A sustainable and investable regulatory framework for the England and Wales water sector

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Prepared for Water UK

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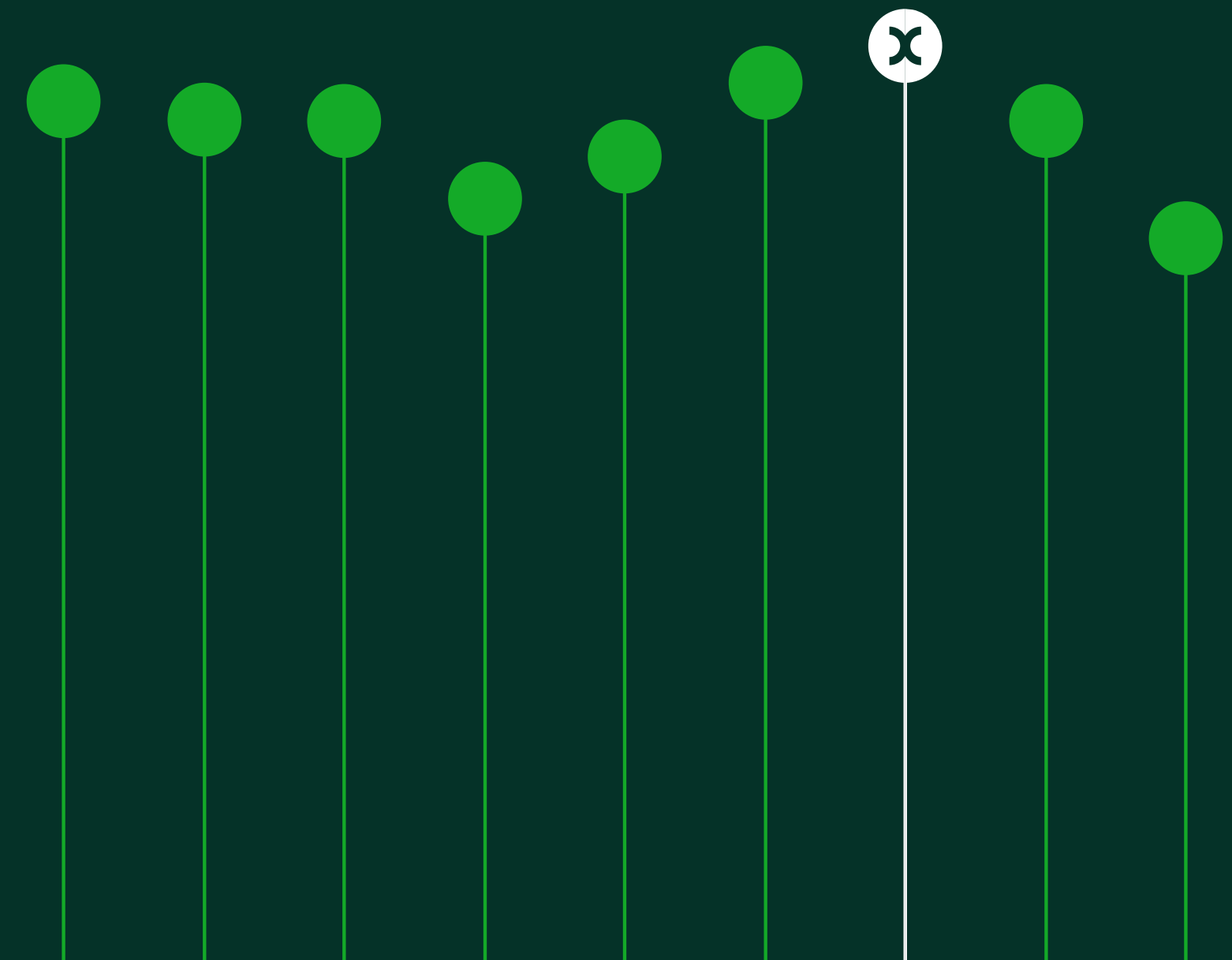

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Executive summary

This report studies the investability challenge faced by the England and Wales water sector. We expand on the findings of our previous study for Water UK ('Investability in PR24'),[1] to identify ways in which the regulatory system can be enhanced to promote sustainable, long-term investment beyond PR24.[2]

The importance of investability today

For the water sector to be investable, it must be highly likely that it can attract and maintain the equity capital needed to deliver desired investment. The need for the water sector to be attractive to equity is implicitly recognised within Ofwat's financing duty. However, the importance of investability as a distinct concept has become more pressing in recent years.

The risk profile of the water sector has fundamentally changed. Uncertainties over business risk and the regulatory environment of the sector have materially increased the level of risk faced by companies, investors, and customers. This is reflected in the following.

- **Increasing obligations on companies**, with the sector needing to deliver considerably larger and more complex enhancement programmes.
- **Greater uncertainty and lack of stability** in the regulatory regime, and reduced predictability of returns.[3]
- **Higher cost of complying** with regulatory objectives.[4]

[1] Oxera (2024), 'Investability at PR24', August.
[2] While Ofwat acknowledged our previous report in its final determinations, it did not offer a specific response on the details of the report. See Ofwat (2024), 'PR24 final determinations: Aligning risk and return', 19 December, p. 10.
[3] Reflected in the rating score for Ofwat's regulatory stability and predictability (a key component of company credit ratings, being downgraded from AAA to A over the consecutive price reviews of PR19 and PR24).
[4] For example, regulatory targets around climate adaptation, water supply security and growth, water quality, and other environmental objectives. For example in DEFRA's Integrated plan for delivering clean and plentiful water (also referred to as the 'Plan for water') from April 2023, there is a new legal requirement on water companies to upgrade wastewater treatment works to their highest nutrient removal level in designated areas where protected habitat sites are in an unfavourable condition. This is coupled with other programmes such as the Storm Overflows discharge reduction plan which requires water companies to deliver an expected £56bn of capital investment over 25 years. It is also becoming more costly to remove microplastics from water sources to meet the required targets. Newson, N. (2024), UK Parliament, 'River pollution and the regulation of private water companies', accessed 17 April 2025.

- **Greater risk that shareholders are required to fund asset health deficits** where the regulatory regime does not provide sufficient cost recovery.
- **The persistent asymmetry in the incentives regime**, with 16 of 17 companies reporting negative operational returns on regulatory equity over the first four years of Asset Management Period 7 (AMP7).

These risks present a new challenge for the sector, in ensuring it is continuously able to present a compelling proposition to investors.

Underpinning this challenge is the significant step-up in investment that is required. **Company forecasts indicate that the industry regulatory capital value will roughly treble in size over the next 25 years**: enhancement investment alone is anticipated to be c. £276bn from AMP8 (which runs from April 2025 to March 2030) through to AMP12 (which runs from April 2045 to March 2050). The scale of this investment programme, relative to the past, will require greater regulatory attention to investability, and to market evidence on investor appetite, taking these into account in regulatory design and decision making.

Our research shows that **in order to finance the core investment pathways set out in companies' long-term delivery strategies, investors would need to contribute additional capital—while forgoing all dividends—for over a decade.** [5] In other words, investors would face net negative cash flows for over two AMPs. Coupled with the heightened risk environment, investors may consequently demand higher returns, or simply choose not to invest.

The cost of regulatory inaction

It is critical that the regulatory environment is conducive to attracting unprecedented amounts of equity investment. Ofwat's PR24 approach insufficiently considered the changing long-term investment proposition. In particular, while Ofwat noted the term 'investability' in its PR24 documentation, it did not develop a robust framework for assessing the

[5] Each company was required to submit a long-term delivery strategy as part of their respective business plans in the PR24 price control process set out by Ofwat. The long-term delivery strategy describes the enhancement expenditure companies anticipate will be required over the coming 25 years. These strategies also outline the long-term outcomes the company aims to deliver, and how they will deliver them in a range of plausible futures.

long-term investability of the sector.[6] As a result, there is a lack of transparency within the price review over the scale of these long-term challenges, and a lack of understanding—or at least acknowledgement—of the potential costs of a failure to act.

Investability is crucial for customers. If companies are unable to secure the capital needed to finance long-term infrastructure programmes based on Ofwat's cost of capital allowance, planned or required investments may be delayed, scaled back, or not delivered at all.[7] This could lead to deteriorating service quality, reduced resilience, and increased costs as companies face the need for more expensive catch-up investments and service disruptions. Over time this can translate into more frequent service failures, environmental breaches, or costly emergency interventions that ultimately impact customers. This key risk was highlighted by the Competition and Markets Authority (CMA) in its PR19 redetermination.[8]

In the longer run, this could cause significant harm to the growth prospects of the sector. Our illustrative analysis shows that **if the sector fails to attract fresh equity, and even with no dividends paid to investors, there would be a shortfall of c. £152bn in investment across the sector by 2050.** This equates to over half of the expected spending (as anticipated by company long-term delivery strategies) over the next 25 years, and reflects the significantly diminished capacity of the sector to finance capital programmes from internal funds, even without paying dividends.

In addition to foregone investment, the lack of an investable, long-run framework for economic regulation could have direct costs for customers through a higher cost of capital. For example, credit ratings agencies have recently downgraded Ofwat's regulatory stability and predictability score, reflecting the uncertainty around future returns and the reduced levels of regulatory stability.[9] Our illustrative analysis

[6] It stated that: 'Investability. At any price review, it's vital that companies can access debt and equity markets, but more so at PR24 than perhaps any previous price review. And so we have given careful thought and changed our approach to setting the balance of risk and return.' Ofwat (2024), 'PR24 Draft Determinations: City briefing—transcript', July, p. 4.
[7] Competition and Markets Authority (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Final report', para. 9.1275.
[8] Competition and Markets Authority (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Final report', para. 9.1273.
[9] In November 2024, Moody's downgraded Ofwat's regulatory stability and predictability score from AA to A. This is a key component of company credit ratings, and as a result, companies were subsequently downgraded. See Moody's (2024), 'Reduced predictability of regulatory environment pressures credit quality', 18 November, p. 2.

suggests the subsequent downgrades to company credit ratings will lead to increases to the cost of capital and consumer bills: specifically, **using PR24 regulatory parameters as an illustration, we show that the impact of a credit rating downgrade on the cost of capital could be equivalent to a £14-27 increase in average household bills in the long-run**.

Alignment to the Call for Evidence (CfE)

These factors have culminated in a decline in investor sentiment towards the water sector, as has been noted in Ofwat's PR24 final determinations and the CfE published by the Independent Water Commission ('the Commission'). Specifically, the CfE outlines the following factors that stakeholders have indicated are driving weaker investor sentiment.[10]

- **The decline in the regulated return on equity** could result in the water sector becoming increasingly unattractive to investors, ultimately failing to facilitate the necessary investment.[11]
- **A change in the risk profile of the sector**, such that the water sector is no longer a low-risk investment.[12] In return, investors would demand higher returns, driving bills higher.
- **Changing public perceptions**, including negative political rhetoric which harms the attractiveness of the sector.[13]

Addressing these issues requires the development of a clearer, forward-looking regulatory approach that can ensure the investability of the water sector. The observations and evidence presented in this report are directly connected to the investability challenges outlined above, and we consider these will provide a critical input into the Commission's analysis and ultimate recommendations to government.

Principles and key recommendations for an investable regulatory framework

With a view to tackling the long-term investability challenge, we have developed **six principles** that would underpin an investable regulatory

[10] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 370, p. 142.
[11] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 366, p. 139.
[12] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 81, p. 28.
[13] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 84, p. 29.

framework.[14] These principles are not new in concept, but require a renewed and clearly articulated commitment from the economic regulator to promoting investment that will ultimately be to the benefit of current and future customers.

We recommend a principles-based approach, because there are significant aspects of the regulatory model that might change by PR29—not least as a result of the Commission's recommendations—and these principles are important regardless of the regulatory model. It should ultimately be for the regulator to develop an investability framework under any reformed policy framework, but in a manner which takes account of these principles.

These principles, and the recommendations for achieving each of them, are set out in the table that follows, and fall into three categories.

1 Clear long-term policy and regulatory framing to assess the long-term consumer interest.
2 Well calibrated operational regime with consistent and proportionate risk/return profile.
3 Long-term, forward-looking, and evidence-based assessment of financeability, from equity and debt perspectives.

[14] These principles are consistent with the 2024 Investability Report framework, but take into account the longer-term framing of the Commission's CfE, in contrast to responding to proposals for a specific price control period.

	Guiding principles	Recommendations
Clear long-term policy and regulatory framing to assess the long-term consumer interest	*Principle 1:* Firm commitment to promoting investment and securing investability, through aligned policy and regulatory signalling.	• We recommend that government recognises the investability challenge through amendment of Ofwat's statutory duties (e.g. a streamlined set of duties, with investability as a central component of the finance duty) and by providing guidance on how Ofwat should prioritise investment within the strategic policy statement. • The government should consider setting firm and measurable regulatory requirements around promoting investment through periodic strategic policy statement updates. For example, Ofwat could be required to set out a pathway to re-securing its previous AAA/Aaa score for regulatory stability and predictability. • Ofwat should create an explicit investability framework, articulating how investability will be applied in practice, to provide sufficient certainty to companies and their investors to allow long-term planning and capital commitment. This should include clearer definition over the current and future use of financial levers to balance between various goals, to seek to provide greater certainty for investors.

Well calibrated operational regime with consistent and proportionate risk/return profile	*Principle 2:* A well calibrated risk-reward profile for a sector undergoing a significant long-term enhancement programme.	• Companies must be provided with a balanced risk package with an appropriate level of regulatory risk exposure reflecting the investment requirements of the sector. This must provide investors with a 'fair bet'. Potential options include the following.
		  • Reducing exposure to service performance and cost risk via adjustments to cost sharing rates (to reflect the higher uncertainty around cost estimates) and outcome delivery incentive rates, in order to better align risk exposure to the allowed cost of capital.
		  • Moderating the level of return at risk to ensure that it is proportionate to the equity returns on offer and the maximum loss which companies can incur is smaller than the base equity return provided by Ofwat's cost of capital allowance. This could be achieved via adjustments to the existing aggregate sharing mechanisms (or the introduction of a new mechanism).
		  • Providing greater protection for companies against service performance risks and changes in circumstances, which lie outside of their control.

Guiding principles	Recommendations
Principle 3: A long-term approach to expenditure and performance, including assessment of long-term infrastructure resilience needs.	• The price review framework should take greater account of long-term requirements of the sector (in terms of future infrastructure needs, consumer needs, and environmental needs), price paths, and performance trajectories, rather than focusing solely on distinct five-year price controls. This should aim to provide greater transparency over long-term trade-offs and challenges. • This should include longer-term modelling of expenditure requirements (e.g. through greater use of long-term delivery strategy submissions) and financeability, and a long-term approach to asset health funding. Ofwat should also consider multi-AMP glide paths for key performance targets and multi-AMP cost allowances, where beneficial. • A new framework is needed to give companies and investors confidence that efficient increases in asset maintenance investment will be funded in future control periods, including enhanced regulatory measurement of asset health. Ofwat should consider removing capital maintenance from the base cost models. • Investors require confidence in their exposure to historical asset deficits and should not be required to fund shortfalls that are the result of historical regulatory decisions.
Principle 4: Fair and competitive sector returns.	• Allowed returns should be assessed in a more robust manner, considering a more comprehensive range of evidence to estimate required market returns and ensure these are globally competitive, reflecting current market conditions. This includes non-mechanistic reliance on the capital asset price model (CAPM), at a minimum by consistently performing a full suite of cross-checks based on market evidence. • Components of the allowed return which are directly observable could be indexed to reduce the impact of deviations due to market movements outside of the sector's control.

	Guiding principles	Recommendations
Long-term, forward-looking, and evidence-based assessment of financeability from equity and debt perspectives	*Principle 5:* Actual investor preferences accounted for, rather than considering investors in the abstract.	• Notional company assumptions should be set with respect to investor requirements and be achievable, reflecting real-world scenarios. • There should be clear requirements to provide clarity around the long-term dividend policy for the sector and required earnings and cashflow profiles, setting this based on timely and up-to-date market evidence and on a forward-looking basis.
	Principle 6: Meaningful long-term assessment of financeability from equity and debt investor perspectives.	• Ofwat's approach to assessing financeability, which currently is largely debt-focused for a single AMP, needs to be revised to incorporate a longer-term approach, looking at credit profiles over multiple AMPs, and integrated with investability, so any assumptions around changes to equity levels are realistic. • In particular, we recommend that long-term delivery strategy forecasts are taken into account in each price review, particularly when considering the use of 'equity solutions' and the setting of notional gearing and dividends.

1 Introduction

In October 2024, the UK and Welsh governments announced an Independent Water Commission ('the Commission') into the water sector and its regulation, chaired by Sir Jon Cunliffe. The Commission will make recommendations to the government on ways of improving water sector regulation. To do so, it published a Call for Evidence (CfE) which discusses potential issues with the current regulatory system and institutional arrangements.[15]

1.1 Purpose of this report

Water UK has commissioned Oxera to prepare a response to the CfE, focused on the investability of the regulatory framework. We set out evidence on the investability challenge, assess the causes of worsening investor sentiment, and outline a set of guiding principles and recommendations for how the system could better attract and retain equity.

1.2 The Commission's Call for Evidence

The CfE highlights the importance of large scale investment in the water sector due to the changing climate landscape, changing regulatory mandates, and the need for forward and long-term planning (rather than a 'fix on fail' approach to water infrastructure).[16]

The CfE outlines stakeholder views that the water sector has become increasingly unattractive to investors and identifies several possible factors behind this. We note that there is a high degree of overlap between the factors identified by the Commission and the issues raised in our 2024 Investability Report. Specifically, the CfE refers to the following.[17]

- The decline in the regulated return on equity (RoRE) in comparison to other regulated sectors may indicate that the

[15] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, https://consult.defra.gov.uk/independent-water-commission/independent-commission-on-the-water-sector-regulat/supporting_documents/Call%20For%20Evidence%20%20Independent%20Commission%20on%20the%20Water%20Sector%20Regulatory%20System.pdf.
[16] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 67, p. 26.
[17] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 370, p. 142.

water sector is not as competitive from an investor perspective.[18]

- The risk profile of the water sector has changed—investors have indicated to the Commission that it is no longer seen as a low-risk investment. Investors are demanding higher returns in exchange for the regulatory uncertainty which has led to riskier investments. These higher returns have not been realised yet.[19]
- Challenges in attracting long-term stable investors.
- A change in public perceptions about investor returns, including negative political rhetoric which harms the attractiveness of the sector.[20]

We detail these in the Appendix. In the body of this report, we also consider these four key points relative to the current environment faced by the water sector.

1.3 Structure of the report

This report is structured as follows.

- Section 2 details the investability challenge faced by the sector.
- Section 3 includes analysis of the impact of failing to ensure investability.
- Section 4 sets out our proposed guiding principles and recommended solutions towards establishing an investable framework.
- Section 5 concludes.

[18] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 366, p. 139.
[19] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 81, p. 28.
[20] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 84, p. 29.

2 The investability challenge facing the England and Wales water sector

The England and Wales water sector has faced increasing pressures over recent years, including adapting to the effects of climate change, balancing long-term investment needs against short-term affordability concerns, addressing company performance (particularly in terms of environmental outcomes), and an increased government focus on the link between regulation and growth.

Navigating these challenges means the sector faces difficult trade-offs. The economic regulator has been tasked with balancing competing objectives, in particular the need for services to be delivered at efficient costs and for investor compensation to be no higher than necessary.

As highlighted by the CfE, **there is evidence of a growing investability challenge facing the sector**. In this section we demonstrate the scale of the investability challenge, and explain why action is needed to promote investment for the benefit of customers and the environment.

We show that:

- Equity plays a critical role in the financing of infrastructure investment, and provides a risk buffer in the event of shocks.
- For the water sector to be investable, it must be highly likely that it can attract and maintain the equity capital needed to deliver desired investment.[21]
- Increased investment demand and the need for unprecedented amounts of new equity mean a clear understanding of investability is critical. Based on the 'core investment pathways' forecast by companies in their long-term delivery strategies (LTDS), the England and Wales water sector asset base is expected to approximately treble over the next 25 years.
- The risk profile of the sector and the proposition for investors has changed, with some companies facing the prospect of no cash returns to investors for more than a decade under realistic scenarios.
- Investors need greater certainty over how this will be addressed in the long run. A lack of transparency regarding Ofwat's

[21] Oxera (2024), 'Investability in PR24', 27 August, .

approach to managing these issues at PR24 underlines the wider lack of predictability within the regulatory regime.

Against this backdrop, **the decisions made now will have far-reaching impacts on outcomes for customers and the environment in the years to come.**

2.1 The role of equity

Private finance plays a critical role in the England and Wales water sector. As explained by Ofwat, *'as the money to meet [investment] costs is collected over time, water companies need to raise the finance to pay for the investment upfront. This finance comes from investors in the form of debt and equity. Debt and equity therefore have a critical role in funding the investment that is needed to provide customers with resilient water supply and sewage services and environmental improvements.'*[22]

As recognised by Ofwat, both debt and equity finance play a critical role in the delivery of infrastructure investment. While debt can provide an efficient form of financing, equity capital is also necessary to ensure that a company is resilient to adverse shocks.

Equity therefore acts as an important route for companies to finance large-scale infrastructure expenditure in the water sector. Yet **the role of equity—and the need for equity returns—is often misunderstood or misrepresented in public discourse**.[23]

Box 2.1 below summarises the key roles of equity in financing water sector investment.

[22] Ofwat (2025), 'Returns and dividends', accessed 23 April 2025.
[23] We note that the CfE includes several important clarifications—for example on the level of equity returns and dividends paid to shareholders. See Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, Box 12.

Box 2.1 Roles of equity

A 2003 report addressed to Ofwat and Defra identified five key roles.

1 Risk-absorption
Provides a cushion in balance sheets that can protect creditors from financial shocks or underperformance. If a company takes on debt, they are obliged to meet the interest payments. This means that if debt levels rise relative to equity levels, the risk of defaulting also rises. In the case of equity, if there are downturn events that affect revenue and available cash, equity can provide capital that allows companies to continue paying debt, since equity returns to investors are proportionate to the revenue earned by the company.

2 Discretionary service costs
Dividends can be reduced or withheld by management if financial circumstances require this.

3 Non-maturity
Share capital does not need to be repaid at a specified date.

4 Incentives
Corporate incentives targeted at value-maximising shareholders can put pressure on managers to maximise profits beyond the opportunity cost of capital. This creates customer benefits through the delivery of efficiencies and outcomes.

5 Corporate governance
Shareholders provide governance of the company through their control over boards and management.

Source: Smith, J. and Hannan, D. (2003) 'Structure of the water industry in England: Does it remain fit for purpose?', report for Defra and Ofwat, November.

Equity capital underpins companies' ability to take on risk, absorb shocks, and unlock long-term funding needed to deliver essential services. By enabling investment today in return for a share of future returns, equity investors support the delivery of outcomes that

ultimately benefit consumers—through improved resilience, service quality, and environmental performance.

Equity buffers also play a key role in determining a company's credit rating. Specifically, higher levels of equity reduce a company's reliance on debt, strengthening its balance sheet and improving key credit metrics. One such metric is the funds from operation (FFO) to net debt ratio, which measures how effectively a company's core cash flows can cover its debt obligations. As equity increases and net debt falls, this ratio improves—signalling greater financial resilience and reduced default risk. This in turn leads to better credit ratings, making the company more attractive to a broader pool of investors and reducing its overall cost of financing.

Since privatisation, one of the core benefits of the RCV-based regulatory model has been its ability to attract substantial private investment into the sector. For the government, the ability to draw on private capital has meant that essential infrastructure investment has proceeded without sole reliance on public funds. This has given government greater fiscal flexibility to direct public spending elsewhere. In this way, **private investment—including in the form of equity—has expanded the state's capacity to deliver wider social priorities and customer outcomes**.

2.2 Definition of investability

In our 2024 Investability Report, we sought to provide a definition of investability that could be used to inform Ofwat's approach to the final determinations. We stated that: 'for a price control to be investable, it must be highly likely that the company can attract and retain the equity capital needed to deliver desired investment'. This meant that the regulator should satisfy itself that companies would be able to raise equity from capital markets, at the quantity required and in line with the assumed terms. Furthermore, we noted that—to meet this definition—the regulatory contract must provide:

- confidence that investors are able to recover their capital, plus a fair return, over the lifetime of the investment;
- a profile of expected returns on equity that investors are willing to accept.[24]

[24] Oxera (2024), 'Investability at PR24', August, p. 6.

This aligns to the definition used by the GB energy regulator Ofgem in its RIIO-3 methodology.[25]

2.3 Why a focus on investability is needed

2.3.1 Investment requirements are growing

The water sector faces a growing investability challenge. Water companies are on the cusp of significant growth in spending over multiple asset management periods (AMPs), and financing this step-change will require significant new equity capital.

Based on the long-term delivery strategies prepared during PR24, companies are forecasting that they will spend significantly more in the future than they have in the past. Sector-wide total expenditure (TOTEX) over the two decades before privatisation had averaged around £6bn per year (split roughly—one third capital expenditure and two thirds operating expenditure).[26] Following privatisation, TOTEX increased to around £11bn per year on average, with levels of expenditure remaining roughly constant across control periods.

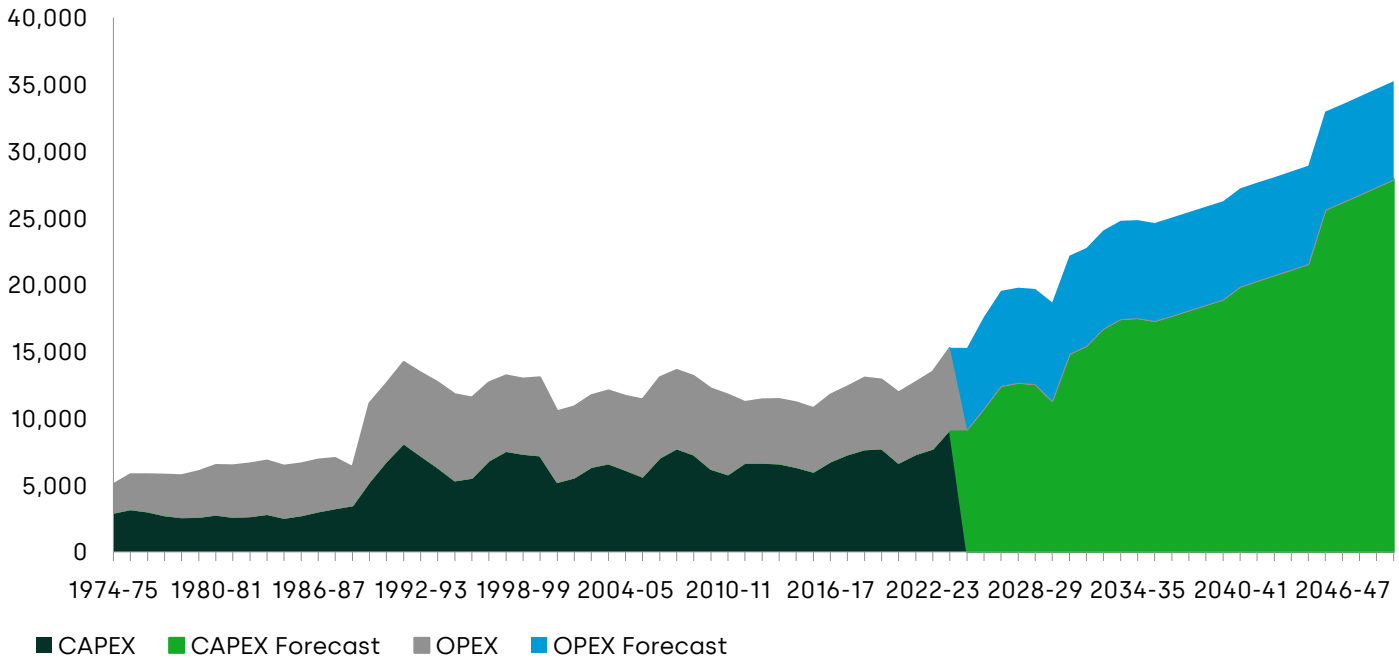
However, drawing from companies' LTDS submissions, **around £276bn of enhancement investment alone is anticipated from AMP8 through to AMP12.**[27] This is due in part to an increasing number of environmental requirements that must be met, coupled with ageing infrastructure and increased demands on the water and wastewater networks. Figure 2.1 below illustrates the scale of forecast investment for the 11 water and sewerage companies (WaSCs).

[25] 'While there may be no explicit in-year cash costs that would threaten equity financeability, investability considers whether the allowed return on equity is sufficient to retain and attract the equity capital that the sector requires. […] [T]his issue is likely to be increasingly important in the coming years as the need to invest in infrastructure rises significantly (for energy networks across the UK and globally) and companies are required to seek "fresh" equity from their investors over and above what they would be able to fund via retained earnings.' Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – Finance Annex', 18 July, p. 100

[26] Assuming a 2020 price base.

[27] Based on values submitted in companies' LTDS sections of the data tables provided alongside their October 2023 business plans.

Figure 2.1 WaSC historical and projected spend (£m, real 2023–24 prices)



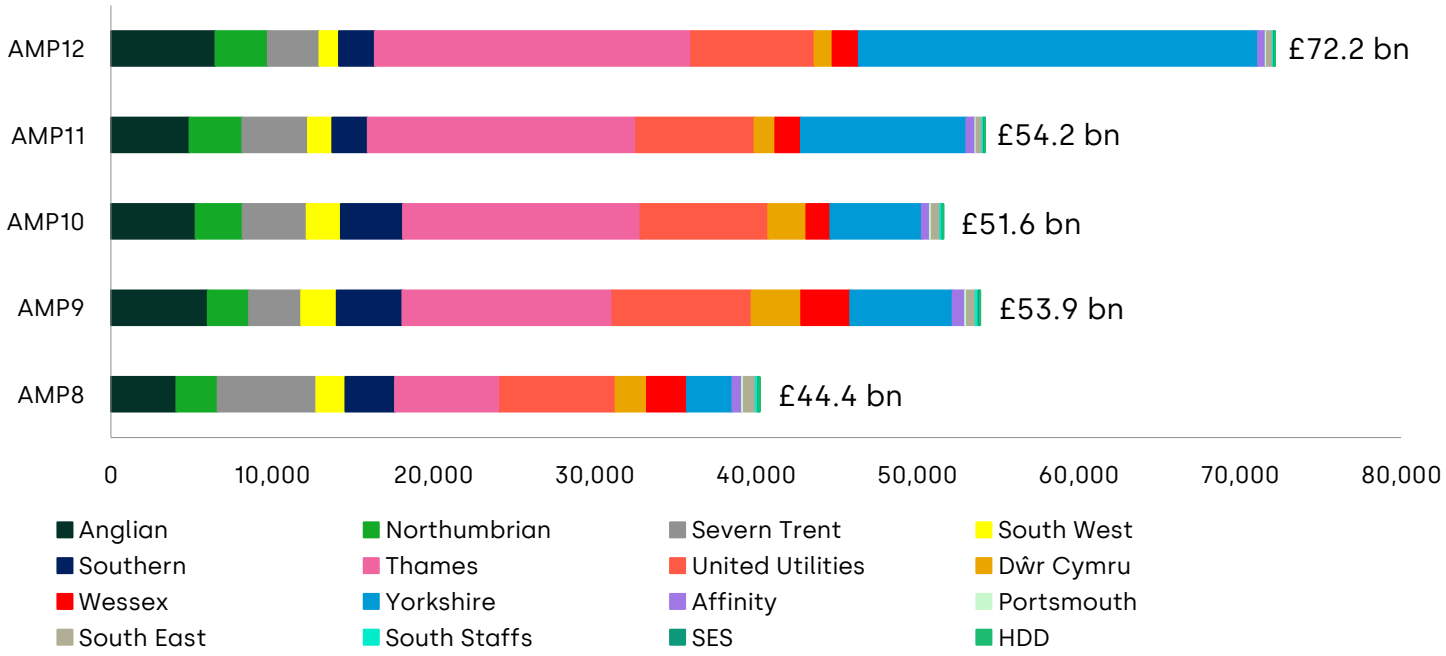
Note: Expenditure forecast based on PR24 final determinations for AMP8 and LTDS forecast enhancement expenditure for the following periods. For AMP9 onwards, maintenance capital expenditure (CAPEX) is assumed equal to the RCV run-off rate. OPEX forecast is based on the Price Control Financial Models up to 2030, and is then assumed to remain constant thereafter.
Source: Oxera analysis.

Crucially, this significant increase in investments is not confined to the current AMP8 control period (i.e. 2025–30). Indeed, AMP8 as a control period is anticipated to be the 'smallest' AMP in terms of spend through to AMP12 (in both real and nominal terms). This is further illustrated in Figure 2.2 below.

In other words, the water sector expects to deliver an enhancement programme approximately three times the size of its current regulatory capital value (RCV) over the next 25 years, at the fastest rate since privatisation. Supporting this investment will require unprecedented levels of new equity capital—in AMP8 alone, fresh equity injections for the notional company modelled by Ofwat represent over a quarter of the sector's current regulated equity.[28]

[28] On a notional basis. The proportion would be higher on an actual company basis..

Figure 2.2 LTDS projected spend (£m, real 2022–23 prices)

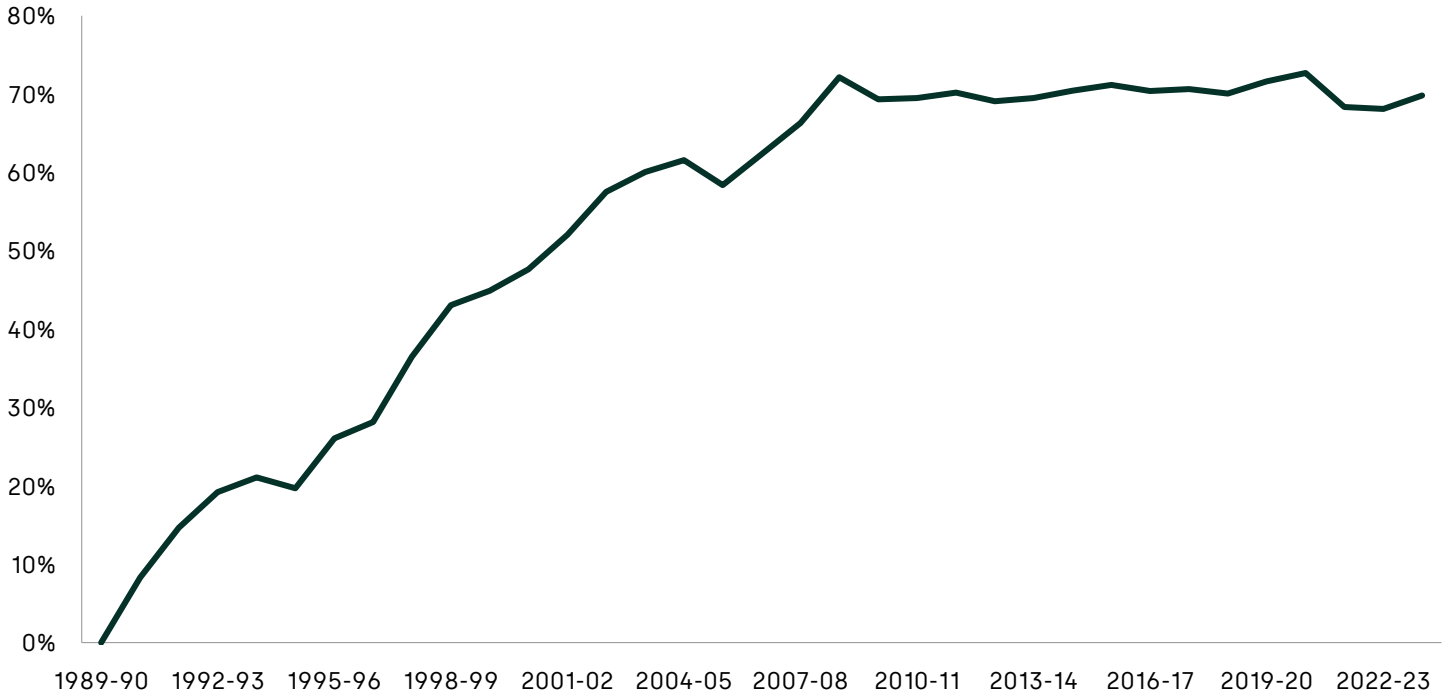


Source: Oxera analysis using PR24 Business Plans.
Note: LTDS data drawn from Business Plans. The AMP8 figure has been updated for the PR24 final determinations allowance value.

This need for new investment cannot and should not be wholly financed by debt. Since privatisation, the water sector has predominantly raised debt to finance new investment, as reflected in the sector's actual gearing ratio (shown in Figure 2.3 below). Although debt can be a prudent and efficient method of raising finance for investment, high debt levels can leave companies more financially exposed, as companies must meet interest payments on debt. As debt levels rise relative to equity, i.e. gearing increases (all else equal), the risk of defaulting on debt increases.[29] As a result—given the need to ensure financial resilience—there is no substitute for the equity financing needed to deliver infrastructure improvements.[30]

[29] This is recognised in the CfE. Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 326.
[30] Excessive amounts of debt can also leave a company exposed to the risk of under-investment because investment returns must be used first to service debt (i.e. the debt overhang problem).

Figure 2.3 WaSC actual gearing, 1990–2023



Note: The gearing shown is drawn from WaSCs only.
Source: Oxera analysis.

The key to ensuring this equity investment is the ability to attract investors. Potential investors have a range of options as to where and how to deploy their capital, and the England and Wales water sector will need to compete with other investment opportunities globally, including sectors perceived to offer greater returns adjusted for risk.

For the water sector to compete successfully, it must provide an attractive investment proposition backed by a supportive regulatory environment, particularly one that is stable across price controls. Specifically, for equity to be forthcoming, it must be assured that:

- the allowed return on equity is set at a level that is competitive with the equity returns available in sectors with comparable risk;
- key price control parameters (e.g. TOTEX allowances) enable cost recovery, and incentive mechanisms are balanced, such

that investors face a 'fair bet' in relation to any potential regulatory out- or under-performance.[31]

2.3.2 The risk profile for the sector is changing

As noted above, company decisions around capital structure have led to some companies being highly levered, which reduces the equity buffer available to absorb risks and fund shortfalls in required expenditure, and impacts balance sheet capacity for new investment.

However, the change in the sector risk profile is not simply a gearing issue. There have been fundamental changes in the business and regulatory risk of the sector, including the following.

- Increasing obligations of the sector, with companies needing to deliver considerably larger and more complex enhancement programmes.
- The scale of intervention and the cost to comply with these objectives (e.g. climate adaptation, water supply and growth, water quality, and broader environmental objectives) is subject to high levels of uncertainty.
- Resilience challenges and risk of past under-investment (e.g. on asset health), which increases (perceived) asset risk and may have shareholder funding implications for the future if the regulatory regime does not allow for the recovery of costs associated with addressing the issues.
- The asymmetry of the incentives regime, with 16 of 17 companies reporting negative operational RoRE over the first four years of AMP7.
- Lack of stability of the regulatory regime and predictability of returns.

These challenges require a more complete assessment of financeability and investability in order to ensure that the sector is able to meet current and future hurdles.

[31] In the context of regulation, the concept of a 'fair bet' relates to the idea that regulators should aim to set regulatory parameters at a level which ensures that there is an equal likelihood of an efficient firm outperforming as there is of it underperforming, such that—on average—the firm would be expected to earn a return that is in line with its cost of equity. See, for example, Competition and Markets Authority (2017), 'SONI Limited v Northern Ireland Authority for Utility Regulation', November, p. 197, para. 7.237; Civil Aviation Authority (2023), 'Economic regulation of Heathrow Airport Limited: H7 Final Decision, Section 3: Financial issues and implementation', CAP2524D, March, p. 60, para. 11.3; Competition and Markets Authority (2023), 'H7 Heathrow Airport Licence Modification Appeals: final determinations', 17 October, p. 259, para. 7.163.

2.3.3 The investment proposition has changed

AMP8 is the start of a multi-AMP step-change in the level of investment. This acceleration in spending and the associated need for equity capital is at a scale and pace that has never been tested under Ofwat's regulatory regime.

The risks to consumers of under-investment are material if investability is insufficiently addressed. We show below that the sector is unable to finance its required investments without large quantities of equity being raised over multiple-AMPs.

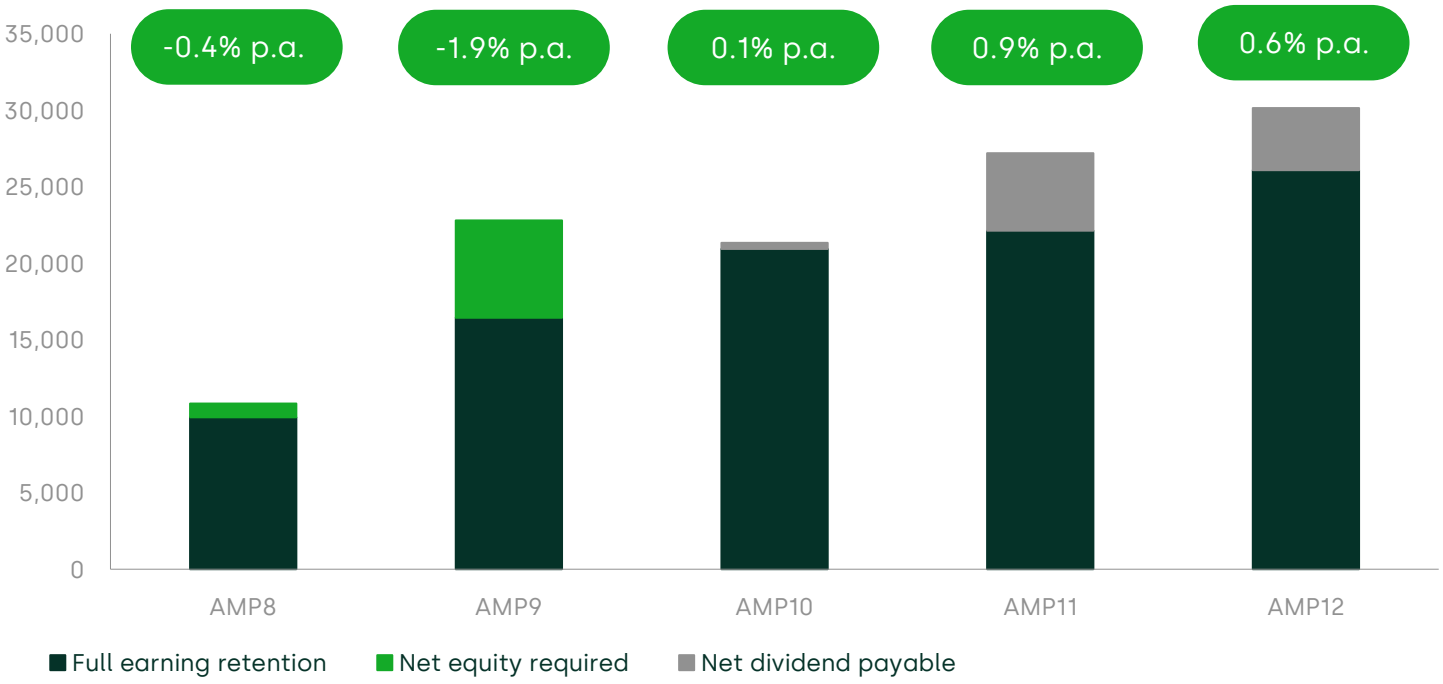
Significant new equity is required even if companies were to pay no dividends—that is, even if companies were to use the maximum equity available from retained earnings, before raising new external capital. This shows that the minimum possible amount of equity required remains high. We note this scenario is intended to be illustrative, as companies need to be able to pay dividends in order to attract new equity.[32] As a result, the required levels of new equity will be greater under more realistic dividend assumptions.

Drawing on the PR24 final determinations and data from companies' LTDS documents, we use Ofwat's allowed cost of equity of 5.1% (CPIH-real) to estimate the returns generated by the sector through to AMP12. We then derive the required debt and equity capital needed to finance the sector's CAPEX programme, while maintaining notional gearing at 55%.

Figure 2.4 below shows that in the extreme scenario in which no dividends are paid and all base returns are fully retained to finance new investment, further equity injections would be required for the notional companies across both AMP8 and AMP9. This implies that in order to finance the LTDS investment pathways, investors would be expected to contribute additional capital—on top of forgoing all dividends—for over a decade. In other words, investors would face net negative cash flows over two AMPs.

[32] This is discussed at length in section 4 of our 2024 Investability Report, as well as in section 4.5 of this report. See Oxera (2024), 'Investability at PR24', August, section 4.

Figure 2.4 Sector equity profile and implied net dividend, no de-gearing (£m real, 2022–23 prices)

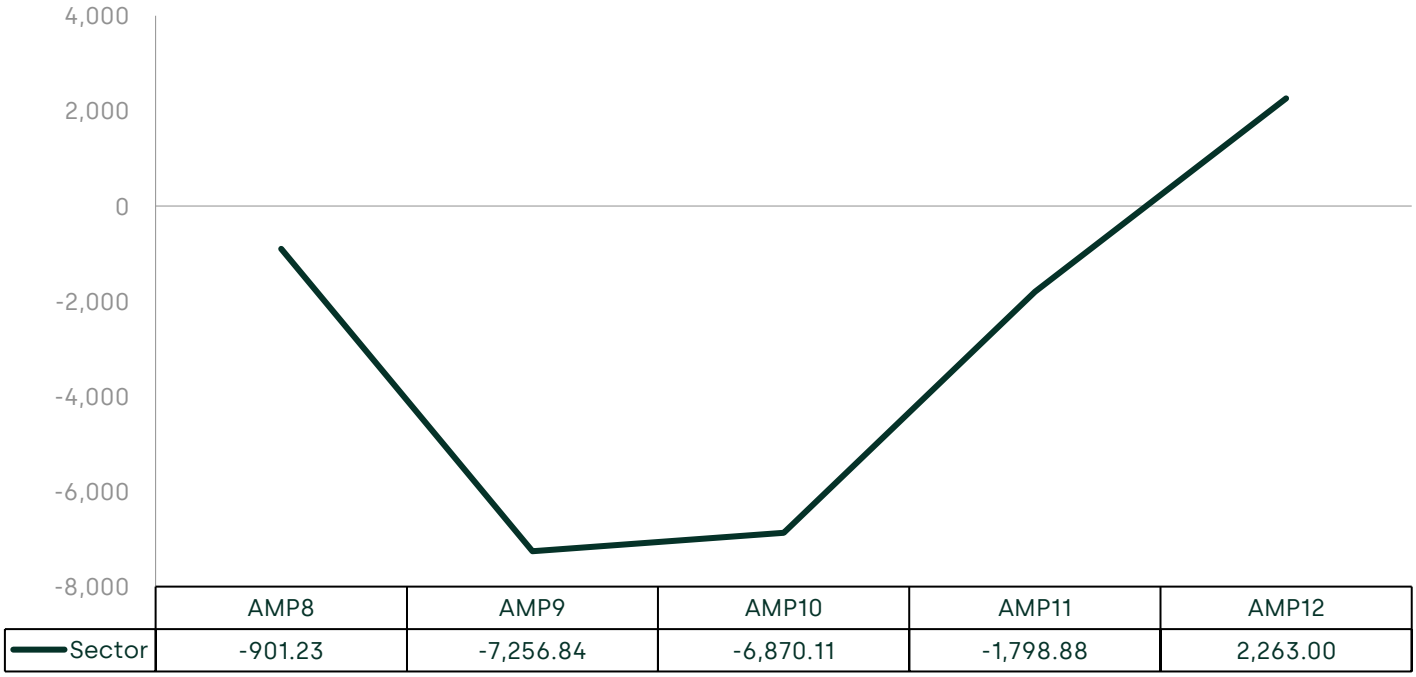


Note: Callouts show the average implied net dividend on a per annum basis, for each year of the respective AMP. Sector refers to WaSCs only. We assume no de-gearing of the notional company in this specification.
Source: Oxera analysis.

In this scenario, it is only from AMP10 that the water sector would be in a position to pay dividends, after accounting for equity required to maintain notional gearing and to finance enhancement programmes. However, this 'excess' equity equates to a net dividend yield of only 0.1% p.a., averaged over AMP10. While this increases to 0.9% and 0.6% p.a. in each of AMP11 and AMP12 respectively, the level of implied net dividends shows that the investment proposition has shifted to a materially longer and more uncertain payback period.

On a cumulative basis, investors in the sector would only achieve a net positive cash flow position (or positive net implied dividends) from partway through AMP11—over 15 years after their initial investment in AMP8 (see Figure 2.5).

Figure 2.5 Cumulative net dividends, no de-gearing (£m real, 2022–23 prices)



	AMP8	AMP9	AMP10	AMP11	AMP12
Sector	-901.23	-7,256.84	-6,870.11	-1,798.88	2,263.00

Note: Sector refers to WaSCs only. We assume no de-gearing of the notional company in this specification.
Source: Oxera analysis.

This change to 'negative net cash flow to equity' fundamentally changes the investment proposition of the water sector. As highlighted in our 2024 Investability Report, **a steady and predictable stream of dividends is a key requirement of investors in utilities sectors, including in periods when new equity is being raised.** Where this is unavailable, there are two possible outcomes: (i) the demanded return on capital will increase, and/or (ii) investments will not be delivered.

Overall, faced with the investment proposition signalled by Ofwat through the PR24 final determinations, investors in England and Wales water are unlikely to be confident in recovering their investment at a fair rate of return through a confidently predictable future dividend profile within a reasonable period. This could impact the sector's ability to raise equity to finance its investment programmes, and ultimately diminish its ability to deliver for customers and the environment.

2.4 Ofwat's approach to investability at PR24 has been insufficient

Our 2024 Investability Report focused on the investability of Ofwat's draft determinations and potential short-term solutions that could be applied within the final determinations. We noted that, while Ofwat had

referred to the importance of 'investability' in its PR24 documentation,[33] its regulatory framework did not contain an explicit definition of investability that would allow for the systematic assessment of potential risks to attracting equity.

We recommended that Ofwat introduce a clear framework for investability, along with a review of its existing approach to assessing risk around new capital. Specifically, we noted that to ensure it is meeting its financing duty, Ofwat needs to explicitly consider investability, which deals with broader questions and time horizons than a traditional five-year debt financeability assessment.

We proposed five key questions to assess whether the PR24 draft determinations were investable, as shown in Box 2.2.

Box 2.2 Our five questions for assessing the investability of the draft determinations

- Are Ofwat's assumptions around how equity financing is delivered realistic, including assumed dividend reductions and/or equity injections?
- Is the base return set at an appropriate level such that the marginal investor is incentivised to commit equity capital?
- Does the calibration of the regulatory settlement provide a 'fair bet' for investors, with a symmetrical distribution of returns, such that the expected return equals the allowed return?
- Is the overall risk exposure reasonable?
- What is the equity being used to finance/fund (e.g. creation of assets versus bill subsidies for current consumers)?

Source: Oxera (2024), 'Investability at PR24', August.

[33] 'Investability. At any price review, it's vital that companies can access debt and equity markets, but more so at PR24 than perhaps any previous price review. And so we have given careful thought and changed our approach to setting the balance of risk and return.' Ofwat (2024), 'PR24 Draft Determinations: City briefing—transcript', July, p. 4.

Ofwat's PR24 final determinations—and the run up to it—did not provide a conducive environment for raising equity capital, nor did it signal clearly that Ofwat would ensure the long-term investability of the sector. While Ofwat made significant changes between its draft and final determinations in areas that we highlighted (e.g. on the calibration of performance commitment levels and outcome delivery incentives, and assumptions around dividend yield within its financeability assessment), it did not establish an explicit investability framework in the final determinations.

In its PR24 final determinations, Ofwat acknowledged increased risks due to the capital intensity of the AMP8 investment programme. Consequently, Ofwat opted to 'aim up' when setting the allowed return on equity, doing so by 0.27% over the midpoint of its Capital Asset Pricing Model (CAPM)-implied cost of equity range.

However, while this partially signals Ofwat's recognition of the challenges faced by the sector and the changing risk profile going into AMP8, this is unlikely to represent a sufficient long-term fix to the investability challenge facing the sector. Six companies announced their intention to appeal the final determinations, representing approximately half of sector RCV, with investability a significant issue in the submitted Statements of Case.[34]

2.5 Key messages

In this section, we have shown the below.

- Future investment requirements for the water sector have increased significantly relative to historical levels.
- Financing this new RCV growth will require large quantities of new debt and equity.
- Illustrative modelling based on the core pathways within companies' LTDS documents shows that, at the sector level (and assuming 55% gearing), there would be no cash returns over 15 years across the industry. **This represents a different investment proposition for a sector that has historically paid relatively stable dividends.**

[34] See, for example, Anglian Water (2025), 'PR24 CMA Redetermination: Statement of Case', 21 March, chapter H.1, pp. 165–187.

- Some companies are more affected by this than others, depending on the scale of RCV growth that is envisaged.

- **The lack of transparency on this problem within Ofwat's regulatory approach at PR24 underlines the wider lack of predictability within the regulatory regime.** Investors considering investing in long-lived assets need greater certainty over investment recovery and payback periods.

3 Potential impact on consumer outcomes from a failure to ensure investability

As shown in section 2, the England and Wales water sector faces a significant investability challenge. A new regulatory approach is therefore needed to ensure these issues do not persist. Before exploring the regulatory changes that are needed to address this investability challenge, we first assess the potential negative consequences for consumers if these challenges are not addressed.

The main impact on consumers would arise in the form of reduced investment. Specifically, if companies are unable to secure capital needed to finance long-term infrastructure programmes at the cost of capital allowed by the regulator, there is a risk that planned or required investment will be delayed, scaled back, or not delivered at all. This could lead to deteriorating service quality, reduced resilience, and higher future costs.

The consequences of under-investment would be significant. Over time, deteriorating infrastructure and missed opportunities for resilience investment will create higher longer-term costs for consumers, as companies face the need for more expensive catch-up investments and service disruption.

Secondly, failing to address the investability challenge risks increasing long-term bills via a higher cost of capital. Ineffective or unpredictable regulation increases perceived risk for investors. This, in turn, raises the return required to attract equity and debt capital to the sector. Investors operate in a competitive global capital market and have choices: if the risk-return profile in the water sector becomes less attractive relative to other sectors, capital will flow elsewhere. A higher required return can therefore translate into higher allowed returns over time and—ultimately—higher bills for consumers (potentially with a lag).[35]

[35] For example, the cost of embedded debt is set using a balance sheet approach, which takes account of the industry's past debt costs. As actual debt costs increase, the higher costs will be captured in the balance sheet assessment at future price reviews and the cost of embedded debt will be higher as a result. These effects are lagged—i.e. the impact on customer bills may be realised in future AMPs.

We now assess the materiality of these risks in turn.

3.1 How the investability challenge can lead to investment being delayed, scaled back, or not delivered at all

3.1.1 Insights from the PR19 CMA redeterminations

The risks to investment arising from an un-investable regulatory settlement were highlighted by the Competition and Markets Authority (CMA) in its PR19 redeterminations.

Four companies appealed Ofwat's final determinations to the CMA at PR19. These companies argued that the allowed return was too low, given the actual risks faced by companies.[36]

Following its review, the CMA increased the weighted average cost of capital (WACC) allowance, highlighting the risks to under-investment from the allowed return being set too low:[37]

'[…] if the cost of capital is set too low, this may only have a limited effect on investment in the short term. However, the cost of capital today may have a knock-on impact on investment planning during AMP7 that will be actioned (or not) in subsequent price controls […] In this way, the current cost of capital can have a direct impact on the level of future investment and the future costs to customers.'[38]

'Potentially more important than the risk of under-investment […] is that a low WACC over multiple periods will lead to an opex bias and a gradual reduction in investment […]'[39]

In its redeterminations, the CMA also highlighted how **a structural bias towards OPEX over long-term capital investment, symptomatic of a hesitation to invest capital, could lead to a decline in investment and limited growth in the RCV, weakening the sector's ability to deliver and sustain essential infrastructure.**[40]

If investors lack confidence that they will earn a fair and predictable return—especially in light of increasing delivery risk and regulatory uncertainty—the required equity capital will not be forthcoming. Without

[36] Independent Commission on the Water Sector Regulation System (2025), 'Call for Evidence', 27 February, para. 271, p. 103.
[37] Competition and Markets Authority (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Final report', para. 9.1394(b).
[38] Ibid., para. 9.1273.
[39] Ibid., para. 9.1275.
[40] Competition and Markets Authority (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Final report', 17 March, para. 9.1275.

access to fresh equity capital, companies may be forced to rely solely on internally generated funds or increase leverage to unsustainable levels, ultimately leading to a scaling back of investment plans.

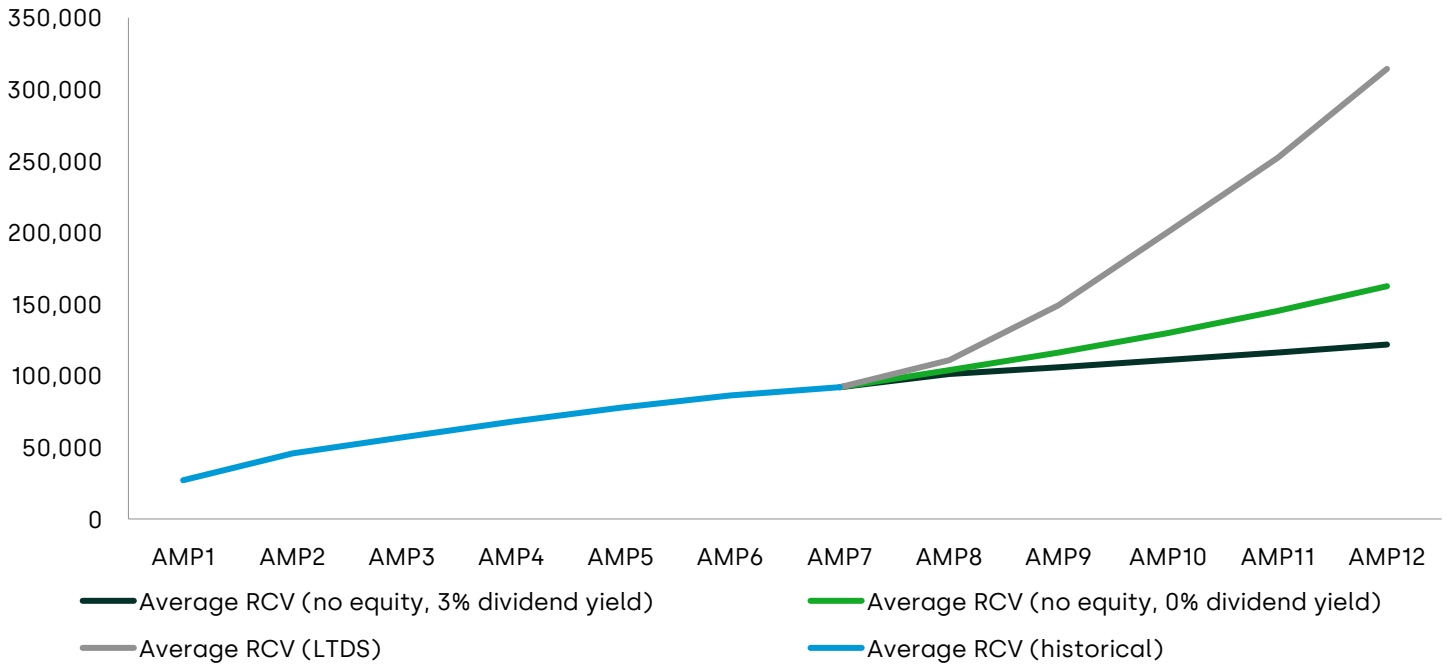
3.1.2 Illustrative modelling—to what extent could investability challenges compromise investment?

To quantify the potential impact on investment, we now estimate the sector's average RCV from AMP8 through to AMP12 under three different scenarios.

1. LTDS base case, i.e. assuming required equity injections occur, and delivery plans materialise.
2. No equity injection, 0% dividend yield, i.e. assuming full earnings retention and reinvestment, and de-gearing of actual companies towards the notional gearing level.
3. No equity injection, 3% dividend yield and de-gearing of actual companies towards the notional gearing level.

The growth rate of the industry RCV across each scenario is shown below.

Figure 3.1 Comparison of sector RCVs by scenario (£m, 2022–23 prices)



Note: RCVs are presented on a 2022–23 real basis.
Source: Oxera analysis based on Ofwat's final determinations publications and companies' Business Plans.

Figure 3.1 highlights the critical role equity must play in enabling companies to deliver their AMP12 investment plans. In the scenarios where equity injections are absent and companies de-gear towards the notional target (i.e. 55%, based on the PR24 final determinations), the average RCV through the period is materially lower.

This analysis shows that **even if no dividends are paid, c. £152bn from the LTDS investment anticipated would be forgone by the lack of equity injections** (i.e. scenario 2)**.** This reduction in RCV relative to the LTDS base case reflects a diminished capacity to finance capital programmes, which in turn could constrain the delivery of essential infrastructure projects.

In practical terms, this means that without a regulatory framework that supports investor confidence—and therefore access to equity—companies may be unable to deliver the investment required to meet environmental, service, and resilience commitments. For consumers, the cost of this under-investment may well take the form of poorer service levels, increased environmental harm, and the need for more costly catch-up investment in the future.

3.2 The potential impact on customer bills

Increasing perceived regulatory uncertainty has led to credit rating agencies downgrading the water sector—**with PR24 the second consecutive price control where the ratings agencies downgraded the stability and predictability of the regulatory regime in water within their ratings assessments**.[41] The impact has been weaker ratings for water companies, leading to a higher cost of debt finance which is partially passed on to customers via bills.[42]

The downgrading of the stability and predictability of Ofwat's regulatory regime has contributed to downgrades in credit ratings of individual companies.

3.2.1 Illustrative modelling—how could rating downgrades affect customer bills?

We now estimate the increase in financing costs associated with rating downgrades. This is done with reference to two scenarios.

[41] See: (i) Moody's (2018), 'Regulator's proposals undermine the stability and predictability of the regime', 22 May; (ii) Moody's (2024), 'Reduced predictability of regulatory environment pressures credit quality', 18 November.
[42] This analysis is grounded primarily in the recent downgrades of the sector ratings by Moody's (in November 2024), S&P (in January 2025), and Fitch (February 2025), largely predicated on downgrades to Ofwat's regulatory stability and predictability score. Source: Moody's (2024), 'Regulated Water Utilities—UK: Ofwat's draft determination increases sector risk', 14 August.

- In **Scenario A**, we look at the impact of rating downgrades on corporate bonds in general.
- In **Scenario B**, we look at the observed credit spread differentials (i.e. differences in debt costs) between water companies with different ratings.

These scenarios are summarised in Table 3.1 below.

Table 3.1 Scenarios analysed to estimate bill impacts from credit rating downgrades

Scenario	Downgrade	Proxies
A	A/BBB to BBB	iBoxx £ non-financials 10+ corporate bond indices
B	Baa1 to Baa2	Observed water sector fixed-rated bonds

Note: Both scenarios consider a uniform hypothetical downgrade to the entirety of the debt portfolio, including both the cost of embedded debt and the cost of new debt. As such, this approximates a 'steady-state' impact of a hypothetical downgrade of the whole industry, rather than the potential immediate impact of such downgrade.

In essence, our approach relies on calculating how a benchmark (e.g. the iBoxx BBB index) trades in comparison to gilts, and then comparing that figure with the same calculations for another benchmark (e.g. the A/BBB index).[43] Since the lower-rated index has a higher spread to gilts (to account for its higher risks), we can use this difference as a proxy for the extra financing costs incurred as a result of a downgrade.

While the primary impact of a credit rating downgrade is reflected in higher debt costs, it also has an impact on the cost of equity. This reflects the principle that equity investors will require higher returns if the risk profile of the firm increases, including as measured through higher borrowing costs.

We estimate the impact of an increase in debt premia on the cost of equity using our ARP–DRP framework. The ARP–DRP framework is based on the fundamental principle of risk aversion in finance: namely, that the risk premia required by equity investors must be strictly greater than the

[43] We measure spreads based on a 12-month average between 1 February 2024–31 January 2025.

risk premia required by debt investors, due to differences in the priority of claims.[44]

These movements in the costs of equity and debt have material implications for the overall WACC. Table 3.2 below shows the estimated impact of the downgrades on the cost of capital.

Table 3.2 WACC impact of credit downgrades

	Scenario A	Scenario B
Cost of debt	+28bps	+43bps
Cost of equity	+48bps	+109bps
WACC	**+37bps**	**+72bps**

Note: The associated increases in the WACC are estimated based on Ofwat's notional gearing assumptions.
Source: Oxera analysis.

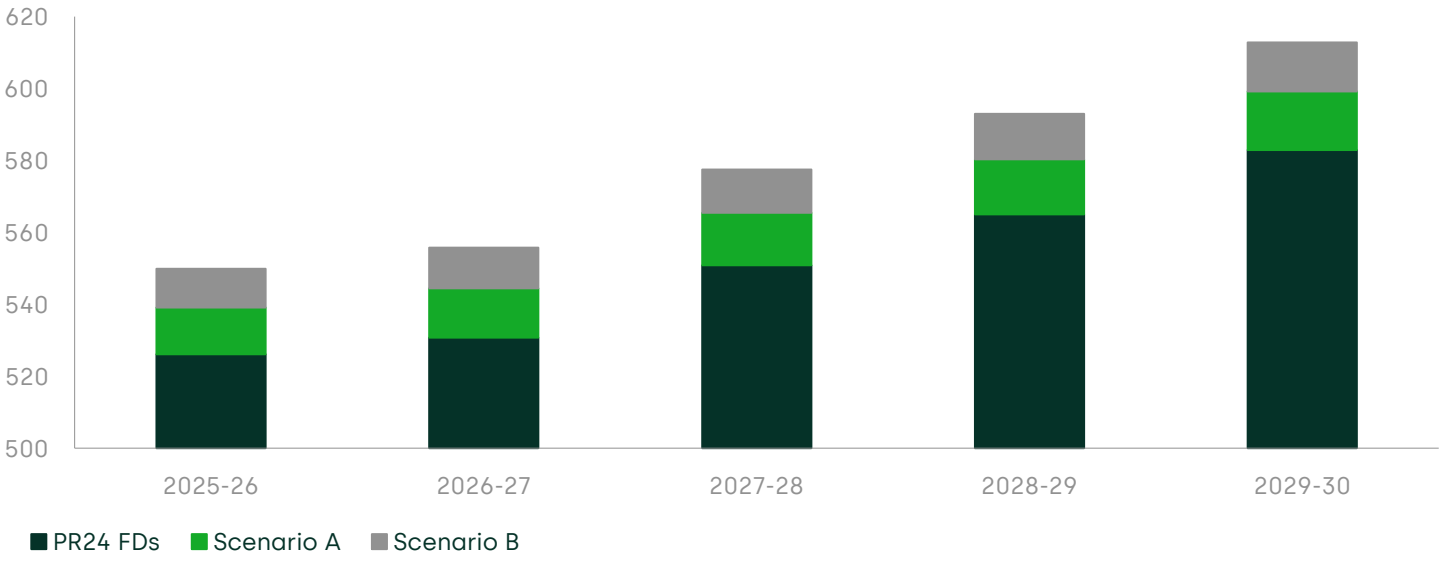
We then translate these changes in financing costs to impacts on customer bills. In practice, there is a lag between increases in the actual cost of debt, and the impact feeding into the regulatory assessment of required returns. However, by way of illustration—and using PR24 regulatory parameters—the increase in financing costs under the two scenarios outlined above would result in **a long-run increase in customer bills of £14 to £27 per year**.[45, 46]

Lower credit ratings could result in non-trivial increases in household bills, **highlighting the importance of maintaining a stable and**

[44] Our ARP–DRP approach estimates the minimum asset risk premium (ARP)—and by extension cost of equity—by extrapolating the observed debt risk premium (DRP, based on the cost of new debt) to 100% gearing. This extrapolation is based on the principle that the risk premium for a fully debt funded company must be equal to the risk premium of the underlying asset as a whole. We then use the underlying ARP to calculate the implied cost of equity. Our report has previously found that—based on the observed level of volatility in regulated network utilities—this extrapolation is likely to be a lower bound on the required cost of equity. For more detail see Oxera (2024), 'Evaluation of the ARP–DRP framework', 8 November..
[45] We calculate the company-level impact by inputting the new estimated WACC into each company's PR24 financial model, which recalculates customer bills accordingly. The sector-level impact is calculated by weighting the individual company level impacts by their respective RCVs.
[46] These figures reflect the impact if the change in spreads were applied to the entire cost of debt, rather than just new debt—providing an upper-bound estimate of potential consumer impact. In effect, the analysis estimates the costs of a hypothetical water sector that is rated lower than the current water sector.

predictable regulatory environment, in order to avoid inefficient regulatory costs leading to higher customer bills.

Figure 3.2 Impact of Scenarios A and B on average sector household bills (£, 2022–23 prices)



Note: Prices are presented on a 2022–23 real basis. All averages were calculated using a RCV weighted average.
Sources: Oxera analysis based on Ofwat's final determinations publications and datasets.

3.3 Key messages

We have demonstrated in this section how the investability challenge facing the sector could have significant adverse impacts on customers. Left unaddressed, this would most likely impact consumers by compromising the delivery of much needed investment. Over the longer term, a lack of a stable and predictable regulatory framework could also lead to higher customer bills via a higher cost of capital.

In the following section, we outline a set of guiding principles that should shape the development of a formal investability framework within the regulatory regime.

4 Establishing an investable framework

This section considers key guiding principles that could assist the development of a formal investability framework within the overarching regulatory regime, to create an environment in which the sector can attract sustainable, long-term investment. In doing so, we draw on lessons from the past, as well as approaches taken by other economic regulators. Finally, we identify proposed solutions to meeting each guiding principle.

With the right regulatory arrangements in place, the water sector should be investable given its fundamental characteristics—it is an essential service and has been backed by an RCV model that has proven to be effective in attracting investment in other sectors (and in the water sector, in the past).

We have developed **six principles** that would underpin an investable regulatory framework.[47] These principles are not new in concept, but require a renewed and clearly articulated commitment from the economic regulator to promoting investment that will ultimately be to the benefit of current and future customers.

We recommend a principles-based approach, since there are significant aspects of the regulatory model that might change by PR29—not least as a result of the Commission's recommendations—and these principles are important regardless of the regulatory model. It should ultimately be for the regulator to develop an investability framework under any reformed policy framework, but in a manner which takes account of these principles.

These principles fall into three categories:

A. Clear long-term policy and regulatory framing to assess the long-term consumer interest;
B. Well calibrated operational regime with consistent and adequate risk/return profile;
C. Long-term, forward-looking, and evidence-based assessment of financeability from equity and debt perspectives.

[47] These principles are consistent with the 2024 Investability Report framework, but take into account the longer-term framing of the Commission's CfE, in contrast to responding to proposals for a specific price control period.

The overarching theme underpinning our recommended changes is that the framework of economic regulation needs to take a longer-term perspective and provide investors with greater certainty over the treatment of their capital, the returns that are on offer, and the risks to those returns. The regulatory framework should seek to provide investors with confidence around investment recovery. This is necessary, and in the interests of consumers, given the sizeable programme of investment that is required to deliver consumer and environmental objectives.

4.1 Principle 1: the regulatory framework should be backed by a firm commitment to promoting investment and securing investability, through aligned policy and regulatory signalling

4.1.1 Problem diagnosis

Ofwat is required to balance multiple primary and secondary duties.[48] It faces a complex balancing act in making the sector simultaneously resilient, financeable, and affordable, while also seeking to ensure that customers do not overpay for services.

There has been a lack of political and regulatory clarity on how these trade-offs should be made, and how to maximise the welfare of current and future consumers. As noted in the CfE, the most recent Strategic Policy Statement from government sets out more than 50 expectations of Ofwat.[49] The role of the economic regulator in this context is inherently challenging.

However, there is a risk that in balancing these multiple duties and priorities, insufficient weight is placed on investability. In this section, we identify several areas in which Ofwat's approach has undermined investability and/or sent the wrong regulatory signals.

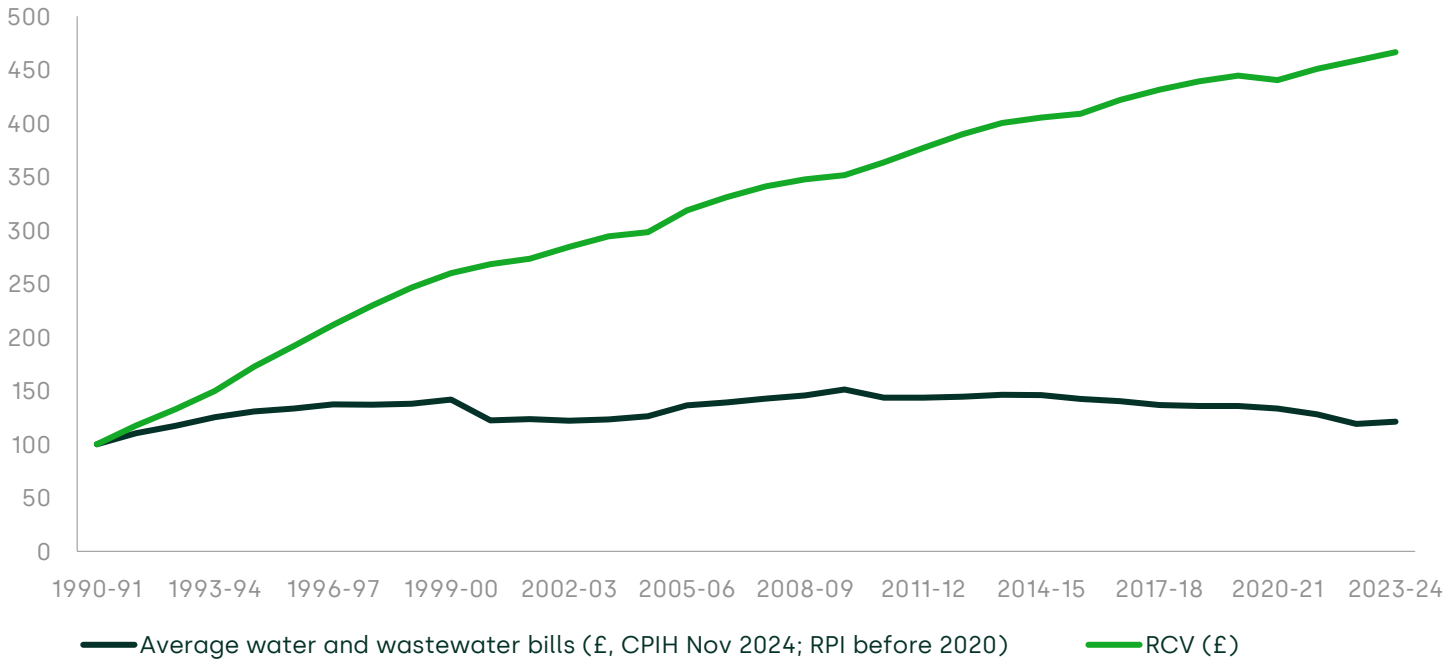
First, PR14 and PR19 led to a decade of real terms bill reductions.

There has been a clear focus over consecutive AMPs in driving down bills. Ofwat's previous Chair spoke of 'the decade of falling bills'.[50] This remained the focus even when (at PR19) companies had highlighted growing investment requirements and other regulators (e.g. WICS in Scotland) had identified the need for significant long-term bill increases to fund enhancements and asset replacement.

[48] Ofwat, 'Our duties', accessed: https://www.ofwat.gov.uk/about-us/our-duties/.
[49] Call for evidence, p. 16.
[50] Ofwat (2017), 'PN 17/17: Ofwat boss talks of the 'decade of falling bills'', 13 October.

At PR24, the notion of affordability has become more prevalent, but there has been no clear framework to trade off investability and affordability. This risks merely pushing funding requirements onto future generations, while failing to provide investors with key information needed to inform today's investment decisions. This balancing act, and Ofwat's decisions in balancing investability, financeability and affordability, can be illustrated by studying customer bill trends relative to RCV growth, as shown in Figure 4.1.

Figure 4.1 Average consumer bills and WaSCs RCV (£, 1990 = 100)



Note: Figures were indexed at £100 in 1990.
Source: Oxera analysis using Water UK average consumer bills data.

Figure 4.1 shows that despite the growth in the sector RCV, average household bills have not increased materially since privatisation. In real terms, bills have increased by 21% between 1990 and 2024, while the industry RCV increased by 366%. In the period from 2010 (i.e. AMP5), bills reduced by 20% in real terms through to AMP7, while RCV grew by 32.7%.

While consumer bills result from the interaction of multiple elements of the price control, including for example run-off and PAYG rates and the cost of capital, the delinked long-term trend between a growing RCV and lower bills, is suggestive of potential over-emphasis on affordability. In PR24 draft determinations, Ofwat specifically adjusted RCV run-off

rates, beyond those originally proposed, to reduce bills by lowering company cash flows, at the expense of investability.[51]

Second, Ofwat has failed to acknowledge the critical nature of the investability challenge, and the need to consider whether its regulatory framework is best suited to delivery of this investment.

Ofwat has implicitly assumed that 'capital is abundant', and hence that companies have ample access to equity finance.[52] This mindset has shaped its decisions in the past, including how it sets allowed returns, thinks about outperformance and considered 'equity solutions' at PR24. This ignores the need for the sector to compete for capital with other potential investment opportunities.

During PR24, Ofwat recognised that investor sentiment towards the sector was poor. However, it made only minimal changes to its regulatory framework to support investment (including 'aiming up' by a small amount on the return on equity and via the late addition of the outturn adjustment mechanism, OAM), but had no framework for assessing whether such changes, in the round, helped ensure the sector was investable.

We recognise the challenges Ofwat faces in balancing competing objectives, both now and in the future. However, without a clear framework to provide transparency and guidance on these decisions, there is a risk that the resulting investment proposition is insufficiently attractive to investors.

Third, Ofwat has used financial levers to prioritise affordability over investability

Another area of concern is around inconsistent approaches to financial levers (RCV run-off and PAYG). Ofwat has the ability to adjust these two financial levers to influence bills. However, changes to run-off rate can have significant impacts on investors. If an investor is promised a recovery period of a certain number of years, and then Ofwat updates

[51] Oxera (2024) 'Investability at PR24: Final Report for Water UK', 28 August, section 8.2.
[52] In his speech, Jonson Cox claims that there is significant equity available for investment, and that by ensuring a sustainable fair investor proposition that encompasses index-linked asset bases, predictable returns and a stable regime, outperformance of up to 300 basis points on RoRE, among others, the water sector will remain hugely attractive for long-term responsible investment. Ofwat (2020), Utility Week City Conference, London, Friday 6 March 2020', keynote speech by Jonson Cox, p. 11.

this recovery period to achieve a specific run-off rate and consumer bill amount, investors will then be faced with a different payback period.

If Ofwat takes an inconsistent approach to RCV run-off over time, investors will face uncertainty over the payback period when choosing to invest in the water sector. At PR24, Ofwat allowed lower run-off rates than at PR19 and set upper limits on the run-off applicable to each revenue control. This undermines investor confidence in the sector, especially as investors provide equity with an understanding that they will receive a specified return within a specified time. This inconsistency is detrimental to encouraging new investors to invest into the water sector.

This helps to keep bills lower in the short run but comes at a trade-off. First, from an intergenerational equity perspective, it means higher bills for future generations. Second, from an investability perspective, if the RCV run-off rate is lowered, investors must wait longer to receive their returns in full (i.e. the investment payback period is longer). This calls into question whether Ofwat should be limited in its ability to use financial levers such as the run-off rate and the PAYG rate.

Fourth, procedural issues have further undermined confidence in the regulatory framework

Ofwat's PR24 approach has suffered from a lack of stability and predictability, with large shifts in approach at the various stages of the price review (final methodology, draft and final determinations). A clear example was Ofwat's approach to ODIs in PR24:

- Ofwat's PR24 final methodology stated that incentive rates would be set using a 'bottom up' approach, based on evidence from customer willingness to pay (WTP) research (December 2022);[53]
- Given issues with mapping the customer survey evidence to performance commitment (PC) definitions, Ofwat decided that it would use an alternative, 'top down' approach to setting ODI rates (Summer 2023);[54]
- The draft determinations imposed considerably more stretching targets and higher incentive rates than proposed in companies'

[53] Ofwat (2022), 'Our Final Methodology for PR24', pg. 71., December.
[54] Ofwat (2023), 'PR24: Using collaborative customer research to set outcome delivery incentive rates', pg. 2, August.

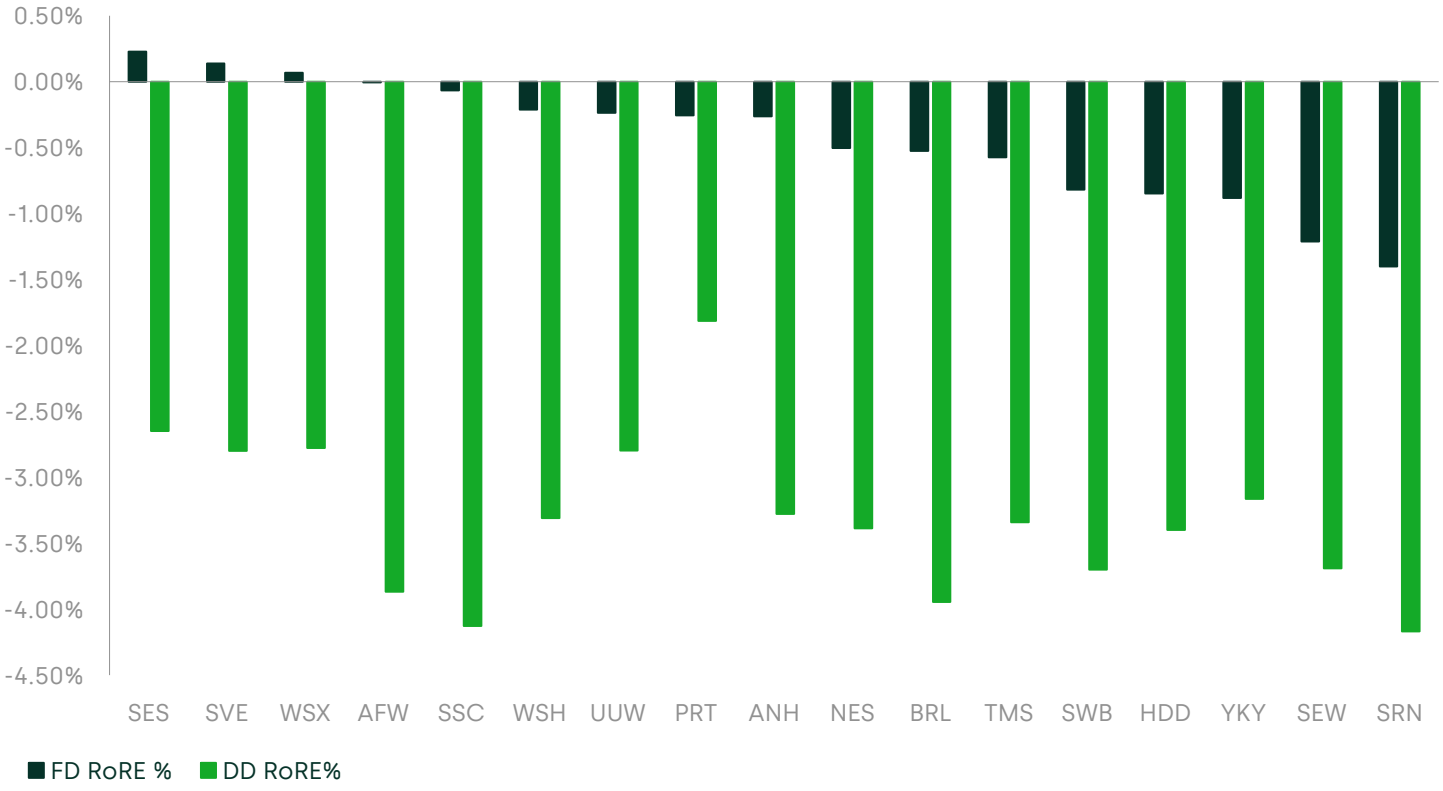
plans with limited risk mitigations (e.g. deadbands, caps and collars), resulting in large forecast ODI penalties (July 2024);[55]
- In light of companies' responses to the draft determinations, Ofwat consulted on a new end-of-period outturn adjustment mechanism (OAM), centred around zero (October 2024);[56]
- The PR24 final determinations included further significant methodological changes, including material changes in approach to setting PC levels; more extensive use of caps and collars, and deadbands; significant changes to ODI rates; and a heavily revised OAM with annual reconciliations now centred around ±50bps of RoRE (December 2024).[57]

The impact of these changes on expected returns can be seen by comparing the draft determinations and final determinations forecast RoRE impacts under a common scenario. Figure 4.2 below shows expected ODI rewards and penalties under the PR24 final determinations. If each company were to continue to deliver average AMP7 levels of performance, there would be an industry-wide net penalty of -£1.1bn over AMP8. By comparison, the forecast net penalty for the same level of performance based on the draft determination ODI rates was -£8bn (prior to adjustment mechanisms). **This is a difference of nearly £7bn, showing the impact of policy changes made within a six-month period.**[58]

Ofwat indicated that a key driver of the change in the calibration of the ODI framework between draft and final determinations was the inclusion of an additional year of outturn data (2023/24). While there were movements between draft and final determinations, the apparent sensitivity of the regulatory targets to the inclusion of one extra year of data highlights the lack of stability and predictability in Ofwat's framework. This is critical in areas such as ODI rates, which directly influence investment decisions—large swings from one period to the next (or even from one consultation to the next) affect the ability of companies and investors to make informed investment decisions.

[55] Ofwat (2024), 'PR24 Draft Determinations: delivering outcomes for customers and the environment', pg. 30, July.
[56] Ofwat (2024), 'PR24: Consultation on outturn adjustment mechanism', October.
[57] Ofwat (2024), 'PR24 final determinations: aligning risk and return appendix', pg. 16., December.
[58] These numbers are calculated pre-OAM and are only intended to be illustrative of the scale of change to the PCs and ODI rates between draft and final determinations.

Figure 4.2 Average impact on RoRE p.a. over AMP8, based on draft and final determinations (average AMP7 performance)



Source: Oxera analysis.

The material shifts in Ofwat's decisions throughout the PR24 consultation process harmed the investment outlook. The investor engagement undertaken when preparing our 2024 Investability Report supports this analysis, and indicates that **the draft determinations were particularly damaging for investor confidence**.[59] This highlights that the way in which Ofwat applies and calibrates its regulatory framework is an important determinant of investability.

As a result of the above issues, there has been a deterioration in creditworthiness

UK regulators have historically been considered to have the highest levels of stability, and credit ratings agencies historically scored them as AAA within the 'stability and predictability of regulation' criterion (which is a component score for the credit ratings of water companies). However, this has changed in recent water price review periods, with

[59] Oxera (2024), 'PR24 Investor Engagement Report', prepared for Water UK, October.

several credit rating agencies downgrading their assessments of Ofwat's regulatory stability (in some cases, by several notches over the last two price reviews). Moody's explanation for downgrading Ofwat echoes the issues identified above.[60]

4.1.2 Recommendations

The interests of future consumers are inextricably linked to the sector's investability. A lack of investability will ultimately harm future consumers and undermine the development of resilient infrastructure and economic growth. However, investment does not come for free—bills will need to rise to pay for network improvements that will benefit the sector in the long-term.

Accordingly, delivering investment will require greater transparency and support from Ofwat or government over the need for bills to rise and the reasons for this. **Formal recognition of the investability challenge will be a key step to understanding and addressing its root causes**, as well as in securing public support for the changes. A change of mindset is needed to ensure a regulatory framework that is supportive of investment.

We recommend that the government should recognise the investability challenge and promote investment that is in the long-term consumer interest through:

- amendment of Ofwat's statutory duties (e.g. a streamlined set of duties, with investability as a central component of the finance duty);
- providing guidance on how Ofwat should prioritise investment (and make trade-offs relative to other policy objectives) within the strategic policy statement (SPS);
- setting firm and measurable regulatory requirements around promoting investment. For example, Ofwat could be required to set out a pathway to re-securing its previous AAA/Aaa score for

[60] 'Across the sector, past decisions, including to prioritise affordability and shareholder distributions, have contributed to underinvestment and exacerbated the sector's exposure to changing weather patterns, population growth and shifting expectations. Regulatory targets have become more demanding and penalties for those that fall short have continued to grow. With widespread investigations, fines for UK water companies breaching environmental legislation are likely to increase further. In addition, a perception that the water sector is "broken" has prompted a government-initiated strategic review that aims to improve the regulatory environment and create a stable backdrop to attract investment. However, until completed and any potentially credit positive recommendations are successfully implemented, this review also brings increased near-term uncertainty. Taking account of the above, we have changed our assessment of stability and predictability of the regulatory environment for the UK water sector under our rating methodology to A from Aa.' Moody's (2024), 'Moody's Ratings downgrades Southern Water to Ba1, on review for further downgrade', 13 November.

regulatory stability and predictability, and to report on its progress on an ongoing basis.[61]

Moreover, as economic regulator, Ofwat should create an explicit investability framework, articulating how investability will be assessed (and related issues addressed) in practice. This should include clearer definition over the current and future use of financial levers to balance between various goals, to seek to provide greater certainty for investors.

The RCV run off rate is an important building block of allowed revenues and influences how companies structure their finances and so requires stability and predictability in regulatory policy between price reviews.[62]

B. Well calibrated operational regime with consistent and adequate risk/return profile

4.2 Principle 2: the regulatory framework should provide an appropriate risk-reward profile for a sector undergoing a significant long-term enhancement programme

4.2.1 Problem diagnosis

In our performance report, we show that investors have been exposed to high levels of downside risk exposure—including for factors outside of management control—and high variability of returns. Four companies (HDD, SRN, SEW and SES) have had their entire allowed equity returns wiped out by operational (cost and performance) incentives in the first four years of AMP7 (before considering other sources of out/underperformance such as financing).

This looks set to continue in AMP8. Even if companies achieve the significant improvement in performance forecast in their business plan submissions, the sector will remain in net penalty across TOTEX and ODIs.

This points to issues with the **overall risk proposition facing investors**, including (i) an incentive package under which investors face more downside than upside risk and (ii) high levels of risk overall.

[61] It could, for example, publish formal guidance affirming its intention to maintain continuity in core aspects of the price control methodology.
[62] There is also scope for more consistent policies around financial levers across companies—for example, some companies recover capitalised infrastructure renewals expenditure through pay-as-you-go, while for others this is added to RCV.

4.2.2 Recommendations

Companies must be provided with a balanced risk package with an appropriate level of regulatory risk exposure reflecting the investment requirements of the sector. This requires a rebalancing of the incentive package relative to PR19 and PR24. Potential options include:

- Reducing exposure to service performance and cost risk— via adjustments to cost sharing rates (to reflect the higher uncertainty around cost estimates) and ODI rates, in order to better align risk exposure to the allowed cost of capital;[63]
- Moderating the overall level of return at risk to ensure that it is proportionate to the equity returns on offer, and the maximum loss that companies can incur is less than the base equity return provided by Ofwat's WACC allowance.[64] This could be achieved via adjustments to the existing aggregate sharing mechanisms (or the introduction of a new mechanism[65]);
- Providing greater protection for companies against service performance risks and changes in circumstances, where these lie outside of their control.

We discuss these in more detail in a separate performance report prepared on behalf of Water UK.[66]

4.3 Principle 3: Ofwat should take a long-term approach to expenditure and performance, including assessment of long-term infrastructure resilience needs

4.3.1 Problem diagnosis

The challenges facing the sector and the expected trajectory of investment in the coming decades indicate that a forward-looking, long-term approach to economic regulation is needed.

Ofwat included 'focus on the long term' as one its key principles for PR24.[67] However, its current approach—as ultimately implemented at

[63] In the energy sector, for RIIO-T3, transmission operators proposed incentive rates as low as 10% in response to the RIIO-3 Sector Specific Methodology Consultation. Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – Overview Document', July, p.86.
[64] We anticipate that this would be a symmetrical adjustment. However, alternative options could be considered and the most important consideration is that the calibration of such mechanisms and the overall symmetry of the risk distribution is consistent with allowed returns. Moreover, there could still be mechanisms to incentivise sector leading performance improvements that could be excluded from any cap (e.g. enhanced incentives).
[65] One option may be to implement a 'return adjustment mechanism', similar to that implemented by Ofgem at RIIO2. Under this approach, Ofgem applies a symmetrical adjustment to outturn RoRE returns where these deviate from the base return at predefined threshold levels. See Ofgem (2022), 'RIIO-ED2 Final Determinations Overview document', 30 November, p. 33.
[66] Oxera (2025), 'A new approach to performance and supervision', prepared on behalf of Water UK, 23 April.
[67] Ofwat (2022), 'Our final methodology for PR24', December.

PR24—is closely tied to setting regulatory allowances (for both base and enhancement) and setting performance targets in five year cycles. There have been some efforts to break away from this (e.g. the requirement for companies to prepare long-term delivery strategies). However, the LTDS documents have seemingly not played a central role in shaping allowances at PR24, nor does Ofwat appear to have used these submissions to understand the investability challenge facing the sector.

We consider Ofwat's price review framework to be insufficiently focused on the long-term trajectory that the sector is on. The long-term investment requirements necessitate a commitment to a longer-term regulatory approach overall (not centred on five years). For example, in Scotland, the economic regulator (WICS) has been explicit about the need for long-term thinking:

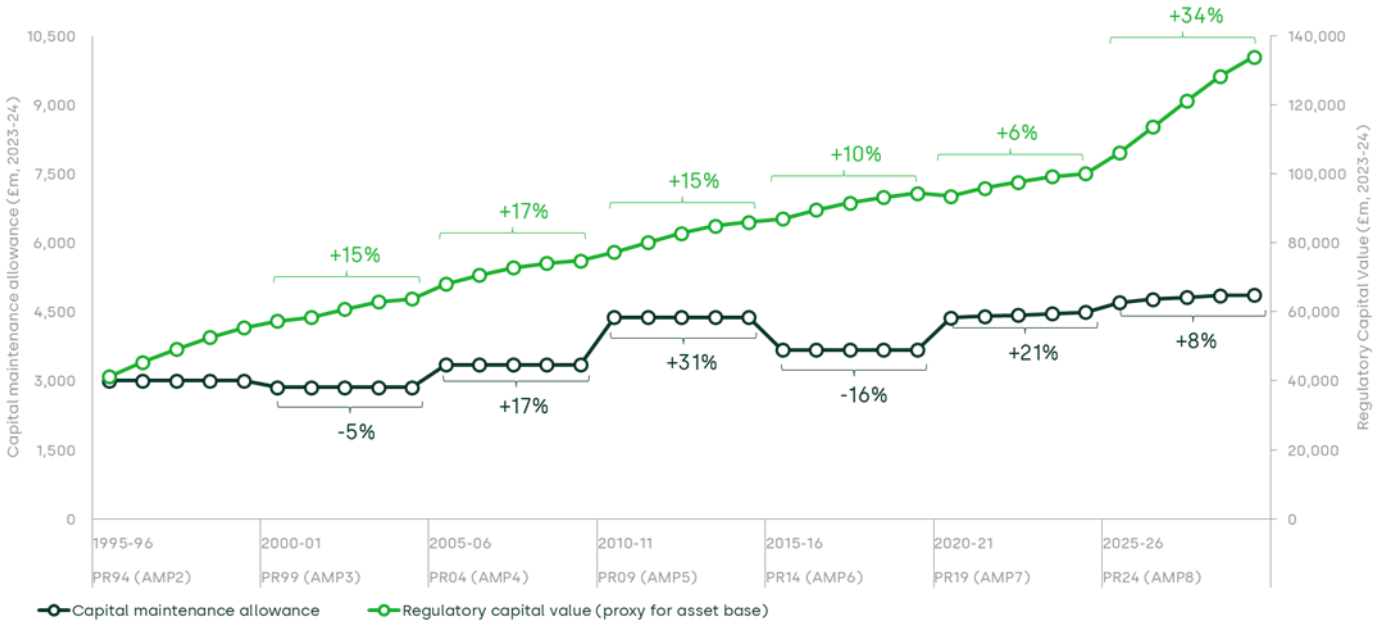
'SRC27 set in the context of the long-term. SRC21 shifted the balance away from focusing on the short-term investment requirements over a defined regulatory period towards adopting a longer-term approach. This recognised the importance of looking beyond the regulatory period, given the long-term nature of the water industry. Our approach for SR27 maintains this focus, requiring Scottish Water to set out what it plans to deliver over the 2027-33 regulatory period as a step towards achieving the longer-term sector vision.'[68]

More generally, investors need confidence that the approach to cost and performance assessment will result in funding allowances that are sufficient to enable the companies to deliver their regulatory obligations both within the upcoming AMP but also into the longer-term.

A particular issue discussed in our performance report, and noted in the CfE, is the extent to which the current regulatory system has provided companies with sufficient levels of funding for long-term infrastructure resilience. We find that growth in capital maintenance allowances has not kept pace with growth in new assets (and their future replacement needs), as shown in the figure below.

[68] WICS (2024), 'Strategic Review of Charges 2027-2033: Final Methodology', pp. 10-11.

Figure 4.3 From PR94 to PR24 RCV has increased by c. 230%, while capital maintenance allowances have increased by c. 60%



Note: 2023/24 prices. Average annual values are shown for PR94 to PR14, as only a total capital maintenance allowance figure was published (PR94–PR09), or can be estimated (PR14). PR14, PR19 and PR24 capital maintenance allowances are based on the implicit allowance available from Ofwat's econometric models. For PR14, estimate is based on the published implicit allowance for capital maintenance published at the Risk Based Review, applied to Final Determination Basic Cost Threshold allowance. For PR24, the additional funding made available for mains replacement and meter replacement is also included, as well as HDD's CAC for reservoir maintenance.
Source: Oxera analysis of Ofwat price determinations and published RCV values.

Investors will take account of asset risk when assessing whether to invest a sector. If the regulatory framework is consistently underfunding infrastructure resilience, investors will either be required to fund these shortfalls on an ongoing basis (by overspending allowances), cut back other areas of investment or will take on greater asset risk not captured in the allowed returns. This damages the investability of the sector, since investments made today will carry an unfunded replacement liability in the future.

A key issue here is Ofwat's reliance on outturn data to configure its base cost models and set base allowances. These do not sufficiently capture forward-looking cost pressures, which risks under-funding companies and leaving investors with shortfalls to bridge.

4.3.2 Recommendations

The price review framework should take greater account of long-term requirements of the sector (in terms of future infrastructure needs, consumer needs, and environmental needs), price paths, and

performance trajectories, rather than focusing solely on distinct five-year price controls. This should aim to provide greater transparency over long-term trade-offs and challenges.

In this context, the economic regulator should consider:

- **Long-term modelling of expenditure requirements and the appropriate pathways within the price review**[69]—this could, for example, be facilitated through greater use of the LTDS or similar long-term forecasting exercises.
- **Long-term incentive mechanisms**—e.g. Ofwat has previously considered having the ODI framework include multi-AMP incentives to encourage long-term behaviours.[70] This could include multi-AMP glide paths for key performance measures. At a minimum, by having consistency between ODI rates across AMPs, the impact of Ofwat's decisions over time would be more predictable and support investment decision making.
- **Multi-AMP cost allowances/funding commitments** to provide greater clarity over regulatory treatment of investment expenditure.

A long-term approach to asset health funding is particularly critical from both a consumer and investor perspective. Appropriate funding of long-term asset health is a fundamental part of ensuring the sector can attract and retain equity, and deliver the right outcomes for current and future users. **A new framework is needed to give companies and investors confidence that efficient increases in asset maintenance investment will be funded in future control periods.** This should seek to enhance both regulatory measurement of asset health (e.g. through better measures of asset condition and risk), and the accuracy with which allowances are calibrated in order to provide consistent, long-term funding. The WICS approach to asset health (which considers the replacement cost of companies' assets and analysis of asset lives for different asset classes) is one potential source of evidence.[71] Jacobs and Reckon have also identified potential improvements to the

[69] An alternative would be to move to longer control periods—for example, Ofgem previously moved to eight-year price controls for its RIIO-1 framework. However, the experience in energy was mixed and Ofgem has subsequently returned to five year controls. Longer price controls could help to resolve the lack of long-term thinking in PR24, but would also have implications for the allocation of risk between customers and companies.
[70] We understand Ofwat considered multi-AMP incentives in the early stages of PR24.
[71] For an application of this approach, see Northumbrian Water (2025), 'Northumbrian Water Limited Statement of Case: PR24 CMA redetermination', March, pp. 54-55.

regulatory framework for asset health and operational resilience on behalf of Water UK.[72]

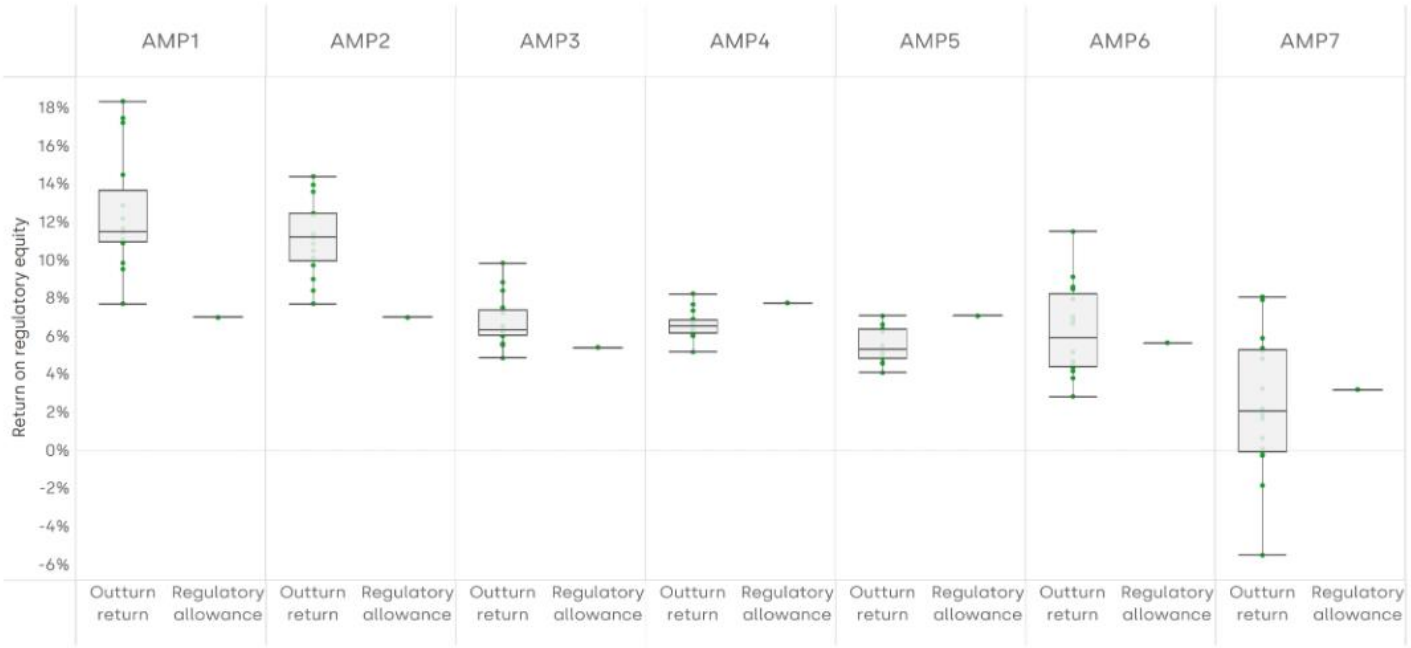
The ultimate objective of these changes should be to give investors greater long-term certainty over returns and cost recovery. **In the case of asset health, investors require confidence in their exposure to historical asset deficits and should not be required to fund shortfalls that are the result of historical regulatory decisions.**

4.4 Principle 4: the regulatory framework should provide fair and competitive sector returns

4.4.1 Problem diagnosis

As noted in the CfE, 'the attractiveness of the sector to investment is driven by the level and stability of returns investors can expect to get.'[73] Outturn water sector returns have fallen over time, and there is evidence that returns are lower than in other sectors with comparable risk. This highlights the investability challenge facing the sector.

Figure 4.4 Trends in the return on regulatory equity over time



Note: We show the 'return on capital employed' value reported in Ofwat's financial performance and expenditure reports up to AMP6. From AMP6 onwards we use the Return on Regulatory Equity as reported in Ofwat's Monitoring Financial Resilience

[72] Reckon (2024), 'Improvements to the regulatory framework for asset health and operational resilience', 5 July.
[73] Call for evidence, p. 139, para 365.

reports. AMP6 based on the data underpinning Ofwat (2020), 'Monitoring financial resilience report', December, p. 12. AMP7 based on the average Return on Regulatory Equity reported across the three AMP7 Monitoring financial resilience reports to date and the values reported in companies' 2023/24 APR within table 1F.17 (RoRE). Allowed return on equity deflated in RPI-real basis for consistency across regulatory periods. The regulatory allowance shown in each AMP represents the Ofwat's cost of equity allowances. For AMP7, we show the PR19 final determinations allowance, although we note that several companies received a cost of equity allowances in excess of this through a Small Company Premium (PRT and SSC), and the four companies that appealed the PR19 final determinations also received a higher cost of equity allowance. Source: Oxera analysis.

There are multiple potential drivers of declining returns in the water sector:

- a decade of low interest rates and cheap corporate debt following the financial crisis pushed down required returns across the market as a whole;
- a tightening of the base returns allowed by Ofwat; and
- the impact on returns of under-performance relative to regulatory allowances/targets in AMP7.

In this section, we focus on Ofwat's methodology for setting base returns. We consider levels of risk within the regulatory package, and performance against targets, in section [4.2] above.

When setting price controls, Ofwat estimates a weighted average cost of capital. This requires estimation of the cost of equity and the cost of debt.

The cost of equity is not directly observable from market evidence, and therefore needs to be indirectly estimated using proxy data. Ofwat estimates the required return on equity using the CAPM, as has been typical for UK economic regulators.[74]

The CAPM and its parameters are inherently subject to estimation, measurement uncertainty and error, and there can be large disparities in views on investors' required levels of returns.

[74] Using the CAPM method and limited use of cross-checks, Ofwat estimated the cost of equity in the PR24 FDs to be 4.58% to 5.07% (with a midpoint of 4.83%, CPIH-real). Ofwat then 'aimed up' from the midpoint of its CoE range to a point estimate of 5.10% (reflecting an adjustment of 27bps). It reasoned that this aim up was justified due to negative investor sentiment towards the water sector and extensive financing needs of the large capital programmes planned for AMP8.

Ofwat's approach to estimating the cost of equity via the CAPM does not make use of all available data

A particular challenge with applying the CAPM approach in the water sector is the limited number of publicly listed water networks. With only three listed companies and no close international comparators, Ofwat has a limited comparator set to estimate the beta component of the return on equity. However, Ofwat has chosen to further limit the comparator set through the exclusion of Pennon, meaning that only Severn Trent and United Utilities are included in the sample. In doing this, Ofwat is unnecessarily restricting the data that is available to it when setting allowances for investor returns.

Further, Ofwat fails to recognise that setting an estimate for the return on equity for the notional company is quite different to setting an estimate for the listed water companies. Indeed, the listed companies have been documented to be above-average performers (two of three were rated as Outstanding in Ofwat's QAA mechanism in PR24), with a track record of outperforming base returns (while by definition, the notional company can achieve only the base level of returns).[75]

The spread between Ofwat's allowed return on equity and the observed cost of debt highlights the inadequacy of returns available to equity investors

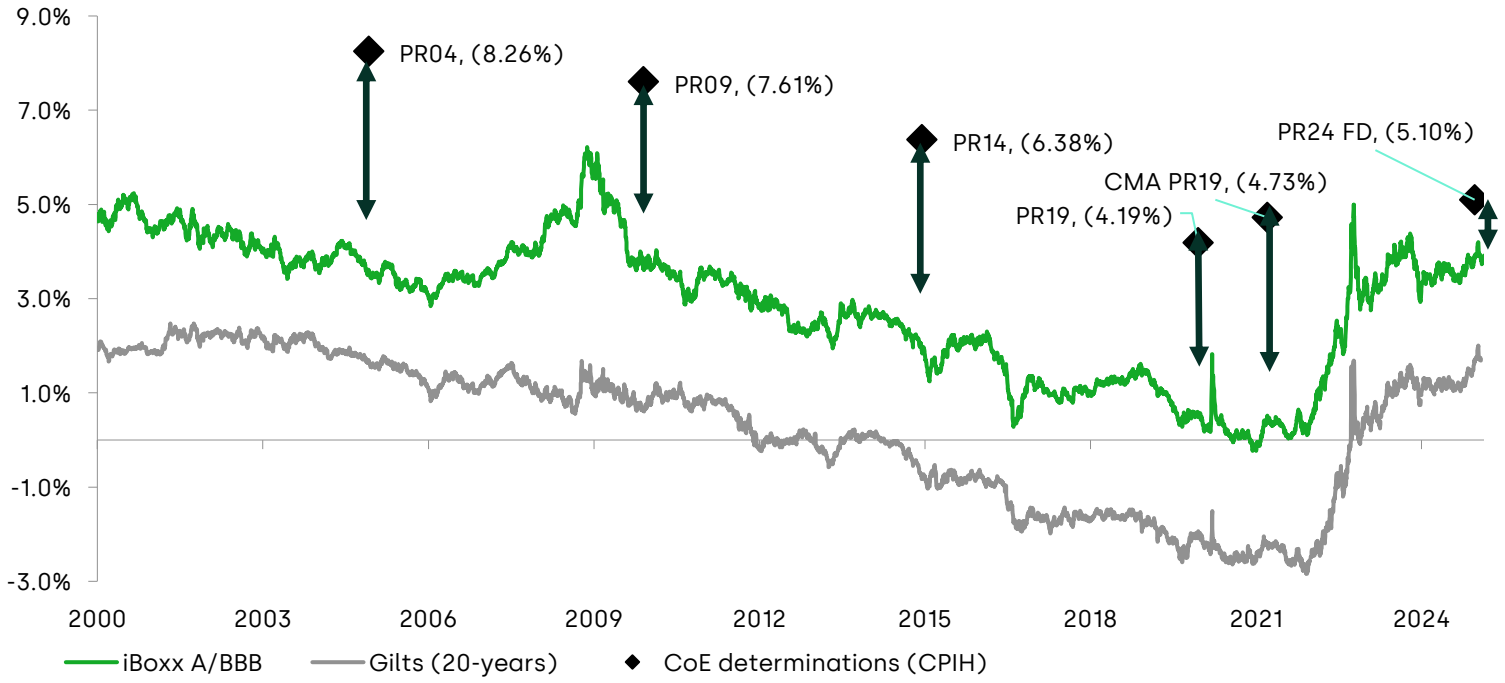
While required equity returns cannot be observed directly, the cost of equity should always be higher than the cost of debt, reflecting the higher level of risk borne by equity as opposed to debt investors. Considering this, debt yields (which are observable) can be helpful in informing estimates of required equity returns (by providing estimates of the lower bound for the cost of equity).

In the case of the water sector, the spread between the return on equity within Ofwat's allowance and observable debt yields has narrowed significantly. Figure 4.5 illustrates the narrowing of this spread (black arrows) over time—it is not sufficient for this spread to simply be positive, rather it must be sufficiently positive in order to incentive equity investors to take on equity risk over debt risk. As this spread has

[75] Moreover, these three companies (Severn Trent, South West Water and United Utilities) were the only three companies to be placed in the top category (and therefore fast-tracked) at PR19. See Ofwat PR19 Initial Assessment of Plans.

narrowed considerably in the PR24 final determinations, it is therefore highly unlikely that the marginal investor would opt to inject equity.

Figure 4.5 Spreads of cost of equity determinations relative to selected cost of debt benchmarks (CPIH-real)



Note: iBoxx yields deflated to CPIH-real terms assuming 2% long-run inflation. Historical RPI-real determinations have been converted to CPIH-real using the long–term wedge as stated by the Office for Budget Responsibility (OBR). We have reflected the changes in the long-term wedges over time. The respective wedges used for PR04, PR09 and PR14 are 0.49%, 0.49%, and 0.69%, respectively. For the years before the Bank of England started targeting CPI, we use the 2.5% RPI target. Figures in parentheses indicate the cost of equity.
Source: Oxera analysis.

4.4.2 Recommendations

We recommend that in setting allowed returns:

- **There should be more emphasis on market cross-checks.**[76] Market cross-checks should be a fundamental step to cross-checking CAPM based estimates of the cost of equity, particularly in periods when capital markets have moved considerably from one price review to the next. Cross-checks can assess the sufficiency of the proposed regulatory WACC allowance and should therefore not be overlooked. In future, this should include reference to returns on competitive assets (e.g. DPC projects), albeit this will require an understanding of differences in risk.

- More broadly however, **it is imperative that the CAPM is not mechanistically relied upon by Ofwat in estimating the required level of returns.** As the level of investment, and equity capital needed, changes through time, ensuring investability means that the output of the CAPM must be (i) sufficiently sense-checked (whether using market-based cross-checks or CAPM alternatives), and (ii) sufficiently reflective of external circumstances and future requirements. This latter point is especially key given that the CAPM is built on only historical data and is therefore not forward-looking. This may also warrant an exploration of the future viability of the CAPM as the key method of estimating the allowed cost of equity.

- Where changes in parameters are observable, **the estimate could be indexed** to prevent fluctuations from market movements that are outside the sector's control. This approach has already been applied for the cost of new debt.

4.5 Principle 5: the regulatory framework should account for actual investor preferences, rather than considering investors in the abstract

4.5.1 Problem diagnosis

A key part of an investability test in the context of a price control settlement is that it must provide a profile of expected returns on equity which investors are willing to accept.

[76] Ofwat placed only limited weight on cross-checks at PR24 including evidence on market-to-asset ratios and a review of selected equity analyst reports. Ofwat did not disregard debt-based cross-checks (implying a risk premium of the cost of equity over selected debt benchmarks) but concluded that these checks did not raise a concern over the level of allowed return on equity. By comparison, there are multiple alternative cross-checks that suggest the allowed return on equity is below the level required by the market to make the water sector a competitive investment opportunity.

Traditionally, regulators have assumed that by setting an allowed return that reflects investors' exposure to systematic risk, equity investment will always be forthcoming. This is based on the Modigliani-Miller dividend irrelevance theorem, which postulates that the value of a firm is determined solely by its earning power and the risk of its underlying assets, not by how it distributes its earnings between dividends and retained earnings.[77]

This simplification is just one example of Ofwat's tendency to treat investors in the abstract, without fully taking into account important practicalities. Abstractions underpinning Ofwat's current approach to price reviews include:

- The assumption of a notional company;
- The assumption that investors are indifferent between dividend payments and capital gains;
- The assumption that the profile of earnings does not matter.

The notional company

Ofwat's interpretation of its consumer and financing duties has been that its price settlements should be financeable for a notional company: that is, a company which performs in line with regulatory targets and allowances and adopts the assumed notional structure should be financeable under Ofwat's proposed determinations.

It is difficult to derive a notional company due to the inherently hypothetical nature of this concept. There could be various factors which influence a company's appropriate capital structure and its ability to perform in line with regulatory targets—for example, geographical differences, demographic differences in consumer base, the scale and profiling of its capital programme, regional wage disparities and other real-world, company-specific differences which makes defining a notional company an imprecise exercise.

Moreover, defining a notional company gearing level can create artificial barriers or expectations for companies. For example while for PR19 the notional gearing level was 60%, at PR24 this was set to 55%. This is just one example of how assumptions about the notional company can easily shift from one price review to the next, without complete consideration of real-world practicalities. It is notable that

[77] Oxera (2024), 'Investability in PR24', box 3.1, pg. 24., 27 August, accessed: https://www.oxera.com/wp-content/uploads/2024/08/Investability-at-PR24-1.pdf.

actual sector gearing over 2020-25 was 68%—significantly different from the 60% notional gearing assumed in PR19 and even higher than Ofwat's assumption of 55% for PR24. Water sector investors have expressed concerns around arbitrary changes to notional gearing, as well as unintended consequences from dividend lock-up mechanisms.[78]

Dividend preferences

Investors can receive a return through dividends or through capital gains. Dividends are cash flows deriving from the distribution of profits by a company to its shareholders at any specific point in time. Capital gains are defined as the appreciation over time of the original investment.

As noted earlier, 'Dividend Irrelevance Theory'—proposed by Modigliani and Miller in 1961—argues that investors should be indifferent between dividend payments and capital gains. In practice however, many investors prefer dividends over capital gains for assorted reasons, including different taxation between dividends/capital gains and heterogeneity of investors (including income requirements/risk tolerances). This phenomenon is known as the 'clientele effect.'[79]

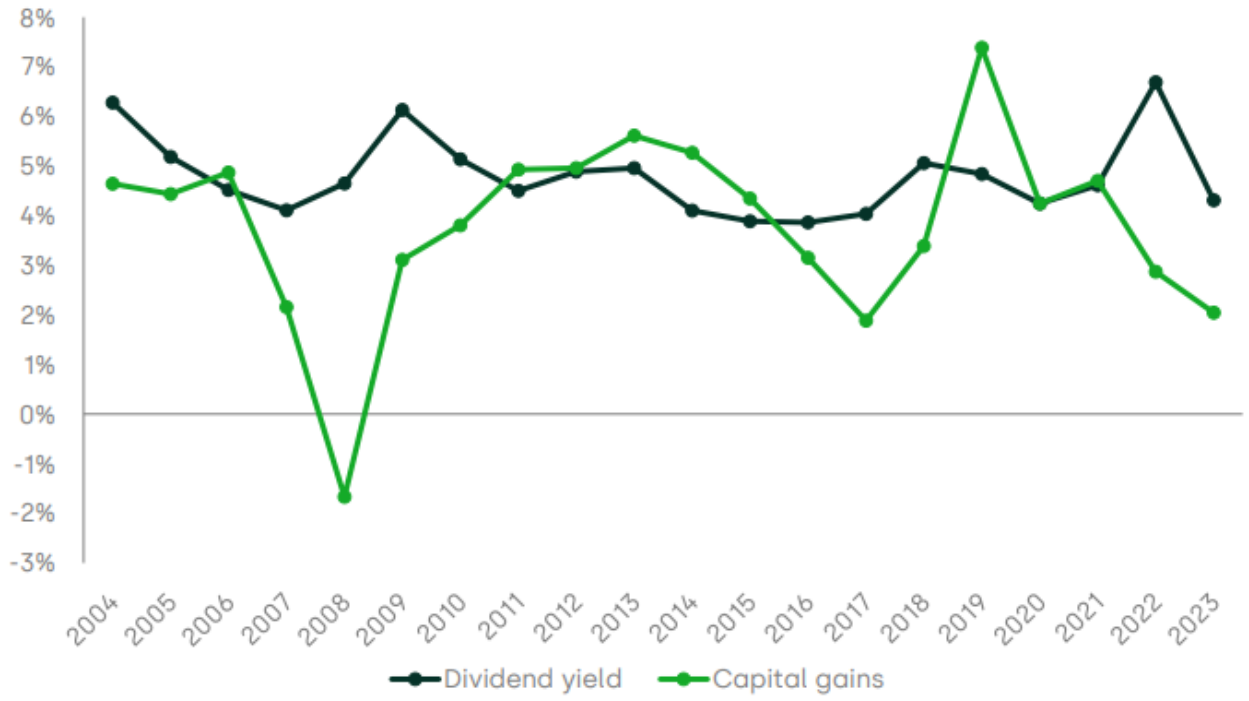
Extensive academic literature discussed in our 2024 Investability Report suggest that clientele effects are present in the utility sector. Investors are driven by the dividends offered by regulated companies and companies respond to this desire for dividends by stabilising them as much as possible. For example, Severn Trent raised £1bn in September 2023 through an equity placement. The absolute value of the cash dividends was maintained throughout, even though reducing the dividends would have reduced the equity injection needed to finance the increased spend. In effect, Severn Trent recognised the trade-off between raising new equity and reducing dividends, preferring to raise more equity to keep dividend payments stable.

The fact that utility sector investors have historically placed a larger focus on dividend payments than on capital gains means **dividend expectations are a crucial component of a shareholder's assessment of the value of the company and the wider investment proposition.** This results in 'dividend persistence', which can be seen in Figure 4.6 below—this shows the composition of returns earned by shareholders over time

[78] Oxera (2024), 'PR24 Investor Engagement Report', prepared for Water UK, October.
[79] Oxera (2024), 'Investability in PR24', box 4.1, pg. 43., 27 August, accessed: https://www.oxera.com/wp-content/uploads/2024/08/Investability-at-PR24-1.pdf.

in three publicly listed water companies in the UK (Severn Trent, United Utilities, and Pennon).

Figure 4.6 Dividend yield vs capital gains spread for UK listed water companies



Source: Oxera analysis based on Bloomberg data. Share buybacks are treated as capital gains. The annualised capital gains are calculated assuming a ten-year holding period.

Earnings profile

The preference for maintaining sustainable dividends also highlights the importance of stability in a company's earnings profile. This refers to the pattern and predictability of a company's earnings over time, including how stable, volatile, or cyclical those earnings are. For regulated companies, this is not always straightforward. Unlike unregulated businesses, the revenues and profits of a regulated business, including in the water sector, are influenced by regulatory mechanisms such as end of period true-ups, ex post reconciliation adjustments, and incentive payments, many of which occur with a period of time lag.

The earnings profile of a company underpins the ability to sustain dividends and attract equity financing at reasonable cost. If a company has a predictable and robust earnings trajectory, it is more likely to attract investors looking for dividend payments. This underlines the

importance of carefully considering how regulatory design and timing affect earnings stability when assessing financial resilience and dividend capacity.

In addition, ensuring earnings growth aligns with asset growth makes investment in the sector as attractive as opportunities in other comparable markets. This helps shape the type of investors who engage with the water sector: income-seeking investors who prioritise stable and predictable dividends.

4.5.2 Recommendations

At present, within Ofwat's regulatory framework, there is a tendency to treat investors in the abstract, without fully considering market realities. Ofwat needs to consider several key points in designing an investability test in order to provide a profile of expected returns on equity which investors are willing to accept.

- Notional company assumptions should be set with respect to investor requirements and be achievable, reflecting real-world scenarios.
- There should be clear requirements to provide clarity around the long-term dividend policy for the sector and required earnings and cashflow profiles, setting this based on timely and up-to-date market evidence. This requires an acknowledgement of the clientele effect, investor interests, income levels, and behaviours when considering both the level of returns and the subsequent dividend policy.[80]
- Ofwat should commit to ensuring an attractive earnings/equity return profile for investors that reflects forward-looking, rather than purely backward-looking considerations

As an example, the GB energy regulator (Ofgem) in its RIIO-3 methodology stated: *'we are open-minded to the requirements of investors, and we do see the potential benefit in considering issues such as the dividend preferences of investors in the utilities sectors (who often have underlying income requirements).'*[81] Ofgem honours this statement by working with stakeholders to identify an appropriate dividend yield assumption. This willingness to explore the implications of

[80] Miller, M.H. and Modigliani, F. (1961), 'Dividend Policy, Growth, and the Valuation of Shares', *The Journal of Business*, **34**:4, pp. 411–433.
[81] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – Finance Annex', July, para. 3.282, pg. 111.

investor preferences for price control policy provides a useful precedent which should be incorporated into Ofwat's investability assessment.

C. Long-term, forward-looking, and evidence-based assessment of financeability from equity and debt perspectives

4.6 Principle 6: the regulatory framework should allow for a meaningful long-term assessment of financeability, from equity and debt perspectives

4.6.1 Problem diagnosis

Ofwat undertakes an explicit financeability test to ensure that companies are 'able (in particular, by securing reasonable returns on their capital) to finance the proper carrying out of [their] functions'. The intention is to assess whether the proposed price control package would allow a company (with the notional capital structure and performing in line with regulatory allowances/targets) to maintain an investment-grade rating.

The financeability assessment conducted by Ofwat does not constitute an assessment of whether the price control itself is investable: rather, it ensures only that a set of credit ratio thresholds are met under notional assumptions.

Specifically, it rests on assumptions around the willingness of investors to inject equity into the sector, and is largely focused on cash flows and equity requirements within the confines of the five-year time frame of the control period.

A key component of the financeability assessment is defining the notional company and making assumptions about investors. The basis of the financeability assessment is then to determine if the notionally-efficient company would be able to meet its target financial metrics (including retaining an investment grade credit rating). However—as noted above—the notional company is difficult to define in practice.

Ofwat assumes that a notionally efficient company will always perform in line with regulatory parameters contained in the price settlement, such that there is no out-performance or under-performance that needs to be factored into the assessment. However, it is not appropriate to then read this across to the real-world, actual company, given that all companies in practice are likely to incur at least some net penalties or rewards in any given control period, due both to factors within and outside of management control.

Additionally, these assessments are more focused on debt financeability than equity financeability. Ofwat's assessment does include modelling of equity injections, dividend yield and capital growth—but these equity assumptions are not checked for reasonableness. For example, at PR24 Ofwat's DD assumed that in order to maintain gearing close to the notional value, the dividend yield for all companies could be reduced from 4% to 2%.[82] In response to Oxera analysis showing that this assumption was unsupported by market evidence, Ofwat ultimately changed the assumed dividend yield back to 4% at final determinations stage.[83] However, Ofwat's remedy for this change at final determinations stage was to assume that a larger gross equity injection would be forthcoming. As far as we can tell, Ofwat undertook no additional analysis to substantiate this new assumption.[84]

Financeability assessments were initially intended to provide a cross-check of whether the overall price settlement generated sufficient short-term cash flows. However, the assessments now appear to be used to calibrate regulatory parameters to achieve specific financial ratios.[85] The example above shows how Ofwat can calibrate the assessment to achieve a certain outcome, rather than to use the assessment to understand whether companies will be financially resilient and able to attract and retain equity capital under the proposed regulatory settlement.

4.6.2 Recommendations

Ofwat's approach to assessing financeability, which currently is largely debt-focused for a single AMP, needs to be revised to incorporate a longer-term approach, looking at credit profiles over multiple AMPs. It needs to be integrated with investability, so any assumptions around changes to equity levels are realistic.

There are three key elements of this:

- First, the financeability assessment should be grounded in a longer-term perspective that aligns with companies' Long-Term Delivery Strategies. In this context, the key question is not just whether companies appear financeable in the near term, but

[82] Oxera (2024), 'Investability in PR24',, 27 August, p. 43..
[83] Ofwat (2024), 'PR24 Final Determinations: aligning risk and return appendix,' December 2024, p. 65.
[84] Assumptions around equity issuance costs are also important. Ofwat moved on this at final determination stage, but still used a smaller value than indicated by our evidence.
[85] For example, at draft determinations stage, companies with financial headroom had their RCV run off rates reduced in order to reduce bill pressures. This is an example of the financeability assessment becoming an input into the price review, rather than a sense-check of the outcome.

whether the regulatory framework provides sufficient confidence and headroom to sustain access to finance throughout the delivery of long-term outcomes.

- Second, both debt and equity perspectives need to be considered. Assumptions around notional gearing, dividend yields or assumed equity injections should be evidence-based, taking into account investor preferences.
- Third, financeability assessments should stress test regulatory assumptions based on an understanding of company business models and risks to better understand threats to financial resilience.

Additional guardrails around capital structure may be needed to ensure companies have sufficient equity buffers in the context of a substantial sector-wide investment programme. Companies' decisions around capital structure can weaken financial resilience and it is important that this is resolved to ensure long-term financial sustainability.

5 Conclusions and recommendations

Ofwat has a primary duty to ensure that companies can finance their activities—which clearly includes the ability to access external equity capital where needed—in addition to its general and primary duties to promote the interests of future consumers and promote resilience. Given the step change in investment requirements facing the sector, Ofwat needs to prioritise investability as a matter of urgency.

Evidence suggests that Ofwat's regulatory framework is insufficiently supportive of investment in the long term, and that more could be done to make the sector attractive to equity investors. Given the consumer benefits from delivery of required investment and ongoing asset health, investability is also in consumers' interest.

In this report, we have sought to articulate a set of principles and clear associated recommendations that—if implemented—would contribute to a more investable sector. These principles and associated recommendations can be found in the table below.

The outcomes these principles are designed to ensure, which address demonstrated shortcomings in the current approach, are essential, as if companies are unable to secure the capital needed to finance long-term infrastructure programmes at the cost of capital allowed by Ofwat, planned investment will either not be delivered or delivered at higher cost than necessary (driven by a higher cost of capital). This would have significant negative long-term impacts on present day and future consumers.

	Guiding principles	Recommendations
Clear long-term policy and regulatory framing to assess the long-term consumer interest	*Principle 1:* Firm commitment to promoting investment and securing investability, through aligned policy and regulatory signalling.	• We recommend that government recognises the investability challenge through amendment of Ofwat's statutory duties (e.g. a streamlined set of duties, with investability as a central component of the finance duty) and by providing guidance on how Ofwat should prioritise investment within the strategic policy statement. • The government should consider setting firm and measurable regulatory requirements around promoting investment through periodic strategic policy statement updates. For example, Ofwat could be required to set out a pathway to re-securing its previous AAA/Aaa score for regulatory stability and predictability. • Ofwat should create an explicit investability framework, articulating how investability will be applied in practice, to provide sufficient certainty to companies and their investors to allow long-term planning and capital commitment. This should include clearer definition over the current and future use of financial levers to balance between various goals, to seek to provide greater certainty for investors.

Well calibrated and consistent operational regime with consistent and adequate risk/return profile	*Principle 2:* A well calibrated risk-reward profile for a sector undergoing a significant long-term enhancement programme.	• Companies must be provided with a balanced risk package with an appropriate level of regulatory risk exposure reflecting the investment requirements of the sector. This must provide investors with a 'fair bet'. Potential options include the following.
		  • Reducing exposure to service performance and cost risk via adjustments to cost sharing rates (to reflect the higher uncertainty around cost estimates) and outcome delivery incentive rates, in order to better align risk exposure to the allowed cost of capital.
		  • Moderating the level of return at risk to ensure that it is proportionate to the equity returns on offer and the maximum loss which companies can incur is smaller than the base equity return provided by Ofwat's cost of capital allowance. This could be achieved via adjustments to the existing aggregate sharing mechanisms (or the introduction of a new mechanism).

Guiding principles	Recommendations
	• Providing greater protection for companies against service performance risks and changes in circumstances, which lie outside of their control.
Principle 3: A long-term approach to expenditure and performance, including assessment of long-term infrastructure resilience needs.	• The price review framework should take greater account of long-term requirements of the sector (in terms of future infrastructure needs, consumer needs, and environmental needs), price paths, and performance trajectories, rather than focusing solely on distinct five-year price controls. This should aim to provide greater transparency over long-term trade-offs and challenges. • This should include longer-term modelling of expenditure requirements (e.g. through greater use of long-term delivery strategy submissions) and financeability, and a long-term approach to asset health funding. Ofwat should also consider multi-AMP glide paths for key performance targets and multi-AMP cost allowances, where beneficial. • A new framework is needed to give companies and investors confidence that efficient increases in asset maintenance investment will be funded in future control periods, including enhanced regulatory measurement of asset health. Ofwat should consider removing capital maintenance from the base cost models. • Investors require confidence in their exposure to historical asset deficits and should not be required to fund shortfalls that are the result of historical regulatory decisions.
Principle 4: Fair and competitive sector returns.	• Allowed returns should be assessed in a more robust manner, considering a more comprehensive range of evidence to estimate required market returns and ensure these are globally competitive, reflecting current market conditions. This includes non-mechanistic reliance on the capital asset price model (CAPM), at a minimum by consistently performing a full suite of cross-checks based on market evidence. • Components of the allowed return which are directly observable could be indexed to reduce the impact of deviations due to market movements outside of the sector's control.

	Guiding principles	Recommendations
Long-term, forward-looking, and evidence-based assessment of financeability from equity and debt perspectives	*Principle 5:* Actual investor preferences accounted for, rather than considering investors in the abstract.	• Notional company assumptions should be set with respect to investor requirements and be achievable, reflecting real-world scenarios. • There should be clear requirements to provide clarity around the long-term dividend policy for the sector and required earnings and cashflow profiles, setting this based on timely and up-to-date market evidence and on a forward-looking basis.
	Principle 6: Meaningful long-term assessment of financeability from equity and debt investor perspectives.	• Ofwat's approach to assessing financeability, which currently is largely debt-focused for a single AMP, needs to be revised to incorporate a longer-term approach, looking at credit profiles over multiple AMPs, and integrated with investability, so any assumptions around changes to equity levels are realistic. • In particular, we recommend that long-term delivery strategy forecasts are taken into account in each price review, particularly when considering the use of 'equity solutions' and the setting of notional gearing and dividends.

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