing costs. The assessment of the financing costs will, however, need updating upon the submission of PR24 business plans. As the retail business is more likely to have floating rate short-term debt than fixed long-term debt, we suggest using the nominal cost of new debt from received business plans (in our case, the nominal cost of new debt in our WACC assessment) in calculating the working capital financing rate. This change in value will in turn affect the retail margin adjustment applied.

For the NWL alternative WACC, we have assumed a zero RMA, based on our analysis of our own business plan.

TABLE 22: NWL CALCULATION OF RETAIL MARGIN ADJUSTMENT

Retail Margin Adjustment	Calculation	NES, PR24	Source
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¹⁴² 'Notional capital structure: An independent assessment of Ofwat's proposed approach for PR24.' Frontier Economics (September 2022); page 6.

APR23 NBV	A	5	APR23 Table 2D
Nominal cost of capital	B	6.03%	Nominal WACC
Return on retail assets	C=A*B	0.30	
Debtor balance - Retail - nominal	D	119	APR23
Creditor balance - Retail - nominal	E	36	APR23
Measured income accrual balance - Retail - nominal	F	128	APR23
Advance receipts unmeasured balance - Retail - nominal	G	13	APR23
Annual working capital requirement	H=D-E+F-G	198	
Working capital financing rate	I	5.89%	Nominal cost of new debt
Return on working capital	J=H*I	12	
Annual financing costs	K = C+J	12	
Residential retail margin inclusive of margin on DPC pass through - nominal	L	8	Financial Model, 1% margin
Retail margin adjustment	M = L-K	-4	
Average RCV	N	7,867	Financial Model, 1% margin
Adjustment to return	O=M/N	-0.04%	Insufficient retail margin

Points to note for this calculation:

- The measured income accrual increases as more customers are metered and the unmeasured advance receipts decrease for the same reason (also customers switch to paying via direct debit rather than upfront lump sum).
- The working capital financing rate increases substantially from 3.06% in the EV to the IBOXX June 2023 value of 5.89%.

These two changes mean the financing requirements for retail exceed the 1% retail margin allowance, turning the RMA negative. While we have retained the 1% margin in the business plan, if this is repeated for the sector, an increment to the 1% margin may be warranted. We would expect this reversal of the retail margin adjustment to occur in most if not all of the industry business plans.

Mix of New and Embedded Debt

Ofwat's approach to determining the share of new/embedded debt at PR24 is to model new and embedded debt balances across 2025-2030, reflecting the regulator's assessment of refinancing needs; and the need to raise additional debt finance for RCV growth.¹⁴³ Under its early view WACC, Ofwat's proposed share of new debt was 17%. However, (and as recognised by Ofwat) because future industry financing needs are uncertain, there is a need to revisit projections once business plans are submitted, under the draft and final determinations.¹⁴⁴

Ofwat has further stated that it will model (embedded and new) debt balances based on company Plan data on: issuance; refinancing; accretion; and paydown.¹⁴⁵ The regulator has also set out that under its determinations, new debt for RCV

¹⁴³ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital,' Ofwat (December 2022); page 79.

¹⁴⁴ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital,' Ofwat (December 2022); page 79.

¹⁴⁵ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital,' Ofwat (December 2022); page 80.

formation will be determined based on the share of allowed totex that is capitalised; and that its approach will use the assumption that the share of new debt financing is the same as our PR24 notional gearing.¹⁴⁶

We broadly agree with Ofwat's approach, as summarised above. However, we will need to examine how Ofwat sets the share of new/embedded debt under its determinations in practice, using company data, under its determinations once they are made. We will therefore comment further at that time, should we have any observations as regards to the implementation of the regulator's method. Relatedly, one consideration may be that, should company investment needs vary materially (and for reasons outside of management control); then so might their (efficient) capital structures, including the mix of new and embedded debt. At this time, however, we do not think that company-specific adjustments for differences in the mix of debt are appropriate, so long as our other concerns regarding the approach to the WACC and financeability are addressed under Ofwat's determinations.

We have retained the 83%/17% split of embedded/new debt in our NWL WACC calculation, but we expect this to rebalance towards a higher proportion of new debt once the industry business plans are aggregated. Our own business plan has an embedded/new debt split of 59%/41%, but we have not used that in our NWL WACC calculation at this stage. A higher proportion of new debt will increase the overall cost of debt.

¹⁴⁶ 'Creating tomorrow, together: Our final methodology for PR24 Appendix 11 – Allowed return on capital.' Ofwat (December 2022); page 80.

OUR DIVIDEND POLICY (AS APPROVED BY THE BOARD IN 2022)

The three key overarching principles behind NWL's approach to dividends are that:

- Its owners should be able to receive a competitive and fair return on their investment which reflects the underlying risk profile of the business. This makes sure that there will be access to the necessary capital required to make investments for customer needs now and in the future.
- That dividends are transparent and reflect the service performance that the company delivers for customers and stakeholders.
- That the business is financially resilient over the long-term.
- NWL is seeking to maintain a progressive dividend policy that takes into account long-run financial performance and ensures that an efficient balance sheet is maintained. In line with the businesses' vision of being an industry leader, the policy seeks a competitive return consistent with a high-performing water company and to maximise returns over the long-term.

NWL considers that its dividend policy should be transparent, recognising the company's commitments to customers, employees¹⁴⁷ and investors, and with due attention to maintaining appropriate levels of financial resilience within the company. To deliver this the dividend policy will be based on four components:

- a base dividend component largely derived from the price control determination;
- a performance adjustment linked to business performance and outcomes for customers and the environment;
- a financial resilience adjustment designed to appropriately calibrate the company's overall gearing levels with the underlying risk profile of the business; and
- a smoothing adjustment to take into account smaller ad-hoc movements within any year that are expected to reverse out over the AMP.

These components are discussed in turn below.

Base dividend component

The approach to setting the base dividend is that it should broadly reflect the real cost of equity based on the capital structure as established in the latest regulatory determination, on the assumption that the regulatory cost of equity will always be set at a level that ensures the company remains financeable.

Performance adjustment

The regulatory framework incentivises companies to meet or exceed regulatory targets and shares these gains or losses between shareholders and customers. The base dividend will be adjusted up or down to reflect business performance in three areas:

- Totex performance: cost savings after the application of the regulatory approach to cost-sharing.

¹⁴⁷ Specifically, compliance with the pension deficit repair plan agreed with the Pension Trustee in respect of the NWPS, as submitted to the Pensions Regulator.

- ODI performance: net ODI rewards from improved outcomes for customers.
- Financing performance: where the company is able to secure debt financing at lower rates than assumed by the latest regulatory determination.

The Board will also consider any wider performance issues linked to customers or the environment.

Financial resilience adjustment

Financial resilience adjustments are designed to ensure the company maintains a prudent investment grade credit rating and an appropriate buffer to absorb relevant financial risks. To achieve this an adjustment will be made to ensure that any real terms growth in the regulatory capital value is funded from both debt and equity in line with an efficient capital structure.

Smoothing adjustment

To provide stability in dividends a further adjustment may be made to ensure that over a regulatory cycle there is a more even allocation of dividends taking into account future investment needs of the business. This is because expenditure within an AMP is not evenly spread and aligned with the phasing of the price control determination, and unexpected events (positive and negative) can impact financial performance in the short term.

In making these adjustments, the Board will aim to match dividends over a cumulative period of up to five years to the level required to deliver the policies set out under the first three components of the policy.

OUR RECENT DIVIDENDS HAVE BEEN IN LINE WITH THE ALLOWED RETURNS

On a notional gearing basis, our dividend yields have been in line with the CMA PR19 Real Return on Equity and are slightly above the CMA dividend yield assumed.

We have used dividends declared relating to the year rather than in the year of payment as we believe this is a more appropriate attribution of their timing. The two approaches match on a lagged basis.

TABLE 23: NWL DIVIDENDS PAID

Dividends £m, outturn	2019/20	2020/21	2021/22	2022/23
Declared relating to the year				
Interim	0.0	0.0	58.2	55.4
Final	0.0	123.3	55.4	25.3
Total	0.0	123.3	113.6	80.7
Regulatory equity				
Notional	1,726	1,679	1,819	2,039
Actual	1,418	1,279	1,377	1,614

Declared yields				
Notional	0.0%	7.3%	6.2%	4.0%
Actual	0.0%	9.6%	8.2%	5.0%

For comparison

Yields		Real CoE	
Ofwat	CMA	Ofwat	CMA
3.0%	3.18%	4.19%	4.73%

Data sources: NWL APR Reports, Table 4H, Ofwat and CMA PR19 FD.

Note: the 20/21 dividend also related to 19/20 performance.

OUR TAX STRATEGY

The Company is committed to fully complying with all its statutory tax obligations, including the payment and recovery of taxes at the right time and the provision of all relevant information to HM Revenue and Customs (HMRC) to support the amounts of tax concerned.

The Company’s Board owns and approves the Tax Strategy, which is published in the APR and [on our website](#). This comprises the following four components:

a) Tax governance arrangements

The Board reviews and approves all significant investment and business operating decisions directly or delegates the appropriate authority. The Company’s Audit Committee considers significant tax related matters as part of its monitoring of internal controls and financial reporting arrangements.

Day-to-day management of the Company’s tax affairs is delegated to the Tax Manager and to other appropriately qualified staff who have responsibility for specific taxes. All employees with responsibility for tax report to members of the Company’s senior management team which, in turn, reports to the Board.

The Company’s tax affairs are conducted in a business-like manner in accordance with the Company’s commitment to corporate responsibility.

b) Tax risk management framework

The Company’s Risk Committee oversees the risk assessment process applied by the business which includes an assessment of tax risks. Significant risks identified by the business are escalated for the Committee to consider.

As far as possible, through the activities of its Board, Committees and personnel responsible for tax matters, the Company seeks to reduce or eliminate the level of tax risk arising from its operations by ensuring appropriate processes and controls are in place.

The Company only takes tax positions which are justifiable and based on law, with advice taken from reputable professional firms where necessary. In accordance with internal governance procedures, any transaction that is likely to have material tax consequences must be referred to the Board.

To help manage tax risk, the Company's taxation affairs are only handled by appropriately qualified and experienced employees and, where necessary, training is given to non-tax employees who are involved in processes which have tax implications.

The Company does not tolerate or condone any form of tax evasion, whether committed or facilitated by its own employees or any associated persons (for example agents and other persons who perform services for or on behalf of the Company) and manages this risk by the use of appropriate processes.

c) Approach to tax planning

The Company considers tax as part of its business decision making process. When entering into commercial transactions, the Company seeks to obtain the benefit of tax incentives, reliefs, and exemptions available under UK tax legislation, consistent with the purpose and the letter of the law.

The tax affairs of the Company are arranged and managed in response to, and in support of, its business or commercial activities. Related party transactions are managed and documented to make sure they are in compliance with local tax law and practice.

d) Relationship with HMRC

The Company seeks to have a transparent and constructive relationship with HMRC on all taxation matters and keeps HMRC aware of significant transactions and business developments. All contact with HMRC is conducted in a professional and courteous manner.

The Company looks to obtain certainty from HMRC at the earliest opportunity on the tax treatment of complex or uncertain issues. Discussions with HMRC are held at least annually to review past and present tax risks and agree on the steps required to take matters forward. Resolution of any disputed matters will be sought through open discussion and negotiation with HMRC, but the Company is prepared to litigate in cases where it believes the technical basis of a decision is incorrect.

The Company takes an active role in the development of the UK's legislative framework through participation at company or industry level in government consultations on significant new tax laws.

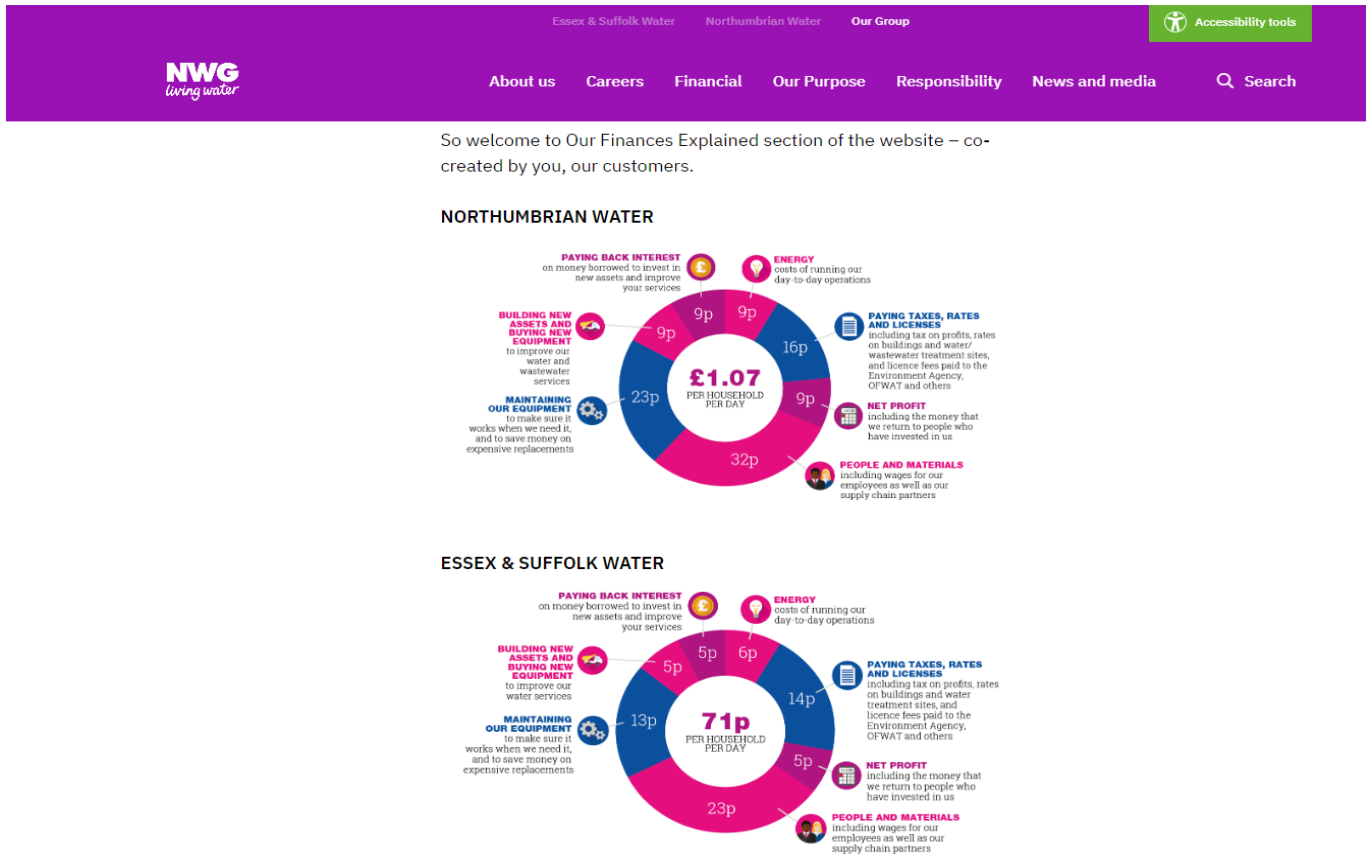
FINANCIAL TRANSPARENCY – OUR FINANCES EXPLAINED

For many years now, Northumbrian Water has shared with customers a simple explanation of what their bills are paying for. On [our website](#) and billing leaflets, we share the following explanation and graphics for both our North and South operating regions:

We wanted to help by creating a document that provides customers with a simple and easy way to understand how the company is financed and where their water and sewerage bill payment goes.

We held a co-creation workshop with customers to show them how this document could look. But thanks to their participation, they told us they would prefer a bill breakdown explanation with their annual bill, and for the rest of the detail to be housed online.

FIGURE 14: OUR FINANCES EXPLAINED



The detailed guide can be [downloaded from our website](#).

It explains the following areas in customer friendly language:

- What the money from customer bills delivers.
- Borrowings, interest, and taxes.
- Dividends.
- Our structure.

ANNEX C – FINANCEABILITY ASSESSMENT

Ofwat has a legal duty to make sure that efficient companies can finance their functions, including earn a reasonable return on the capital they employ. This is set out in s2 of the Water Industry Act. Section 2(c) states ‘*the Authority shall exercise and perform the powers and duties mentioned in subsection (1) above in the manner which he or it considers is best calculated.... to secure that companies holding appointments under Chapter 1 of Part 2 of this Act as relevant undertakers are able (in particular, by securing reasonable returns on their capital) to finance the proper carrying out of those functions*’.

This duty was tested at the CMA for PR19¹⁴⁸, who carried out a price control redetermination for four companies that found that a higher return on capital was required to allow the appellants to finance their functions.¹⁴⁹

As we have stated elsewhere in the ‘Risk and return’ document, a full assessment of financeability needs to consider both financeability to equity and debt. We explain elsewhere in the document why we consider that the Ofwat ‘early view’ (EV) return is not financeable to equity in particular because it does not compare favourably to riskless assets or alternative investment opportunities. Investors could earn a higher return in lower risk investments leading to our conclusion that the EV return is too low and hence we suggest an alternative return, this is true even when we update the ‘early view’ for market movements in line with Ofwat’s email to companies on 8 September 2023. In this appendix we summarise our analysis about the financeability of the business plan against the debt credit metrics.

Approach and key assumptions

In undertaking the financeability analysis for debt financing we take the following approach, consistent with the Ofwat methodology:

- Northumbrian Water limited (NWL) has historically been rated by Moody’s and S&P. We are also currently completing a rating assessment from Fitch with a potential intention to drop the S&P rating. Hence, we have used the key credit metrics and calculations that would apply from all three rating agencies in our financeability analysis (see Table 23).
- While Ofwat require a rating target of Baa1/BBB+ for the notional structure, we have used Baa2/BBB for the actual structure in line with the recent licence modifications.
- To comply with Ofwat guidance, we have set out our financeability under both notional and actual structure again in line with Ofwat’s methodology and its notional gearing assumptions of 55% as well as the detailed balance of embedded and new debt and the structure of that debt.
- We have used the Ofwat Early View WACC but updated this in line with movements in the market data in line with Ofwat’s email on 8 September, we take a cut-off date of 30 June, so we use one month of June 2023 market data for Risk Free Rate and Debt costs.

¹⁴⁸ <https://www.gov.uk/cma-cases/ofwat-price-determinations>.

¹⁴⁹ https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_-_web_version_-_CMA.pdf Para 10.125.

- The notional structure guidance requires financeability to be assessed before the inclusion of PR19 reconciliation revenue, of over £120m¹⁵⁰.

TABLE 23: KEY CREDIT METRICS THAT WE CONSIDER IN THE ANALYSIS

Key Ratio	Threshold	
	Notional	Actual
	Baa1/BBB+	Baa2/BBB
Adjusted cash interest cover ratio (Moody's)	1.50	1.30
Funds from operations / net debt (S&P)	9.0%	6.0%
Gearing	72.0%	80.0%
PMICR (Fitch) Cash	1.40	1.30
PMICR (Fitch) Nominal	1.70	1.60

Source: Rating agencies.

We consider the metric average values over the 2025-30 period. We believe that a ratings agency would ‘look through’ a one-off metric shortfall, but a persistent shortfall or a trend would be an issue. We anticipate an equity injection in 2030/31 may be required, so any metric shortfall in 2029/30 may be mitigated by such a commitment.

It is possible to retain a credit rating if two of the three main metric targets are met. We have assumed gearing as the primary metric that must be met, while one of the two other metrics can fall short if the other passes. We assume a stress test is failed if more than one metric fails for more than one year.

For both AICR and FFO/Debt, we are using the alternative calculation. For AICR, this means the deduction of excess fast money from FFO (Moody’s). For FFO/Net Debt this deducts Index Linked Debt accretion from the FFO (S&P).

For PMICR, we used the following calculations. These require small adjustments to the Ofwat Financial Model metrics, but all the necessary data is taken from the financial model.

¹⁵⁰ For this reason, the equity injection we have used for the notional business must be seen as a notional value driven by the Ofwat guidance. The more relevant equity injection is for the actual structure business, post PR19 reconciliation revenue.

TABLE 24: PMICR CALCULATIONS

Components of Cash Flow-Based and Nominal PMICRs

	Cash flow-based PMICR	Nominal PMICR
Numerator	EBITDA ^a Less nominal regulatory depreciation Less cash tax Less cash pension deficit repair	EBITDA ^a Less nominal regulatory depreciation Plus yoy RAV indexation Less cash tax Less cash pension deficit repair
Denominator	Cash interest	Total interest

^a Where possible, EBITDA is adjusted to reflect the regulatory totex expense rate ("pay as you go" for UK water or "fast money" rate for UK gas and electricity)
Source: Fitch Ratings

In line with Ofwat guidance, we have assumed the base dividend yield is 4.47% (EV adjusted real cost of equity)¹⁵¹, so the minimum dividend yield is 2.24%.

Finally, we note that the guidance for RR16 – Financial Ratios requires the Notional Company metrics to be completed pre-financeability adjustments, with the Actual structure metrics including them. We therefore assess financeability in the same way.

The NWL financeability adjustments relate entirely to PR19 reconciliation income and generate material increases in revenue for AMP8 that improve financeability.

Ofwat adjusted EV WACC

Following the Ofwat WACC email on 8 September, we have updated the Ofwat EV WACC for market data for three areas. In all cases, we have retained Ofwat’s methodology and merely updated with the latest data (June 2023).

TABLE 25: UPDATED OFWAT ‘EARLY VIEW’ WACC

Component	Real, CPIH			
	Ofwat (FD) A	CMA FD B	PR24 early view C	PR24 Ofwat Ev Updated D
Gearing	60%	60%	55%	55%
Risk-free rate (RFR)	-1.39%	-1.34%	0.47%	1.33%
Total market return (TMR)	6.50%	6.80%	6.46%	6.46%
Equity risk premium (ERP)	7.89%	8.15%	5.99%	5.13%
Debt beta	0.125	0.075	0.100	0.100

¹⁵¹ Ofwat: For our determinations, we intend to retain a minimum assumption for dividend yield that is 50% of the base yield. (Appendix 10, p40).

Unlevered beta	0.29	0.2901	0.27735	0.277
EV Gearing	54.20%	54.20%	53.35%	53.35%
Asset beta on PR19 basis	0.36	0.331	0.331	0.331
Notional equity beta	0.71	0.714	0.613	0.613
Aiming Up		0.25%		
Cost of equity	4.19%	4.73%	4.14%	4.47%
Proportion of embedded debt	80%	83%	83%	83%
Cost of new debt	0.53%	0.19%	3.28%	3.67%
Cost of embedded debt	2.42%	2.47%	2.34%	2.50%
Issuance and liquidity costs	0.10%	0.10%	0.10%	0.10%
Overall cost of debt	2.14%	2.18%	2.60%	2.80%
Appointee WACC (vanilla)	2.96%	3.20%	3.29%	3.55%
Retail net margin deduction	0.04%	0.08%	0.06%	0.06%
Wholesale WACC (vanilla)	2.92%	3.12%	3.23%	3.49%

NOTIONAL GEARING FINANCEABILITY

We show the metrics for the notional company, updated Ofwat EV WACC, with no equity injections and 2.24% minimum dividend (half of the cost of equity).

TABLE 26: NOTIONAL GEARING OF 55%, OFWAT EV WACC, 2% DIVIDEND, NO EQUITY INJECTION

Notional Gearing 55%	Average 2025-30	2025/26	2026/27	2027/28	2028/29	2029/30	Ratings
PR24 Ofwat EV updated							Target
Appointee, Outturn							Baa1/BBB+
Pre PR19 reconciliation adjustments	Average						
Adjusted cash interest cover ratio (Moody's)	1.54	1.79	1.61	1.43	1.46	1.43	1.50
Funds from operations / net debt (S&P)	7.44%	9.10%	8.03%	6.96%	6.73%	6.39%	9.00%
Gearing	61.8%	57.2%	60.3%	62.5%	64.0%	65.0%	72.00%
PMICR (Fitch) Cash	1.48	1.69	1.55	1.37	1.41	1.39	1.40
PMICR (Fitch) Nominal	1.76	1.98	1.85	1.67	1.67	1.64	1.70
Equity injection £m, Outturn		-	-	-	-	-	
Dividends, £m. Outturn	2.24%	58	64	65	68	71	

This is unfinanceable under the FFO/debt, AICR and PMICR metrics.

Next we show that even if we cut dividends to zero under notional and use the EV adjusted WACC with no equity injections this is still unfinanceable under FFO/debt and AICR.

These two stages both suggest that the early view adjusted WACC may be 'too low' and will not meet Ofwat's s2 duty to ensure the financeability of the sector.

TABLE 27: NOTIONAL GEARING OF 55%, OFWAT EV WACC, ZERO DIVIDEND

Notional Gearing 55%	Average 2025-30	2025/26	2026/27	2027/28	2028/29	2029/30	Ratings
PR24 Ofwat EV updated							Target
Appointee, Outturn							Baa1/BBB+
Pre PR19 reconciliation adjustments	Average						
Adjusted cash interest cover ratio (Moody's)	1.61	1.81	1.67	1.50	1.55	1.55	1.50
Funds from operations / net debt (S&P)	7.93%	9.29%	8.40%	7.45%	7.37%	7.16%	9.00%
Gearing	59.3%	56.3%	58.5%	59.9%	60.7%	60.9%	72.00%
PMICR (Fitch) Cash	1.55	1.72	1.60	1.44	1.50	1.50	1.40
PMICR (Fitch) Nominal	1.84	2.00	1.90	1.74	1.77	1.76	1.70
Equity injection £m, Outturn		-	-	-	-	-	
Dividends, £m. Outturn	-	-	-	-	-	-	

Next we show that if we inject £400m of equity in 25/26, we arrive at a financeable notional company, pre reconciliation adjustments, this informs our assumption for the level of equity required. We assume the ratings agencies use gearing and AICR as the driver for the Baa1/BBB+ rating and ignore the FFO/Debt shortfall.

TABLE 28: NOTIONAL GEARING OF 55%, OFWAT EV WACC, 2% DIVIDEND, EQUITY INJECTION

Notional Gearing 55%	Average 2025-30	2025/26	2026/27	2027/28	2028/29	2029/30	Ratings
PR24 Ofwat EV updated							Target
Appointee, Outturn							Baa1/BBB+
Pre PR19 reconciliation adjustments	Average						
Adjusted cash interest cover ratio (Moody's)	1.70	1.95	1.82	1.57	1.59	1.55	1.50
Funds from operations / net debt (S&P)	8.57%	10.46%	9.36%	8.04%	7.72%	7.29%	9.00%
Gearing	56.4%	51.1%	54.6%	57.2%	59.0%	60.2%	72.00%
PMICR (Fitch) Cash	1.63	1.85	1.74	1.51	1.54	1.50	1.40
PMICR (Fitch) Nominal	1.92	2.12	2.07	1.83	1.82	1.77	1.70
Post PR19 reconciliation adjustments							
Adjusted cash interest cover ratio	1.91	2.25	1.93	1.79	1.81	1.77	1.50
Funds from operations / net debt (S&P)	9.41%	11.48%	9.78%	8.95%	8.63%	8.21%	9.00%
Gearing	55.4%	50.7%	54.0%	56.2%	57.6%	58.4%	72.00%
PMICR (Fitch) Cash	1.84	2.15	1.85	1.73	1.75	1.72	1.40
PMICR (Fitch) Nominal	2.09	2.35	2.16	2.01	2.00	1.950	1.70
Equity injection £m, Outturn		400	-	-	-	-	
Dividends, £m. Outturn	2.24%	68	71	73	76	80	

The Notional structure with EV WACC is financeable for debt metrics at a 2.24% dividend but only with equity injections of £400m.

ACTUAL STRUCTURE FINANCEABILITY

All actual structure metrics are shown post PR19 reconciliation adjustments. Ofwat accept the use of post financeability adjustments for the Actual structure in the Table RR16 Block B, so we have done the same.

We show the metrics for actual company using the updated Ofwat EV WACC, with no equity injections and 2.24% minimum dividend. This is unfinanceable under the FFO/debt and PMICR metrics.

TABLE 29: ACTUAL GEARING, OFWAT EV WACC, 2.24% DIVIDEND, NO EQUITY INJECTION

Actual Gearing	Average 2025-30	2025/26	2026/27	2027/28	2028/29	2029/30	Ratings
PR24 Ofwat EV updated							Target
Appointee, Outturn							Baa2/BBB

Post PR19 reconciliation adjustments							
Adjusted cash interest cover ratio	1.52	1.73	1.48	1.44	1.48	1.46	1.30
Funds from operations / net debt (S&P)	5.67%	6.72%	5.73%	5.41%	5.35%	5.16%	6.00%
Gearing	76.4%	74.5%	76.1%	76.8%	77.2%	77.2%	80.00%
PMICR (Fitch) Cash	1.46	1.65	1.42	1.39	1.43	1.42	1.30
PMICR (Fitch) Nominal	1.55	1.69	1.53	1.49	1.52	1.498	1.60
Equity injection £m, Outturn		-	-	-	-	-	
Dividends, £m. Outturn	2.24%	33	37	39	41	44	

We show that even if we cut dividends to zero under notional and use the EV updated WACC with no equity injections this is still unfinanceable under FFO/debt and PMICR. This again suggests that the EV adjusted WACC is too low.

TABLE 30: ACTUAL GEARING, OFWAT EV WACC, ZERO DIVIDEND

Actual Gearing	Average 2025-30	2025/26	2026/27	2027/28	2028/29	2029/30	Ratings
PR24 Ofwat EV updated							Target
Appointee, Outturn							Baa2/BBB
Post PR19 reconciliation adjustments							
Adjusted cash interest cover ratio	1.55	1.74	1.50	1.47	1.52	1.52	1.30
Funds from operations / net debt (S&P)	5.87%	6.78%	5.86%	5.61%	5.62%	5.50%	6.00%
Gearing	74.9%	74.0%	75.1%	75.3%	75.2%	74.7%	80.00%
PMICR (Fitch) Cash	1.50	1.67	1.44	1.42	1.48	1.48	1.30
PMICR (Fitch) Nominal	1.58	1.70	1.55	1.52	1.56	1.552	1.60
Equity injection £m, Outturn		-	-	-	-	-	
Dividends, £m. Outturn	-	-	-	-	-	-	

If we inject £400m of equity in 25/26, we arrive at a financeable actual structure company, post reconciliation adjustments.

FFO/Debt and PMICR have little headroom for stress tests however.

TABLE 31: ACTUAL GEARING, OFWAT EV WACC, 2.24% DIVIDEND, EQUITY INJECTION

Actual Gearing	Average 2025-30	2025/26	2026/27	2027/28	2028/29	2029/30	Ratings
PR24 Ofwat EV updated							Target
Appointee, Outturn							Baa2/BBB
Post PR19 reconciliation adjustments							
Adjusted cash interest cover ratio	1.65	1.86	1.65	1.56	1.59	1.57	1.30
Funds from operations / net debt (S&P)	6.45%	7.52%	6.62%	6.18%	6.07%	5.84%	6.00%
Gearing	70.9%	68.5%	70.4%	71.4%	72.0%	72.2%	80.00%
PMICR (Fitch) Cash	1.59	1.78	1.57	1.51	1.55	1.53	1.30

PMICR (Fitch) Nominal	1.66	1.78	1.68	1.61	1.63	1.605	1.60
Equity injection £m, Outturn		400	-	-	-	-	
Dividends, £m. Outturn	2.24%	42	46	48	51	53	

If we adjust the WACC to the NWL alternative, the financeability is much more certain, with a degree of headroom for stress tests.

TABLE 32: ACTUAL GEARING, NWL ALTERNATIVE WACC, 2% DIVIDEND, EQUITY INJECTION

Actual Gearing	Average 2025-30	2025/26	2026/27	2027/28	2028/29	2029/30	Ratings
NWL Alternative WACC							Target
Appointee, Outturn							Baa2/BBB
Post PR19 reconciliation adjustments							
Adjusted cash interest cover ratio	1.88	2.09	1.90	1.79	1.82	1.79	1.30
Funds from operations / net debt (S&P)	7.23%	8.17%	7.41%	6.99%	6.91%	6.69%	6.00%
Gearing	70.1%	68.2%	69.9%	70.7%	71.0%	70.9%	80.00%
PMICR (Fitch) Cash	1.79	2.00	1.79	1.70	1.74	1.73	1.30
PMICR (Fitch) Nominal	1.81	1.94	1.83	1.76	1.78	1.760	1.60
Equity injection £m, Outturn		400	-	-	-	-	
Dividends, £m. Outturn	2.67%	50	56	58	62	66	

STRESS TESTS – NOTIONAL AND ACTUAL GEARING (TABLE RR17)

In the table below we set out the stress tests that we have applied to the notional and actual company in order to test the financial resilience of the business plan, with some summary justifications for their application. Table RR17 has the metric values for the actual company pre mitigation.

We have carried out Ofwat’s stress tests for Scenarios A-H. For the Scenarios I, J and K, we set tougher stress tests as per below.

TABLE 33: ADDITIONAL NWL STRESS TESTS FOR FINANCEABILITY

NWL Additional stress tests	Scenario (to be applied in each year of AMP8)	Commentary/rationale
Stress Test I Totex	20% over-spend	We test Totex at 20% rather than Ofwat’s prescribed 10% scenario, pre-cost sharing rates. This reflects observed performance in AMP7 (which supports a higher range of performance outcomes than AMP6). It also recognises the changes in the scale of the capital programme and the nature of the expenditure, which will include a much larger proportion of enhancement costs than base expenditure, and the fact that NWL will have less flexibility over enhancement expenditure with Price Control Deliverables applied and that this expenditure is construction expenditure. We include retail costs, which also carry the risk of cost inflation being higher than forecast.
Stress Test J ODIs	2% of RoRE annually	We test ODI penalties at 2% RoRE in each year of AMP8 reflecting both current performance of some companies but also the introduction of more high-powered incentives in AMP8.
Combined I and J scenarios	5% Totex and 2% ODIs = 5% RORE	We test a combination scenario of a 5% totex overspend and 2% ODI penalty, a 5% reduction in RORE overall. This assumes some covariance across scenarios (it is unlikely that P10s on all scenarios would happen at the same time). It also reflects a p10 industry RORE performance of -5.5% of RORE for totex and ODIs for AMP7 to date.

Mitigations

We describe the mitigations we have identified and applied under our Business Plan, in order to ensure financial resilience in the event of shocks.

Inclusion of PR19 reconciliation income

Our Business Plan includes a material level of additional revenue over 2025-30 relating to PR19 reconciliation items (DSRA; cost of debt; tax; and others). While we acknowledge that Ofwat’s guidance¹⁵² is to exclude this income from financeability assessments for the notional company, in practice for the actual company, it will aid financeability for NWL and will lessen the need for other mitigation measures. We have therefore included this income when assessing the financeability of our Business Plan on an actual gearing basis. This does not undermine business plan incentives, as Ofwat only uses notional gearing when assessing financeability.

¹⁵² ‘Creating tomorrow, together: Our final methodology for PR24 Appendix 10 – Aligning Risk and Return.’ Ofwat (December 2022); page 39.

Targeted management actions

Our executive team implements the Board's strategies and closely monitors performance. This includes making sure sufficient and suitable resources are applied to scrutinise performance; and to identify and manage risk. It also makes sure there is an appropriate: assignment of responsibilities; corporate structure; reporting lines and accountabilities, all supported by annual positive assurance on systems and controls.

Dividend policy

Our dividend policy is closely linked to performance. Therefore, many of the stress tests outlined above would manifest themselves as underperformance against the PR24 Final Determination, with a subsequent impact on dividends. The policy also includes the option of financial resilience adjustments, designed to ensure the company maintains a prudent investment grade credit rating and an appropriate buffer to absorb relevant financial risks. The policy would thus reflect the impacts on performance of the stress tests and consider the financial resilience requirements of the business.

New equity raising

While the notional structured core Plan assumes a certain level of new equity being raised, the actual required amount could be higher, should the stress test conditions require it.

Interim Determination

Whilst NWL is only proposing specific notified items, the substantial effects (SE) interim determination (IDOK) mechanism could apply, should totex increase significantly for reasons beyond management control. In practice for NWL, this would mean an increase of 4% or more of opex would qualify for an SE IDOK. We would not anticipate this applying immediately at that threshold, but it would have to be considered as a mitigation of any opex increase stress test scenario of more than 5%, for example.

Correlation of macro-economic effects between company costs and CPIH

Significant cost shocks to the UK economy would impact the water industry. Macro-economic events that drive increased costs, such as increased energy prices, will increase both company costs and CPIH, as seen over 2021-23. In this way, the increase in revenue and RCV through an increase in CPIH will at least partially offset the impacts on company costs (thus, mitigating the impact of the shock). There would be a timing difference, however, with costs incurred at least a year before revenues begin to adjust. Additional RCV indexation growth would provide additional debt capacity, which would help to cover the increased costs from a cash perspective.

Northumbrian Water has been financially resilient to date

Our financial resilience under our business plan for PR24 (evidenced above) should also be seen in the context of us sustaining a financially resilient business throughout the Covid-19 pandemic and energy crisis (both of which were severe real-world stress tests). We did not declare any dividends over 2019-20 and 2020-21 until the outcome of the CMA

Determinations and the impact of the pandemic was clear. Our dividends over 2019-22 were at an average yield of 4.5%¹⁵³, within the real cost of equity range set by the CMA in PR19.¹⁵⁴

1.1.1. Conclusions

Our analysis shows that even under a stretching notional company gearing assumption of 55% in order to produce a financeable business plan for AMP8 we will need to assume a material equity injection of c.£400m and a reduction in dividend yield to half of the allowed equity return across the period. With the LTS implying the potential for further equity investment in PR29 and beyond potentially upto 2050 this raises significant questions around the real world financeability of the plan and the attractiveness to equity investment.

The picture deteriorates further when reasonable stress-tests are applied reflecting the observed sector performance presently across 2020-23. Indeed a 10% totex overspend or 3% ODI RoRE penalty (average current operational sector RoRE is -2.4% see table 2) would require a further £100-300m of equity to be injected. Under the stronger stress tests NWL would require further additional equity to be injected (see below) with upto £600m additional equity needed if the business were to overspend by c.20% which some companies may outturn AMP7 at. While there are mitigants like end of period cost sharing reconciliations and interim determinations, the stress tests generally confirm the critical importance of the access to equity finance. For that reason, there needs to be a level of equity return that attracts such investment.

The above analysis provides further evidence that the updated 'early view' WACC is likely insufficient to meet the equity financeability requirements in line with Ofwat's s2 duty.

¹⁵³ Updated dividend policy letter to J Russell December 2022.
¹⁵⁴ 4.73% per CMA FD19.

RESULTS OF ACTUAL GEARING STRESS TESTS – PRE AND POST MITIGATION

The Stress tests results pre mitigation are shown in Table RR17. Targeted rating is BBB/Baa2.

TABLE 34: ACTUAL COMPANY STRESS TEST RESULTS FOR NWL

RR17	From	Type	Actual Gearing - Table RR17					Metric pre mitigation					
			Test	No mitigation	Dividend adjusted	Equity/IDOK	Additional Equity £m	Gearing	ACICR	FFO/debt (S&P)	PMICR	PMICR Nominal	
A	Ofwat	Cash	Totex underperformance (10% of totex) over five years.	Fail	Fail	Pass	400	Pass	Fail	Fail	Fail	Fail	
B	Ofwat	Cash	ODI underperformance payment (3% RoRE) in one year	Fail	Pass	N/a	N/a	Pass	Pass	Fail	Pass	Fail	
C	Ofwat	Inflation	Inflation 2% below the base case in the business plan in each year of the price review	Pass	N/a	N/a	N/a	Pass	Pass	Pass	Pass	Fail	
D	Ofwat	Inflation	Deflation of -1% for two years, followed by a return to the long-term inflation target.	Fail	Pass	N/a	N/a	Pass	Pass	Fail	Pass	Fail	
E	Ofwat	Inflation	10% spike in inflation with a 2% increase in wedge between RPI and CPIH, followed by two years at 5% and a 1% increase in wedge.	Pass	N/a	N/a	N/a	Pass	Pass	Fail	Pass	Pass	
F	Ofwat	Cash	Increase in the level of bad debt (20%) over current bad debt levels.	Pass	N/a	N/a	N/a	Pass	Pass	Pass	Pass	Pass	
G	Ofwat	Debt	Debt refinanced as it matures, with new debt financed at 2% above the forward projections.	Fail	Fail	Pass	100	Pass	Pass	Fail	Pass	Fail	
H	Ofwat	Cash	Financial penalty – equivalent to 6% of one year of Appointee turnover	Fail	Pass	N/a	N/a	Pass	Pass	Fail	Pass	Fail	
I	NWL	Cash	20% totex overspend	Fail	Fail	Pass	800	Fail	Fail	Fail	Fail	Fail	
J	NWL	Cash	2% ODI penalty each year	Fail	Fail	Pass	200	Pass	Fail	Fail	Fail	Fail	
K	NWL	Cash	5% totex and 2% ODI penalty	Fail	Fail	Pass	400	Pass	Fail	Fail	Fail	Fail	

The stress test results can thus be mitigated through a hierarchy of existing headroom, adjusting dividends and an interim determination / injection of equity.

RESULTS OF NOTIONAL GEARING STRESS TESTS – PRE AND POST MITIGATION

Although not required by Ofwat, we have carried out the same set of stress tests for the notional company. We target the BBB+/Baa1 rating. The results are similar to the actual gearing tests.

TABLE 34: NOTIONAL COMPANY STRESS TEST RESULTS FOR NWL

RR17	From	Type	Actual Gearing - Table RR17					Metric pre mitigation					
			Test	No mitigation	Dividend adjusted	Equity/IDOK	Additional Equity £m	Gearing	ACICR	FFO/debt (S&P)	PMICR	PMICR Nominal	
A	Ofwat	Cash	Totex underperformance (10% of totex) over five years.	Fail	Fail	Pass	300	Pass	Fail	Fail	Fail	Fail	
B	Ofwat	Cash	ODI underperformance payment (3% RoRE) in one year	Fail	Pass	Pass	100	Pass	Pass	Fail	Pass	Fail	
C	Ofwat	Inflation	Inflation 2% below the base case in the business plan in each year of the price review	Fail	Pass	Pass	N/a	Pass	Pass	Pass	Pass	Fail	
D	Ofwat	Inflation	Deflation of -1% for two years, followed by a return to the long-term inflation target.	Fail	Pass	Pass	N/a	Pass	Pass	Fail	Pass	Fail	
E	Ofwat	Inflation	10% spike in inflation with a 2% increase in wedge between RPI and CPIH, followed by two years at 5% and a 1% increase in wedge.	Pass	Pass	Pass	N/a	Pass	Pass	Fail	Pass	Pass	
F	Ofwat	Cash	Increase in the level of bad debt (20%) over current bad debt levels.	Pass	Pass	Pass	N/a	Pass	Pass	Pass	Pass	Pass	
G	Ofwat	Debt	Debt refinanced as it matures, with new debt financed at 2% above the forward projections.	Fail	Fail	Pass	100	Pass	Pass	Fail	Pass	Fail	
H	Ofwat	Cash	Financial penalty – equivalent to 6% of one year of Appointee turnover	Fail	Pass	Pass	N/a	Pass	Pass	Fail	Pass	Fail	
I	NWL	Cash	20% totex overspend	Fail	Fail	Pass	600	Fail	Fail	Fail	Fail	Fail	
J	NWL	Cash	2% ODI penalty each year	Fail	Fail	Pass	200	Pass	Fail	Fail	Fail	Fail	
K	NWL	Cash	5% totex and 2% ODI penalty	Fail	Fail	Pass	500	Pass	Fail	Fail	Fail	Fail	