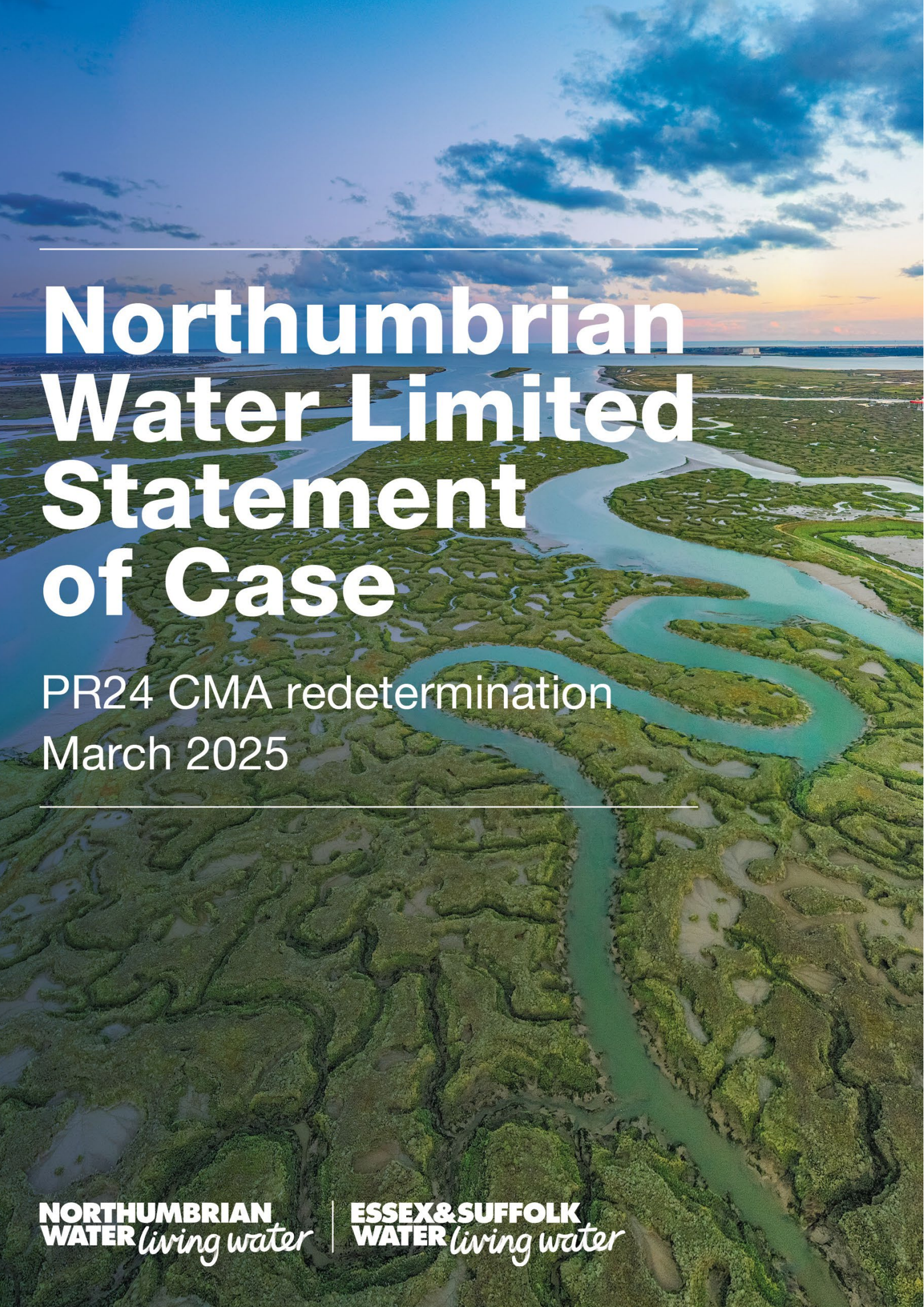

Northumbrian Water Limited Statement of Case

PR24 CMA redetermination
March 2025

NORTHUMBRIAN WATER *living water* | ESSEX&SUFFOLK WATER *living water*

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FOREWORD FROM HEIDI MOTTRAM, CEO OF NORTHUMBRIAN WATER

As CEO of Northumbrian Water since 2010, I am proud to be part of a company that is truly committed to its vision of being the national leader in the provision of sustainable water and wastewater services for its customers.

Northumbrian Water is a purpose-led business. That purpose is to care for the essential needs of the communities we serve and the wider environment both now and for future generations. This drives everything we do, and our teams work hard to deliver exceptional service for our customers, often in very challenging conditions.

For many years we have set ourselves the ambitious goal of being industry leading across all aspects of our business activities, a goal that galvanizes everyone in the company. Although we may not always fully reach that goal, we are consistently one of the highest performers in the industry. We are particularly proud of our levels of customer service and environmental stewardship. Because of our track record we find that our customers continue to place their trust in us, even as trust levels across the water sector fall.

Customers, stakeholders and our communities want us to continue to improve. We talked regularly to our customers throughout the PR24 process, and we consistently found that they take a long-term view, as well as looking for good service and affordable bills today. With that in mind we developed our most ambitious business plan ever for 2025-30. That plan recognised that we need to move faster to address public concerns and committed us to achieving the lowest number of average spills from combined sewer overflows in the sector by 2030,[1] as well as promising our largest investment programme ever to improve services further and meet new legal requirements.

We began our business planning by considering carefully the needs of the business over the next 25 years[2] and examining different future scenarios, pressures and opportunities that we would face. Our final business plan was thoughtfully calibrated to maintain, and where necessary improve, the operational resilience of our infrastructure to deliver against our legal obligations and meet these challenges. We tested those plans carefully with customers and our Water Forum (Independent Challenge Group). Three quarters of the customers we spoke to accepted the investment package in our business plan. We were pleased Ofwat recognised that it was a quality plan with some of the most ambitious service targets offered by any company.

Having worked hard to submit a well-documented and evidenced plan to Ofwat, we provided focused and clear feedback following the draft determinations, emphasising the importance of asset health, climate change resilience and financeability for both our customers and the company. We did this in direct meetings with Ofwat, with members of the Ofwat board and in written correspondence. Despite raising our concerns during the process, Ofwat's final determination of our plan does not provide adequate funding for the investments in asset health and resilience that we know are necessary to protect our customers and our ability to deliver sustainable services. Our large investment programme to meet the new and enhanced statutory obligations, which will also drive substantial economic growth in our operating areas, has been otherwise largely

[1] Following accelerated investment, we are pleased to have reduced spills in 2024 despite higher rainfall. We expect to be only one of a small number of companies to have achieved that. Our business plan (NES01 - Living Water: Our Plan 2025-2030 and Beyond (**BP24**), October 2023, SOC014) committed to reducing average spill numbers per storm overflow to 17 (16.61) by 2030 (see BP24, pg.47 - Table 4, SOC014). In our response to the Draft Determination (see NES80 - NWL Response to Ofwat DD24 (**NWL DDR**), August 2024, Section 8.9, SOC191), once we had seen other company plans, we committed to reducing spills to 14 average spills by 2030, seeking to match the most ambitious plans in the sector.
[2] NES_LTDS3 - Shaping Our Future: Developing Our Long-term Strategy 2025-2050 (**BP24 Shaping Our Future 25-50**), June 2023, SOC102.

accepted by Ofwat but delivery will only be possible with a significant injection of private capital. Risk in the sector is clearly increasing, and yet Ofwat has set an allowed equity return that suggests the opposite is true. It does not make any sense for an investor to offer to provide equity to water companies when the return offered is so close to the returns available on less risky corporate bonds. As a result, and following careful consideration, the Board were unanimous in concluding that the final determination is in not in the long-term interests of our customers and stakeholders.

We recognise that if our proposals are accepted by the CMA, our bills will rise. We have quadrupled our support for customers struggling to pay their bills and will continue to offer one of the largest packages of support in the sector funded by our shareholders. We are committed to eradicating water poverty and remain confident that we can do that under any outcome of this process. If we are successful in our redetermination, we believe that, even with adjustments for the issues we raise, our average bills will continue to be the lowest in the country.

Shortly after we informed Ofwat of our decision to refer the final determination to the CMA, the Government's own Independent Water Commission issued its call for evidence highlighting the same concerns that we are raising here. We welcome that call, but we cannot wait for that review to deliver change - any delay would be detrimental to customers and the environment given the challenges. We are fully committed to getting on with our investment plan, and to delivering improvements for our customers and the environment, and there will be no delay to the plan whilst the CMA panel is considering these issues.

When we talk to our operational teams, they tell us that asset health and storm resilience are their top concerns. Every day they work tirelessly to provide our essential services against a backdrop where the ageing asset base is failing on a more frequent basis despite us investing our allowances in full. This is why we have worked hard for a decade to provide evidence to regulators that the framework is not delivering the base level of investment needed. Many voices are saying the same – water companies, the National Infrastructure Commission and previous CMA panels. All have asked Ofwat to amend its regulatory architecture to better recognise these issues. Unfortunately, little progress has been made over several years and there have been numerous false starts. Our request to the CMA would enable us to address these asset health and climate change risks directly, protecting and improving services for our customers.

In summary, we ask the CMA to take a fresh look at these issues and provide us with a determination that better recognises and reflects the real challenges we are facing, setting us up for success over the long term.

1 EXECUTIVE SUMMARY

1.1 BACKGROUND TO THE SUBMISSION

1. On 19 December 2024 Ofwat published its Final Determination (**FD24**)[3] for Northumbrian Water Limited (**NWL**).[4] FD24 set out Ofwat's decision with respect to our price controls for the period 2025-2030 (also referred to as **AMP8**) following the conclusion of the Price Review (**PR19**).

2. On 18 February 2025 we formally rejected FD24 and requested Ofwat to refer it to the Competition and Markets Authority (**CMA**) for redetermination[5] in accordance with the procedures under the Water Industry Act 1991 (**WIA**), our Licence,[6] the CMA's Rules of Procedure (**CMA Rules**)[7] and Guide to Water References (**CMA Guide**).[8] Ofwat referred our FD24 to the CMA on 18 March 2025 (**Notice of Reference**).[9]

3. This document is our Statement of Case (**SoC**) and sets out our position on the key issues that we request the CMA to consider as part of our redetermination. The purpose of our SoC is to provide the CMA with the background and evidence that it requires to carry out its redetermination, on the merits, in accordance with the principles and duties that apply to Ofwat.[10]

1.2 WE ARE A PURPOSE LED BUSINESS

4. We are proud to be one of the top performing water and sewerage companies in the UK (see Section 2.4) which has some of the best water and sanitation systems in the world (see Section 3.2). However, we know that the public narrative does not reflect this and there is urgent need to make significant investments to help renew ageing infrastructure and protect against more frequent extreme climate events. So, while we are one of the most trusted water companies in England and Wales (see Section 2.2), we can't be complacent and are committed to further strengthening customer trust which is at the heart of our purpose. When we developed our business plan for PR24 (**BP24**) we wanted it to be firmly based on a relationship of trust. 74% of our customers accepted our plan.[11]

5. As detailed in Section 2.6, we have worked hard to develop a plan that would enable us to meet the significant new environmental and other standards that Parliament and Regulators were seeking from us. We worked with partners across our region to try to find innovative 'nature based' solutions to deliver the best outcomes for the environment[12] at the lowest cost to customers. We engaged extensively with our customers and stakeholders to understand their

[3] Ofwat, Overview of Northumbrian Water's PR24 final determination (**FD24 NWL**), 19 December 2024, SOC311.
[4] NWL is a company registered in England and Wales. NWL is a wholly-owned subsidiary of Northumbrian Water Group Limited (**NWGL**), a company registered in England and Wales and is a member of Northumbrian Water Group (**NWG**). In Ofwat communications the abbreviation **NES** is commonly used to refer to NWL's two operating areas: Northumbrian Water and Essex & Suffolk Water (see Section 2.1).
[5] NES - NWL Letter to Ofwat: Final Determination for Northumbrian Water Limited (**NWL FD24 Response Letter**), 18 February 2025, SOC283.
[6] Northumbrian – Water & Sewerage Undertaker – Appointment (**NWL Licence 12.02.2024**), 12 February 2024, SOC256.
[7] CMA, Water References: Competition and Markets Authority Rules, CMA204 (**CMA Rules**), 10 December 2024.
[8] CMA, Water References: Competition and Markets Authority Guide, CMA205 (**CMA Guide**), 10 December 2024.
[9] Ofwat, Reference of the PR24 Final Determinations: Notification of reference for Northumbrian Water (**Notice of Reference for NWL**), 18 March 2025, SOC404.
[10] CMA Rules, para. 5.5.
[11] See: NES50 - BP24, Appendix A7-09, NWL Acceptability and Affordability Testing: Quantitative Research Report (**BP24 Appendix A7-09 Affordability Quantitative Report**), August 2023, SOC059.
[12] For example, our original proposals to meet Nutrient Neutrality and Phosphorus requirements involved nature based solutions and partnership working at significantly lower cost. See: BP24, pg.19, SOC014.

views and preferences and reflect them in our plan. For example, we committed to delivering stretching service improvements in areas that they told us matter most and we engaged with our customers to understand what level of risk they were willing to take in relation to resilience issues and asset risk. We were also very mindful of the cost-of-living challenges that our customers face. In the North-East, we already have the lowest combined bills in the country,[13] and we proposed the lowest bill increase of any water and sewerage company (**WaSC**)[14] with a four-fold increase in support for customers and a £20m contribution directly from our shareholders.[15]

6. Ofwat's 'Quality and Ambition Assessment' (**QAA**) judged the quality of business plans and penalised those which it found to contain insufficient ambition or stretch.[16] Ofwat concluded that our business plan met expectations and showed a reasonable level of ambition.[17] This is reflected in FD24 which set efficiency and performance targets very similar to what we proposed in the round. Ofwat also supported the vast majority of the investment proposed in BP24. Indeed, we consider that properly applied, the QAA methodology would demonstrate that our plan was one of the most ambitious in the sector (see Section 2.6.6).

1.3 WE ARE ALREADY GETTING ON WITH DELIVERING OUR PLAN

7. Having previously sought a redetermination from the CMA at PR19, we understand the risk that this process can distract from the important business of delivering over AMP8. Similarly, we recognise that the scrutiny the sector is facing through the various ongoing reviews and the change that could bring about, or the impact of new legislation or evolving regulatory standards, might raise concerns that the important activities contained in our plan could be delayed (see Section 3.4). That is not the case.

8. We have already started to deliver the investments in our plan – including all of our planned environmental programme. Indeed, in the last two years of AMP7, with the support of our shareholders, we will have accelerated c.£60m of that investment programme.[18] We have also completely amended the delivery frameworks we have in place and widened our supply chain to build capacity.[19] We are committed to keeping at least 60% of our spending in our regions. Whilst we note there is currently an underspend on FD19 enhancements for 2020-24, we anticipate an overall AMP7 enhancement overspend once the projected large investment in 24-25[20] is included.

9. We are beginning to see the positive outcomes from that early work and in 2023 the average number of spills from storm overflows reduced by some 13% from the previous year.[21] Indeed, we expect our 2024 spill numbers to be among the lowest levels in the sector. Although we recognise that there is much more to do, we are already making

[13] North East combined bills: https://www.discoverwater.co.uk/annual-bill.
[14] See: key-facts-and-data-from-water-company-plans/#bills, two water only companies proposed lower increases.
[15] BP24, pg.34, SOC014. Note – this contribution is not from the NWL allowed revenue nor added to RCV.
[16] Ofwat, PR24 Final Methodology – Appendix 12 Quality and ambition assessment (**FM24 Appendix 12 QAA**), December 2022, SOC295.
[17] Ofwat, PR24 final determinations: Quality and ambition assessment summary (**FD24 QAA Summary**), December 2024, SOC305.
[18] Northumbrian Water Limited, Annual Performance Report for year ended 31 March 2024 (**NWL APR 23-24**), 2024, Tables 4L & 4M - accelerated & transition spending, SOC259; and NWL forecast for APR 24-25 (to be published July 2025).
[19] See: https://www.nwg.co.uk/news-and-media/news-releases/northumbrian-water-builds-for-amp8-and-beyond-with-largest-ever-contractual-commitment/.
[20] See NES - NWL Response to Ofwat DD24, BP24 Tables Version 7, DD Response (**NWL DDR BP Tables V7**), August 2024, sheets CW3 and CWWW3 24/25 totex forecast, SOC235; Full calculations in NES - SOC: Enhancement totex for AMP7, Enhancement totex actual v FD (**NWL SOC Enhancement Totex for AMP7**), 2025, SOC618.
[21] See: Environment Agency, EDM Storm Overflow Annual Return Summary Reporting 2023 (**EA Storm Overflows Data 2023**), 27 March 2024, SOC476. For 2024, NWL Provisional Annual Performance (pre-EA check), expected release by EA end March 2025 as per this link: https://environment.data.gov.uk/dataset/21e15f12-0df8-4bfc-b763-45226c16a8ac.

progress at addressing the public's concerns. We will continue to do that, seeking to bring about improvements for customers and reduce spills to the environment as rapidly as possible.

1.4 WHY WE HAVE SOUGHT A REDETERMINATION

10. We recognise that the CMA panel is being asked to consider our case, alongside five other companies, at a particularly challenging and uncertain time for the sector:

- no water company has been able to deliver the very stretching settlement set by Ofwat at PR19 which now appears to have been incorrectly calibrated, with many unable to earn their base allowed return. This has damaged investor confidence in the sector and the regime precisely when we need significantly more investment;
- there is significant public concern about the sector and declining levels of public trust overall, driven in large part by concerns around the number and volume of sewage spills to the environment from combined sewer overflows (**CSOs**) and negative media coverage of the sector, including suggestions of illegality; and
- as a result of this there are a number of external policy reviews of the sector underway, including the Independent Water Commission review.[22]

11. Whilst we anticipate that the broader reviews will take a close look at the macro issues impacting the sector, including addressing concerns with respect to the overarching regulatory framework, the outcome of these processes will impact the future – PR29 and beyond. In the meantime, it remains important to ensure that we have the right package for PR24 that will enable us to deliver an appropriate and reliable level of service during AMP8, whilst investing in sustainable services for the future.

12. There are three key areas where Ofwat has not made the right decision for customers in the long term in FD24: investment in asset risk management; investment in resilience; and ensuring our overall plan is investable. We highlighted these issues to Ofwat following the Draft Determination (**DD24**) in our formal representations (**DDR**),[23] in written correspondence[24] and directly in face-to-face meetings with members of Ofwat's Board.[25] These matters have not been adequately addressed in FD24.

13. Given the materiality and urgency of some of these issues, the Board unanimously concluded that we could not accept the FD24 and must refer it to the CMA for redetermination. We believe that the CMA, as an independent and expert economic regulator, is well placed to make a decisive impact in a number of key areas that will ensure better outcomes in AMP8 and beyond.

[22] Sir John Cunliffe, speech to launch Call for Evidence for Independent Water Commission (**Cunliffe Speech Feb 2025**), 27 February 2025, SOC480. See also Appendix 1 Section 3.4.2.
[23] NWL DDR, SOC191.
[24] NWL DDR, SOC191.
[25] Formal representations meeting between Ofwat and NWL on 9 September 2024, NES87 - NWL Response to Ofwat DD24, Company Representation Meeting Briefing Note (**NWL DDR Company Representation Note**), 28 August 2024, SOC222.

1.5 AREAS OF FOCUS FOR THE REDETERMINATION

1.5.1 Our approach to the redetermination

14. FD24 is broad and wide-reaching, with many component parts. We recognise that as this is a merits-based redetermination the CMA has jurisdiction to examine all and any aspects of the FD24 settlement, in contrast to the regime for energy appeals.[26] Our approach to prioritisation has sought to assist the CMA in identifying the material areas of concern where, targeted intervention in the context of AMP8 delivery, will lead to better outcomes for customers. In doing so we have sought to reflect the CMA's overriding objective to dispose of determination references fairly, efficiently and at proportionate cost within the specified time periods,[27] taking into account that even with the benefit of an extension to the statutory six month period, the CMA will want to focus the limited time available on the most material issues.

15. In practice we have significant concerns with Ofwat's overall framework for cost assessment in FD24 and consider that it underfunds an appropriate level of investment in asset risk management and operational resilience amongst other issues. We have, however, targeted our SoC in that area on reconsideration of two specific investment cases and a reconsideration of the base allowance adjustment for mains renewals (see Sections 1.5.2 and 1.5.3) rather than asking the CMA to completely redesign the cost assessment framework, recognising that would be impractical in the time available. Similarly, with respect to the need to ensure the right balance of risk in the package overall, we have identified specific interventions that we consider would drive better outcomes in AMP8 (see Section 1.5.4) without requiring material amendments to the regulatory framework itself. Equally, it is fundamentally important that the settlement is investable (see Section 1.5.5) and that the CMA correct unambiguous errors and reflect the latest and best information when making its redetermination (see Section 1.5.6). In several areas we believe that the CMA's interventions can only address the issues with the regulatory framework for the period up to 2030 somewhat imperfectly, given the constraints we have noted. More fundamental reform will be needed in the future, as signalled by the Independent Water Commission. In considering these issues the CMA may wish to provide some commentary on the treatment of these issues in the future as previous CMA panels have chosen to do.

16. At the same time our approach to the redetermination has sought to be balanced and fair in our selection of those issues. Whilst there are many aspects of FD24 that we do not support we are willing to accept them in the round, such that we have not identified them as priority areas for us for redetermination. We provide some observations on these other aspects of FD24 in Appendix 1 Section 1 but needless to say, our requests to the CMA could have been much wider and more numerous. In this SoC and the supporting Appendices we focus on the material issues that would both increase and reduce bills for customers up to 2030 – our requests are not entirely one-sided but speak to the substantive issues identified with FD24.

[26] We recognise the CMA is required to "undertake a full redetermination of the Authority's determination": CMA Guidance, para. 3.5. This contrasts to the regime for appeals in the energy sector which does allow appellants to specify the matters subject to the appeal and notably requires the appellant companies to demonstrate that the statutory grounds for appeal have been satisfied: see for example Electricity Act 1989, s.11C-11H, SOC550.
[27] CMA Rules, para. 4.1. We also note the CMA's overarching commitment to pace, predictability, proportionality and process, and have reflected on that in selecting areas that we consider are deserving of prioritisation in the context of this redetermination.

17. We hope that our identification of areas of focus will support the CMA in delivering an efficient and proportionate redetermination. We are also conscious of the benefit of providing more certainty to our supply chain, delivery partners, local stakeholders, and investors about the delivery of most of our investment programme. This is particularly important for our environmental investment programme, especially where we have worked with partners to develop and deliver parts of this.

18. We do, however, recognise that the CMA may choose to interrogate other aspects of FD24, including but not limited to areas raised by other companies seeking a redetermination.[28] To the extent the CMA opts to take a detailed look at such other issues and its conclusions in that regard may be reflected in our redetermination, we reserve the right to make submissions with respect to such issues as we consider necessary.

1.5.2 We must begin to address the asset health challenges that the sector faces to avoid service disruption and increased cost to customers in the future

19. The first and most important area is **asset risk management**. Maintaining the health of the assets used across our water and sewerage network and systems is a fundamental part of ensuring that we are able to provide these essential services reliably, safely and sustainably. This is addressed in detail in Section 3.

20. Companies are funded to maintain the long-term capability of their assets through base expenditure allowances. Ofwat says that the step up in base at PR24 will give companies "increased expenditure to maintain and improve the health of their asset base, taking into account the impact of climate change over the long-term".[29] Insofar as it relates to the specific base cost allowances derived from Ofwat's econometric models, this is incorrect. The base expenditure allowance is derived from what has been spent in the past and does not adequately reflect the evidence we have for what is needed in the 2025-30 period. Ofwat's increase in allowed base expenditure can be directly attributed to investment in new assets or additional work volumes that must be delivered. In contrast, for other asset types such as treatment works, there is a reduction in the allowances for basic capital maintenance (despite the asset base both growing and ageing considerably).

21. The evidence demonstrates that across the whole water sector, this allowed funding has not been sufficient to keep up with maintenance needs (see Section 4.2.1). To manage this lack of funding, companies have had to rely on short-term fixes, delay investments and overspend against their allowances. Over the past 25 years we have overspent our capital maintenance allowances across water and wastewater by c.£260m (when cost sharing arrangements are reflected) (see Figure 16). Indeed, across the 2020-24 period to date no WaSC has been able to operate within Ofwat's PR19 base cost allowances (see Section 3.3).[30]

22. The sector has been vocal about this challenge, and we have raised it directly with Ofwat on multiple occasions over the last ten years. As one of the best water companies at asset management (by Ofwat's measure – see Section 2.4.3) we have been sector-leading in our efforts to collect information about the condition of our assets

[28] As noted in the CMA Guidance "unlike in an appeal where the appellant determines the maximum scope of the case, the CMA is not limited to assessing only the specific issues raised by the main parties in their Statements of Case": CMA Guidance, para. 3.5.
[29] Ofwat, PR24 final determinations: Our approach (**FD24 Approach**), February 2025, pg.29, SOC303.
[30] Ofwat, Data for the Water Company Performance Report 2023-24 (**WCPR Data 23-24**), 08 October 2024, SOC444: Cumulative Wholesale totex less enhancement. Only SSC has spent less than FD on base.

(across multiple categories) to demonstrate the scale of the problem, show why this investment is needed and, importantly, why it is needed now. This includes surveying all of our assets at treatment works, producing condition reports to show what work is needed and assessing how much this will cost.[31] We have also been proactive in making recommendations about the potential solutions at a sector level.[32]

23. Other independent stakeholders share these concerns.[33] The National Infrastructure Commission (**NIC**)[34] wrote to Ofwat in 2023 to highlight the need for more investment in asset risk management and to direct Ofwat to take a lead on addressing it. In its PR19 redetermination, the CMA also reflected on the challenge and gave Ofwat a strong steer on the need to "enhance its analysis with a forward-looking element" during the last redeterminations five years ago to address this issue in PR24.[35]

24. The opportunity to tackle this properly in PR24 has, however, been missed. This is because Ofwat was not proactive enough ahead of the review in considering alternative models of cost assessment or collecting necessary comparative information across the sector to enable it to properly address the issue in the PR24 process (see Section 4.2.3). More importantly, Ofwat has then been unwilling to fund well evidenced cases by individual companies, such as our asset health investment case for civil structures and service reservoirs (see Section 4.3), in part because of a lack of common comparative information. This outcome is driven by Ofwat's strong desire to maintain comparative assessment through its cost models rather than examine alternative approaches and evidence, and fund activity where it has the company-specific data and evidence to demonstrate the need.

25. Whilst FD24 does helpfully provide some additional funding to replace more water mains (£51m for us)[36] the assumptions as to what the implicit base allowance buys means that we are still underfunded for the rate of mains renewal FD24 expects us to achieve across AMP8 (see Section 4.4).

26. At the same time, the introduction of Price Control Deliverables (**PCD**s) for base expenditure has exacerbated the asset risk management challenges. This is because these PCDs force companies to deliver certain large and poorly calculated volumes of replacements for particular asset types across the portfolio of assets we need to manage before we can access the additional funding. This necessarily forces us to invest in replacing these asset types instead of others where we will need to spend less or requires us to overspend significantly against the allowances. Instead of targeting investment on areas of greatest risk and impact, which is what best practice in asset management would dictate, we must spend a very large proportion of the pot on a small number of relatively less critical asset types under a very prescriptive set of rules (see Section 5.5).

[31] See Sections 2.6.3 for details.
[32] See here: https://www.water.org.uk/investing-future/infrastructure-health
[33] Providing appropriate regulatory funding for capital maintenance activity: ensuring capital sustainability and service resilience, Dr Harry Bush CB and John Earwaker, May 2019 – A paper for Anglian Water's Draft Determination Representation (**Capital Maintenance Bush-Earwaker 2019**), May 2019, SOC386: "Ofwat's approach, in isolation, looks to us to create a significant risk of mis-provision for capital maintenance".
[34] NIC, Letter to Ofwat on water company asset management (**NIC-Ofwat Letter 05.23**), 19 May 2023, SOC430.
[35] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited Price Determinations, Final Determinations (**CMA FD19 Decision**), 17 March 2021, para. 4.293, SOC334. The evolution of the regulatory approach to asset health is considered in detail in Appendix 1 Section 3.
[36] Ofwat, PR24 final determinations: Expenditure allowances (**FD24 Expenditure**), December 2024, pg.40 – Table 4, SOC309.

27. We cannot reasonably muddle through with FD24, which is clearly materially problematic, whilst waiting for the next opportunity to amend Ofwat's cost assessment approach at PR29. We cannot accept deteriorating assets that will mean more failures and more pollution incidents – only to have to replace them at much greater cost to customers when that is left as the only solution. This is not the optimal way for the sector to manage the assets at the heart of the essential services we provide. Nor is it in the best interests of our people and partners who continue to work in difficult conditions with assets which sorely need investment that simply isn't available.

28. Our customers agree and have asked us to address this now. This support was reconfirmed following DD24 and informed the priority we placed on asset health in our DDR. It is also why our investment proposals focused on a prioritised and measured increase in investment in this AMP in those assets where we have the greatest understanding, rather than waiting for a wider change to the cost assessment framework.

29. FD24 does contain a high-level roadmap for Ofwat's approach to asset risk management during AMP8.[37] We will naturally seek to engage constructively with that process but for the reasons we set out in this SoC we are not confident that this will ensure that appropriate steps will be taken to support investment in a timely manner (see Appendix 1 Section 4.8). Nor do we think that it would be appropriate in the context of a redetermination for the CMA to postpone the issue for a later day when we have presented the evidence that enables it to support the investment decisions now. In particular:

- Ofwat's lack of meaningful progress in this area in the past (see para. 24) and the limited interest it has shown in properly engaging with our investment case[38] do not instil confidence that Ofwat's roadmap will deliver meaningful improvement in an important area. Without a fresh perspective this process will just result in another false start. Indeed, if Ofwat was really committed to addressing these challenges in the 2025-30 period then why was the process for potential in-period adjustments set out in the FD24 Roadmap not contained in a formal notified item and why was it not better reflected in the PR24 methodology? At PR19 the CMA panel made clear suggestions to Ofwat to support a better process for PR24, yet we are here five years later raising the same issues. Having already given Ofwat a warning to take action, the CMA's redetermination must ensure that the issue is addressed in the context of AMP8, at least.
- Our early engagement with Ofwat's process, rapidly accelerated ahead of this redetermination, demonstrates that it intends to simply duplicate the approach taken for water mains across different asset groups. It is very clear to us this will not work, and wider and more fundamental reform is needed to the cost assessment framework ahead of PR29. For example, Ofwat could be considering models like the approach taken in energy on Network Asset Risk Metrics (**NARM**s) or the approach taken in Scotland by the Water Industry Commission for Scotland (**WICS**).[39] In both cases the development and implementation of these approaches took several years, even in sectors with fewer companies than ours. We are

[37] Ofwat, PR24 Final determinations: Roadmap for enhancing asset health understanding in the water sector (**FD24 Asset Health Roadmap**), December 2024, SOC555.
[38] See Section 4.3.2 and para. 248 in particular.
[39] See Section 4.2.2 and Appendix 1, Section 3.

concerned that the current focus on the existing approach, which centres on the collection of comparative data, is just another excuse to kick the can down the road.

30. We consider that our targeted case for investment in AMP8 on civil structures and service reservoirs is strong and demonstrates that without investment now, customers would pay more in the future and risks to customers of failure will increase. Our analysis shows that delaying this proposed investment into AMP9 could mean that customers pay up to £67m more for remedial work, and the resulting exposure to increased service, safety and the environment risk in the meantime is valued at between £85m and £240m.[40] So if reliance is placed on Ofwat's roadmap process as a means to secure that investment, the CMA can be certain that this will ultimately cost customers more and increase the risks they face.

31. Moreover, we do not see that there is any risk to customers from the CMA considering and funding our investment case now rather than delaying it – our evidence base and the protections we offer for customers are strong and that will not change with new comparative information that will only confirm overall the sector is not sufficiently funded for capital maintenance in the round. In any event, the CMA is required to undertake a full redetermination putting itself in Ofwat's shoes to reach an outcome that best meets the statutory duties and strategic priorities, including furthering the resilience objective (see Appendix 1 Section 2). We do not consider that this would be achieved if the CMA were to simply defer to Ofwat's roadmap process.

32. As set out in Sections 0 and 4.4, we would like the CMA to review and fund our asset health investment case for civil structures and service reservoirs and redetermine the size of the base cost adjustment for mains renewals.

1.5.3 We must invest to ensure that our services are resilient to the increasing number of extreme weather events we see driven by climate change

33. The next area is **power resilience and climate change adaptation**. We address this in detail in Section 4.5 and Appendix 5.

34. Ofwat agrees that "the impacts of climate change are real, long standing and sector wide" and that "enhancement funding may be necessary on top of the activity expected to be delivered through base allowances … as a precautionary measure given the risks of not intervening in a timely manner".[41] On that basis Ofwat allowed a sector-wide adjustment of £7.0m for our wastewater network, and an additional £4.6m for power resilience at six specific sites. However, Ofwat rejected most of our proposed programme to provide backup power at critical treatment works and pumping stations (the remaining £47.4m).

35. The regulatory framework in the water sector is unusual in comparison to other regulated sectors in that it allocates the full risk of severe weather events, which are outside of companies control, to those companies.[42]

36. Power failures are the leading cause of pollution incidents in our North-East area.[43] When the energy network fails causing power outages at critical wastewater sites this creates a 'cascading failure' for our network, typically leading

[40] See Section 4.3.6.
[41] Ofwat, PR24 Draft Determinations: Expenditure allowances (**DD24 Expenditure**), 11 July 2024, pg.115, SOC296.
[42] Frontier Economics, Managing extreme weather event risk in the regulatory framework (**FE Managing Extreme Weather**), 04 October 2022, SOC478.
[43] See Section 4.5.3 and Appendix 5 Section 2.

to pollution incidents. Experience has shown that the energy network in the North-East has been particularly vulnerable to the extreme storms and weather events experienced in the region and that has impacted our service, with a higher proportion of pollution incidents caused by power outages (27%) than in other areas (for example, for United Utilities this is just 4%).[44] The evidence from climate change forecasts shows that these types of storms will continue and get worse over time. Indeed, Storm Eowyn in January 2025 led to power failures and 29 pollution incidents in the North-East.

37. These incidents could have been greatly reduced by investing in backup power supplies, as set out in our BP24 enhancement case.[45] Our customers asked us to address this issue in our business plan. We put forward proposals to invest in backup power supplies that would greatly reduce the impact of power outages on our network. There was support for the investment, even after it had been excluded by Ofwat from its DD24, with most of our customers expressing the view that Ofwat's decision should be challenged.[46]

38. We support the principle of setting a resilience standard for power supplies. However, the approach set out in Ofwat's FD24 allows one pollution incident every three years at wastewater sites before any investment is allowed. We do not consider this acceptable. Customers, stakeholders and environmental regulators expect us to reduce pollution incidents to a much, much lower level than this.[47] In practical terms, FD24 only allows funding for us to tackle around 25% of the most critical sites where we believe investment is essential, now.

39. We would like the CMA to consider the evidence and to redetermine the funding for our climate change resilience investment case. For 2030 and beyond, we support the NIC's recommendations for nationally agreed resilience standards, which is also being considered by the Independent Water Commission.

1.5.4 We must set a stretching but achievable settlement

40. In reaching its FD24 Ofwat, and now the CMA, is required to ensure that the settlement represents a 'fair bet', i.e. that a notionally efficient company has a fair chance of achieving the determination and earning the allowed return set in the FD. In doing so regulators must seek to balance driving improvement from companies in efficiency and service delivery to customers whilst also ensuring the investability of a sector. The critical question of how achievable the regulatory settlement is also featured centrally in the CMA's PR19 redeterminations. Over the past two AMPs the sector has overspent its allowances and earned outcome delivery incentive (**ODI**) penalties amounting to c.£5bn and on average companies have failed to earn their base return (see Section 3.2). Not one company (out of 17) has been able to meet the PR19 service performance targets and live within the cost allowances. Recent settlements have not represented a 'fair bet'.

41. In Section 5 we explain why Ofwat's FD24 does not reflect a robust consideration of the risk in the settlement in the round and why, when the settlement is compared to current expenditure levels and service improvement rates FD24 is, once again, unlikely to be unachievable for the average or median performer in the sector. By applying a

[44] See para. 373.
[45] NES32 - BP24, Appendix A3-18, Climate Change Resilience - Flooding and Power (**BP24 Appendix A3-18 Power Resilience NES32**), 30 September 2023, SOC042.
[46] NES82 - NWL Response to Ofwat DD24, NWG People Panels Draft Determination Report (**NWL DDR People Panels DD**), August 2024, SOC217.
[47] The EA's WISER target is for a blanket 30% reduction in pollution events across all companies. See DEFRA, Water industry strategic environmental requirements (WISER) (**Defra WISER**), 11 May 2022, SOC440.

'catch-up' efficiency challenge across five independent controls only one out of ten WaSCs is currently spending within the base allowances. All others have to find significant efficiencies from their base costs even before Ofwat's 1% assumption for ongoing 'frontier shift' improvement. The rate of improvement in service levels required under FD24 is actually greater than the sector has achieved in the past, even though there is usually little or no extra direct funding provided to achieve this. The expectation of continued sector-wide underperformance against FD24 is an unsurprising conclusion when Ofwat's PR24 framework has not changed significantly from PR19 and where the 'notional company' that Ofwat uses as its benchmark for its FD24 bears no resemblance to any of the 17 companies now operating in the sector - even the best performers would not recognise it.

42. We do not meet the characteristics of the notional company. However, we are a better performer and so can accommodate more of challenge than other companies. At the same time, we recognise that the CMA will not be able, within the limited time available for a redetermination, to redesign the regulatory framework for the sector – that job is better addressed by the Independent Water Commission. However, this imbalance must be addressed now to ensure that AMP8 is a fair bet. We therefore make a relatively small number of targeted requests for changes that would make the settlement more achievable in terms of the cost allowances and service performance targets, whilst still ensuring that companies are incentivised to improve services for customers and the environment. These include:

- **making small changes to our totex allowances** including: reducing the 'frontier shift' efficiency assumption from 1% to (a still very stretching) 0.8% per annum; funding the increased regulatory costs that we face as a 'pass through' item similar to other regulatory frameworks; reflecting our forecast costs for network reinforcement activity; and removing unjustified AMP 7 delivery penalties (see Section 5.4);
- **restoring the flexibility of the totex framework**: we ask the CMA to amend the PCDs on our base cost allowances to enable us to prioritise investment to the area of greatest need (for water mains and our lead replacement programme); we still commit to delivering sensible volumes of 'what base buys' from these allowances and ensuring customers do not 'pay twice' (for our metering and water mains PCDs) (see Section 5.5); and
- **ensuring that the service incentive framework cannot deliver either expected losses or windfall gains**: we ask the CMA to ensure that we face a 'fair bet' by removing the 50 basis point deadband from the Outcome Adjustment Mechanism (**OAM**) (see Section 5.6).

1.5.5 FD24 returns are out of line with those equity investors could earn elsewhere

43. Another important issue is the **allowed return on equity** and ensuring that the PR24 settlement is investable. The revenues we earn from customers from charges will not be enough to deliver the scale of the investment programme that is required – largely to meet legal obligations. For AMP8, for every £1 we collect from customers, we will be spending £1.13 on our assets and operations.[48] This requires us, alongside the other water companies, to attract

[48] Ofwat, PR24 final determinations: FM02 Northumbrian Water financial model (**FD24 NWL Financial Model**), December 2024, SOC322.

substantial new private capital into the sector – in the form of both new debt and equity finance. For us, to fund the necessary investment over just the next five years, some c.£400m of new equity investment is required.

44. Attracting this finance means ensuring that investors, who can invest anywhere in the world in any sector, consider that the returns on offer in UK Water adequately compensate them for the risks that they are taking. This will also unlock substantial economic growth for the UK economy. Getting the cost of equity right is central to this.

45. If investors are not convinced that the risk/reward balance is acceptable, then we, and the rest of the sector, run the risk of failing to attract the private capital that we need. Investment programmes will begin to stall, limiting or delaying the benefits of those programmes for customers and impacting both economic growth and the ability of companies to meet their legal obligations. Moreover, the more expensive this capital is for customers, the more that will be reflected in higher bills in the future. For example, as the cost of new debt costs increases due to investor perceptions of higher risk,[49] this feeds into higher embedded debt costs at the next price review. Getting this right is clearly in the interests of customers – now and in the future – and we have seen two rating agency downgrades of the regulatory regime over the last two price control periods, which suggests that the approach has been deteriorating.[50]

46. Throughout the PR24 process we, and most other companies, have tried to consider the market evidence in a balanced way, guided by what the CMA decided in the PR19 redeterminations, which we believe still represent the most thorough review of these matters since the privatisation of the sector well over 30 years ago. While we accept that past CMA decisions are not binding and indeed that there is always new information to consider, we believe that Parliament established the regulatory framework to allow the CMA to arbitrate and resolve disputes between companies and Ofwat and we wanted to respect that framework. Indeed, if those decisions are not reflected then this simply increases the likelihood of companies having to return to the CMA in the future and for subsequent panels to have to reconsider the issues looked at by previous panels again. Unfortunately, Ofwat has readopted some of the earlier positions that the CMA previously found to be wrong.

47. At the same time Ofwat's FD24 allowed return on equity appears to suggest that risk in the sector is reducing compared to PR19. This does not calibrate with the reality of the regulatory and economic landscape: there is an enormous step up in the investment programme increasing construction risk; the sector is under significant scrutiny and there is a higher prevalence of enforcement action and fines; the incentive regime is stronger and revenues therefore more volatile; and all this risk is reflected in downgrades by the rating agencies, debt pricing which is above comparator benchmarks and short-term beta's which show an upward trend. Moreover, Ofwat's allowed return on equity has not adequately reflected the step up in interest rates. As a consequence, Ofwat's allowed return on equity is now well below the cost of capital at a time when significant new investment is needed, returns in the sector have been very low with many companies unable to pay dividends for several years and risks are clearly increasing with multiple external reviews underway.

[49] See: Ofwat, PR24 final determinations: Aligning risk and return - allowed return appendix (**FD24 Allowed Return Appendix**), Figure 15, SOC308: showing water industry debt costs are now higher than the equivalently rated non water industry debt (water v iBoxx).
[50] See: https://www.waterbriefing.org/home/finance-and-risk/item/14753-moody%E2%80%99s-downgrades-uk-water-sector-outlook-from-stable-to-negative and Moody's Ratings, Moody's Ratings changes outlook to negative on Northumbrian Water, affirms ratings (**Moodys 11.2024 NWL Outlook**), 18 November 2024, SOC347.

48. To illustrate this point, investors could seek to invest in a water company for an equity return worth 7.2%[51] or a corporate bond for a much more certain (and far less risky) 6.3%.[52] The former would only be achieved, absent some financing outperformance, if the company in question was able to live within the cost allowances and meet the service performance targets set in the FD, which no company has achieved for the last four years. The differential is stark and draws into significant doubt whether Ofwat's determination is reasonable, and if the allowed return on equity will allow companies to attract the enormous amount of finance that is needed. This downward bias arises because of errors that Ofwat has made in the underlying CAPM parameters such as the Beta, the Total Market Return and the setting of the Risk Free Rate.

49. We request the CMA, which has substantial expertise in this area, redetermine the allowed return on equity by correcting the flaws in Ofwat's methodology and provide an allowance that will support the capital that we, and other companies, need to deliver the ambitious investment plans we have.

1.5.6 The redetermination should reflect new information not available at the time of Ofwat's FD24

50. In setting water price controls it is always a challenge to ensure effective alignment between Ofwat's decision timelines and the law, guidance and policy arising from Government and other regulators – especially where these have a clear and direct impact on the nature and timing of investment activity required from companies. The PR24 process has been impacted more regularly, and more materially, than previous price controls by these kinds of policy changes given the external environment.

51. Our SoC focuses on the substantive issues that we have identified as priorities for redetermination. Consistent with its ability to take account of current circumstances and information available at the time of its redetermination,[53] we also consider it appropriate to request the CMA to: reflect the statutory requirements as they stand at the date of its decision, rather than the date of FD24; reflect the latest and best information available including, inter alia, market data, expenditure information and service performance; and correct agreed errors in the FD24 models.

52. In the context of FD24 this includes updated valuations of business rates, changes to compliance requirements under the Industrial Emissions Directive (**IED**) and the Environment Agency (**EA**'s) anticipated switch away from catchment nutrient balancing (**CNB**) schemes for phosphorus removal.[54] We outline these and other relevant areas for the CMA's consideration in Section 6, with further supporting information provided in Appendix 1.

53. Finally, we note that we operate in a particularly dynamic regulatory environment (see Appendix 1 Section 3.4.1) and further changes may occur during the course of the CMA's redetermination. Whilst these changes may not necessitate formal submissions to the CMA, we will endeavour to keep the CMA appropriately informed.[55]

[51] 5.1% real plus assumed 2% CPIH inflation (Fisher equation).
[52] iBoxx £ Non-Financials BBB 10+ as at 14th Mar 2025: iBoxx Data Set from 01 September 2024 to 17 March 2025 (**iBoxx Data Set 17.03.25**), 17 March 2025, SOC591.
[53] CMA Guidance, para. 3.10.
[54] Highlighting the dynamic nature of our regulatory environment, this change was signalled by the EA in December 2024 but as at the date of submission of this SoC formal confirmation of the change of policy has not yet been received from the EA. We have included this in our SoC on the assumption that the confirmation will be provided during the course of the redetermination.
[55] See, for example, Section 5.4.3.3.

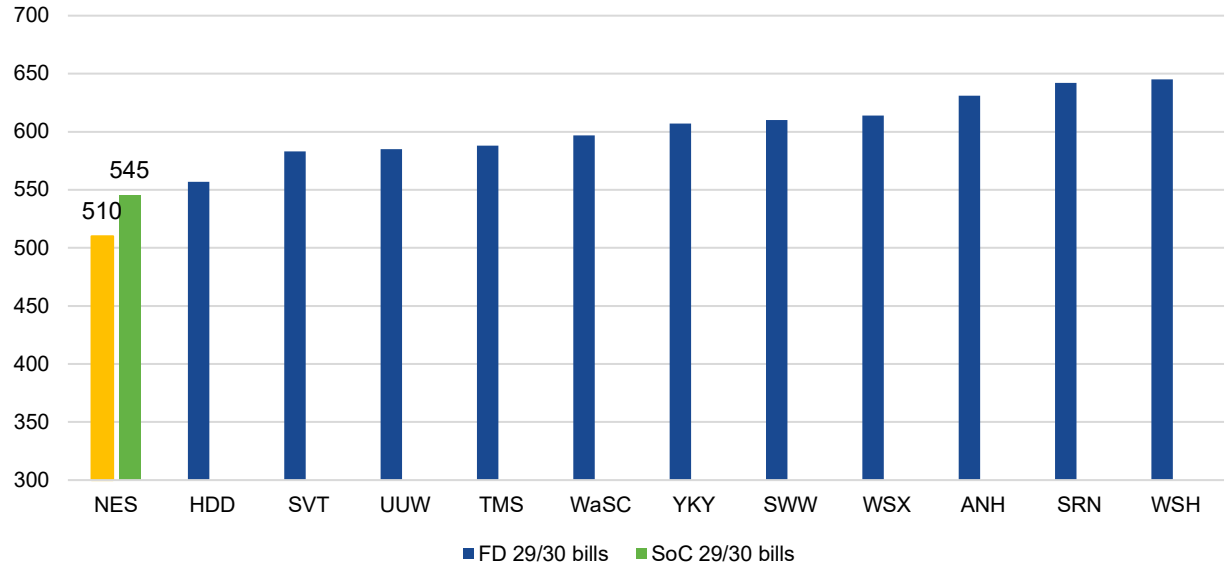
1.6 HOW A REDETERMINATION WILL IMPACT OUR CUSTOMERS

54. We are very mindful of the cost of living challenges our customers are facing and the need to protect those who are vulnerable – even where our proposals for additional investment have customer support. That is why we offered the largest bill reduction in the sector in PR19,[56] the smallest bill rise in the sector in PR24,[57] and set out substantial support for our customers in BP24 (see para. 55 above) including a four-fold increase in support and one of the largest shareholder funded packages of any company in the sector.[58]

55. Our BP24 committed to ensuring that no customer spends more than 5% of their household income on water bills by 2030, and we were the first water company to make a commitment to achieve zero water poverty.[59] We are confident that under any CMA outcome, our package of support would still allow us to achieve that goal. This will also depend on the outcome of the redeterminations for those companies that provide wastewater services in some of our operating areas,[60] so we will review this position once we have received their statements of case.

56. We estimate that our SoC proposals would increase bills by c.7% (£35) above the FD24 level by 29/30.[61] Of this increase, half is due to market movements in the Ofwat Cost of Capital parameters[62] and the business rates increases that would have been applied to bills in PR29. Even with these focused changes, we estimate that our 29/30 combined service customer bills would still be the lowest in England and Wales.[63]

FIGURE 1: NWL 29/30 BILLS POST SOC CHANGES



Source: Ofwat, PR24 final determinations: Sector summary (**FD Sector Summary**), December 2024, pg.21, SOC302. NWL SOC Databook.

[56] See: https://www.ofwat.gov.uk/regulated-companies/price-review/2019-price-review/business-plans/.
[57] See: https://www.ofwat.gov.uk/regulated-companies/price-review/2024-price-review/business-plans/key-facts-and-data-from-water-company-plans/#bills.
[58] Ofwat, PR24 final determinations: Summary of water companies' published plans for affordability for 2025-30 (**FD24 WaSC Affordability Plans**), December 2024, Table 1.3, SOC598.
[59] NES - PR19 CMA Redetermination: Statement of case (**NWL PR19 SoC**), 02 April 2020, pg.1 - FN.8, SOC287.
[60] In our Essex and Suffolk operating areas, where we are a WoC customers also face wastewater charges from Anglian Water and Thames Water
[61] Assuming a one-off 26/27 bill uplift: NES - Bill changes from SOC, Financial model SOC bill impact (**NWL Bill Impact Financial Model**), SOC560.
[62] Index links gilts and iBoxx changes post September 2024.
[63] For combined bills only. For Essex & Suffolk Water customers, our average water bills were 25% higher (£286/£229) than the average in England and Wales in 2024-25 (see: https://www.discoverwater.co.uk/annual-bill).

1.7 STRUCTURE OF THE SOC

FIGURE 2: STRUCTURE OF THE SOC

Section	Title	Description
1	Executive Summary	• Why we have sought a redetermination • Areas of focus for the CMA's redetermination • Structure of the SoC
2	About Northumbrian Water and our business plan	• Who we are • Our purpose, vision and values • Our governance • Our investors, capital structure and finances • Our performance • Our Business Plan • Ofwat's assessment of the quality and ambition of our business plan
3	The UK Water Sector in context	• Overview of UK Water • Sector performance has improved, but has not been adequately funded • Financial resilience, capital structures and dividends • Looking into the long term – the challenging conditions facing the sector
4	Ensuring long term resilience	• The need for adequate investment in effective risk management in AMP8 • Targeted case for AMP8 investment in civil structures and service reservoirs • Our case for appropriate funding and expectations for water mains renewals • Ensuring appropriate investment in power resilience to manage the impacts of climate change on our supplies
5	Setting a stretching but achievable settlement	• The need to ensure the right balance in the package • Ensuring an appropriate level of stretch in our costs • Restoring the flexibility in the totex framework • Ensuring the appropriate risk mitigation of outcomes
6	The allowed return on capital	• Estimating the CAPM-derived Cost of Equity (**CoE**) • Setting the point estimate for the allowed return on equity • Cost of debt and retail margin adjustment
7	New information, requirements and unambiguous errors	• Updating for new information • Updating for changes to legal requirements • Correcting unambiguous errors in FD24 models

57. The SoC is supported by a number of key appendices and expert reports (see Figure 3). All other supporting documents provided to the CMA are listed in the index of 'SOC[…]' documents in Appendix 7.

FIGURE 3: INDEX OF APPENDICES AND EXPERT REPORTS

Reference	Appendices and Expert Report
Appendix 1	Supporting Information: • Section 1: Observations on areas of FD24 we have not prioritised for redetermination • Section 2: Overview of the legal and regulatory framework • Section 3: The Water Sector in context – supporting information • Section 4: Evolution of the regulatory approach to asset health • Section 5: Ofwat's approach to PR24 base cost assessment • Section 6: Additional analysis on implicit allowances for mains renewals • Section 7: Detailed observations on the allowed return • Section 8: Taking account of new and updated information • Section 9: Taking account of new requirements • Section 10: Correcting known errors in FD24 • Section 11: Summary of totex

Reference	Appendices and Expert Report
Appendix 2	Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs
Appendix 3	Proposed Price Control Deliverable – Civil structures
Appendix 4	Proposed Price Control Deliverable – Service reservoirs
Appendix 5	Overview and Key Evidence: Enhancement Case for Power Resilience and Climate Change
Appendix 6	Enhancement Case: Industrial Emissions Directive
Appendix 7	Index and Glossary
	Frontier Economics, FD evidence gathering: Background material for the CMA (February 2025) (**Frontier Sector Report**) SOC418
	Kairos Economics: Setting the Allowed Return on Equity for PR24 (March 2025) (**Kairos PR24 Allowed Return 2025**) SOC001
	Tharyan, Gregory and Chen, Responses to Mason, Robertson and Wright on the use of MFMs at PR24 (March 2025) (**Tharyan, Gregory and Chen response to MRW 2025**) SOC002
	Economic Insight, A balanced approach to ensuring long-term asset resilience (21 March 2025) (**EI Asset Health 2025**) SOC003
	Economic Insight, Evidence on overall company returns in the water industry (21 March 2025) (**EI Company Returns 2025**) SOC004
	Aqua Consultants, Review of Northumbrian Water's Approach to Option Development (11 March 2025) (**Aqua Optioneering Report 2025**) SOC005
	Aqua Consultants, NWL Statement of Case: PR24 Asset Health Cost Benchmarking (17 March 2025) (**Aqua Cost Benchmarking Report 2025**) SOC006
	Aqua Consultants, NWL PR24, Deliverability Review, Power Resilience Investment (12 March 2025) (**Aqua Power Resilience Deliverability 2025**) SOC007
	Aqua Consultants, NWL Statement of Case: PR24 Asset Health Targeted Re-costing (18 March 2025) (**Aqua Targeted Re-Costing 2025**) SOC008
	Aqua Consultants, NWL PR24, Deliverability Review, Service Reservoir Investment (12 March 2025) (**Aqua Service Reservoir Deliverability 2025**) SOC009
	Metis & Aqua Consultants: Good Practice Asset Management – the impact of PCDs for water networks on optimisation (March 2025) (**Aqua-Metis Good Practice Asset Management**) SOC011
	Newcastle University, Review of Mott McDonald's Climate Resilience Assessment of Northumbrian Water (2025) (**NU Climate Change Review**) SOC012
	Aqua Consulting, RE: Climate Resilience Assessment Review (07 March 2025) (**Aqua Climate Change Review**) SOC013

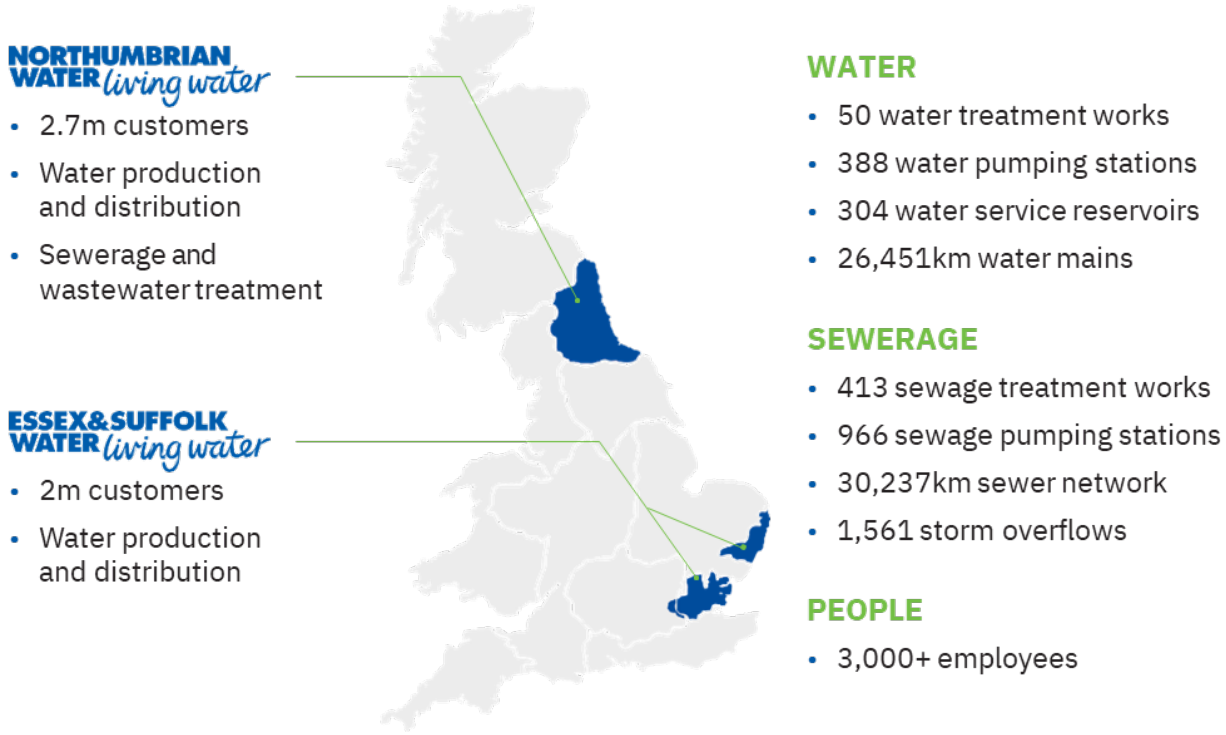
2 ABOUT NORTHUMBRIAN WATER AND OUR BUSINESS PLAN

- We are a purpose led business, with a vision to be the national leader among water companies – and we're increasingly close to meeting that vision. We are consistently among the top performers in the sector for service, and we are one of the more efficient companies.
- Our return on regulatory equity (**RoRE**) and dividends are broadly in line with Ofwat's expectations for a company which is performing well amongst its peers and in line with the 2020-2025 price review determinations. Ofwat has confirmed our dividend policy and recent executive performance related pay are in line with its requirements and compliments our approach to setting stretching targets on executive pay.
- Our business plan included around £6bn of investment - significantly more than in previous price review periods. This was driven principally by new statutory requirements, such as over £1bn for improving storm overflows, new requirements on water quality monitoring, phosphorus and nitrogen reductions, new water supplies, and many others.
- In developing our business plan, we wanted to reflect the views of our customers and stakeholders. Our customer engagement programme explored difficult topics such as the right investments in resilience and health. The independent Water Forum challenged our approach and business plan throughout the process. Overall, 74% of customers found our plan 'acceptable' and the research we undertook provided a rich evidence base on customer preferences and informed choices we made in our plan.
- We also wanted to drive long-term and systems thinking in our business plan, and we adopted partnership working and sought to take forward nature-based solutions wherever possible to seek shared and wider benefits from our work. We have committed to spend 60p in every £1 in our operating areas to support local jobs and communities, and we are considered the top company in England and Wales to work with according to the supply chain– our local partnerships and supply chain resilience are critical for us.
- For PR24, our work on resilience meant exploring the need for increasing investment in asset risk management and climate change adaptation. We developed forecasts of asset deterioration and changing climate and created plans to tackle these, discussing this with customers to determine the right proactive investments to make before 2030.
- Ofwat agreed with most areas of our business plan - including base modelled costs, enhancement costs and outcome performance commitments. Much of the approved investment related to mandatory activities driven by legal requirements. However, Ofwat disallowed important investment proposals for non-mandatory activities relating to asset risk management and climate change adaptation.
- Ofwat assessed our plan as "standard", describing it as high quality but not sufficiently ambitious. This assessment was largely because Ofwat classified our proactive asset risk management expenditure as "base" and then disallowed it – meaning that our base costs appeared inefficient.

2.1 WHO WE ARE

58. We provide water and wastewater services to our customers in the North East of England (**Northumbrian Water**, or **NW**), and water services only to our customers in the South East of England (**Essex & Suffolk Water**, or **ESW**) in accordance with the terms of our Licence.[64]

FIGURE 4: NORTHUMBRIAN WATER OPERATING AREAS/AREAS OF APPOINTMENT



Source: NWL area of appointment - https://www.nwg.co.uk/about-us/nwl/

59. The challenges we face are quite different in our two areas. In the North-East, we provide services to 2.7m customers in the major population centres of Tyneside, Wearside and Teesside as well as the large rural areas of Northumberland and County Durham. Large reservoirs across the North Pennines and Northumberland National Park, especially Kielder Water (the largest reservoir in England and Wales) mean that we have sufficient water supplies – but like the rest of England and Wales, a large need for investment and work with others to restore and regenerate our natural environment (including, but not only, reducing the impact of sewage on our local environment).

60. Our Essex area is part rural and part urban, and includes the main population centres of Chelmsford, Southend and the London Boroughs of Barking and Dagenham and Havering and Redbridge. Our Suffolk area is mainly rural with the largest towns being Great Yarmouth and Lowestoft. In Suffolk, recent investigations have shown that we need to reduce the amount of abstraction from rivers to support healthy river catchments – this means large

[64] NWL Licence 12.02.2024, SOC256.

investments in alternative water supplies, with decisions still to be made about exactly which adaptive investment pathway should be followed.[65]

2.2 OUR PURPOSE, VISION, AND VALUES

61. We are a purpose-led business.[66] Our **Purpose** is:

> Caring for the essential needs of our communities and environment, now and for generations to come.
> We do this by providing reliable and affordable water and wastewater services for our customers.
> We make a positive difference by operating efficiently and investing prudently, to maintain a sustainable and resilient business.

62. Our **Vision** is to be the national leader in the provision of sustainable water and wastewater services. We define this as being in the top two companies for customer service (**C-MeX**) and ranking as the best company across a range of service metrics which are broader than those which Ofwat considers in its annual service and delivery reporting. We have been close to meeting this standard in each of the last three years, ranking 4th in 2021/22, 2nd in 2022/23, and 1st in 2023/24.[67]

63. Our Purpose defines who we are, and our Vision defines what we do – but our **Values** define how we do it. Our values set out the behaviours we expect our people to demonstrate, supporting them to take the right decisions and actions to deliver our Purpose and Vision.[68] We recently updated our articles of association to further embed this purpose in our governance.

64. Our strong positive culture is evidenced our strong positive culture is evidenced by our appearance on the Ethisphere Institute's World's Most Ethical Business list. We are the only water company to have been included on this list and we have appeared 12 times[69] and were the first water company to achieve the Good Business Charter. In the CCW's 2023 research into Customer-Centric Company Culture, we are frequently cited as the example of 'what good looks like'.[70] Our commitment to innovation extends beyond our industry, showcasing our dedication to excellence.[71] We have been one of the most successful companies in Ofwat's Innovation Fund since it was established in 2020[72].

65. All of this supports our reputation and the trust and confidence that customers and stakeholders place in us. In CCW's most recent Water Matters Report,[73] whilst we recognise that wider trust in the sector has fallen,

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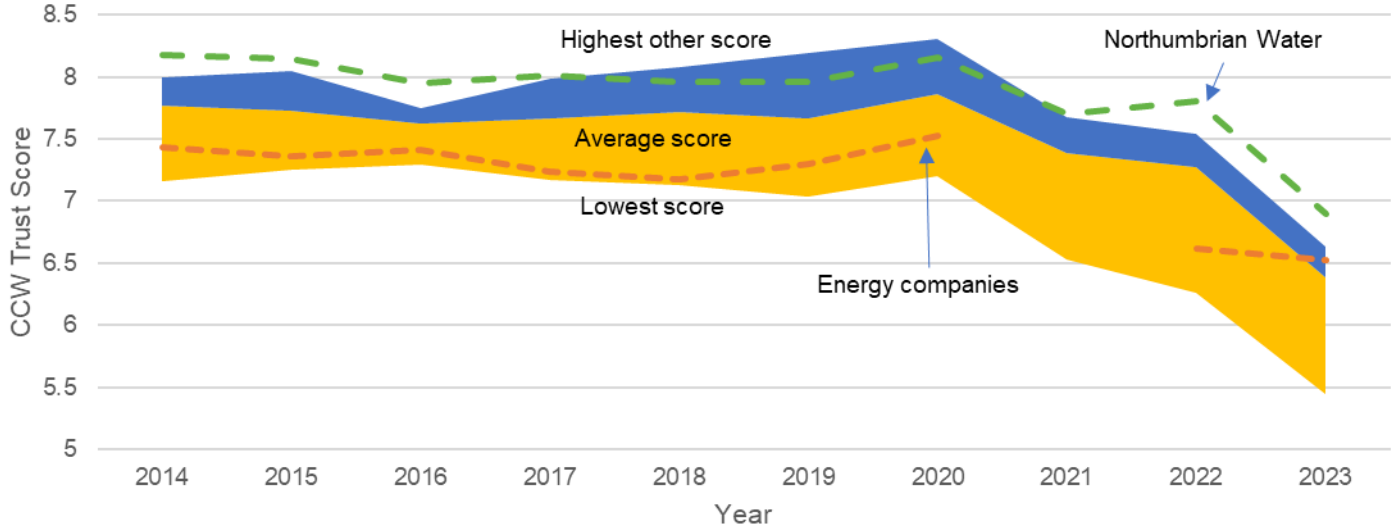
[65] NES - Essex & Suffolk Water Resource Management Plan 2024, Executive Summary (**ESW WRMP Executive Summary**), October 2024, pg.52-56, SOC357, section 8.2 explains adaptive pathways; and NES_LTDS - Shaping our future: Our Long-term Strategy 2025-2050 (**BP24 LTDS**), 01 October 2023, SOC099.
[66] Consideration of our purpose was embedded into our director's duties in our Articles of Association in 2024: Northumbrian Water Limited, Articles of Association, Article 5A.2(g) (**NWL Articles of Association 2024**), 04 December 2024, SOC258. We report annually on progress against our Purpose: Northumbrian Water Limited, Our Purpose 2023-2024 (**NWL Our Purpose 23-24**), 2024, SOC257. For further details, see BP24, pg.12, SOC014.
[67] Ofwat C-MeX and D-MeX results by year: 2023-2024 results see: https://www.ofwat.gov.uk/regulated-companies/company-obligations/customer-experience/c-mex-and-d-mex-2023-24-results/; 2022-2023 results see: https://www.ofwat.gov.uk/regulated-companies/company-obligations/customer-experience/c-mex-and-d-mex-2022-23-results/; 2021-2022 results see: https://www.ofwat.gov.uk/regulated-companies/company-obligations/customer-experience/c-mex-and-d-mex-2021-22-results/.
[68] See BP24, Figure 5, SOC014 for a visual representation of how our Purpose, Vision and Values fit together in our business model.
[69] See https://worldsmostethicalcompanies.com/honorees/.
[70] CCW, Guide to Customer-Centric Culture (**CCW CCC Guide 2023**), 18 July 2023, pg.26, 31, 33, 37-38, SOC358.
[71] The Annual Northumbrian Water Innovation Festival (8 years running) sponsors & participants are from a wide range of sectors: https://www.innovationfestival.org/sponsors/, see also: https://www.innovationfestival.org/.
[72] See: https://waterinnovation.challenges.org/winners/.
[73] CCW, Water Matters: Household Customers' Views on their Water and Sewerage Services (**CCW Water Matters 2024**), May 2024, pg.28 - Table 5, SOC359. NWL trust scores were 7.88, highest in England, compared to 7.49 WASC average and 7.17 ten year rolling average for electricity companies.

Northumbrian Water is the **most trusted water and sewerage company in England** – and we have remained amongst the most trusted companies in the sector for many years. Our trust score in Essex & Suffolk Water is above the industry average.

FIGURE 5 - NORTHUMBRIAN WATER AND SECTOR TRUST LEVELS OVER TIME



Source: data from CCW Water Matters 2024, SOC359. Notes: scores are for water and sewerage companies in England, with the blue and orange areas showing the range between the lowest, average, and highest scores (not including Northumbrian Water). The comparative question about energy companies was not asked in the 2021 Water Matters research. NWL SOC Databook.

2.3 OUR GOVERNANCE

66. Our Board seeks to run the business in line with our Purpose and Vision.[74] The Board is made up of a majority of Independent Non-Executive Directors[75] to ensure (amongst other things) that, in line with our Licence obligations implementing Ofwat's Board leadership, transparency and governance principles,[76] our Board "can make high quality decisions that address diverse customer and stakeholder needs".[77]

67. We always seek to understand and reflect the views of our customers. We established the Water Forum[78] in 2016 to represent the interests of our customers and stakeholders. We are in constant dialogue with the Water Forum about our ongoing performance, investments we are making in our assets, support we offer to customers, future plans and strategies and other matters.[79] We undertake regular research with our customers and stakeholders on their priorities and views,[80] which we triangulate with other research,[81] to inform our decision making.

[74] Northumbrian Water Limited, Annual Report and Financial Statements for year ended 31 March 2024 (**NWL Annual Report 23-24**), 2024, pg.81, SOC262. See also NES03 - BP24, Appendix A2, Data, Information, and Assurance (**BP24 Appendix A2 Data**), October 2023, pg.36-38 - section 6.1, SOC017.
[75] NWL Annual Report 23-24, pg.73-88, SOC262.
[76] Ofwat, Board leadership, transparency and governance – principles (**Ofwat BLG Principles**), January 2019, SOC364.
[77] NWL Licence 12.02.2024, Condition P3.4, SOC256.
[78] See: https://www.nwg.co.uk/about-us/the-water-forum.
[79] Details of the Water Forum meetings are made publicly available on https://www.nwg.co.uk/about-us/the-water-forum/meetings/.
[80] See: https://www.nwg.co.uk/about-us/research-library/.
[81] NES08 - BP24, Appendix A7, Customer and Stakeholder Engagement (**BP24 Appendix A7 C and S Engagement**), October 2023, SOC022.

68. In February 2022, we commissioned a report from ICS that considered how our approach to PR24 could improve, and provided this to Ofwat through its Future Ideas Lab.[82] We adopted the proposals from this report for PR24, which were:

- continue to place a very strong emphasis on engaging with and understanding out customers for PR24 (by embedding six proposed engagement principles, adopting the proposed engagement framework, and seeking to engage customers on topics where customers could meaningfully give views);
- support and use Ofwat and CCW centralised research, and triangulate this with other evidence including our own research in developing our business plan; and
- continuing with the Water Forum but strengthen their independence and give them their own resources to challenges our plans.

2.4 OUR PERFORMANCE

69. We are proud of our performance, but we are not complacent. In line with our vision, we strive constantly to improve both to reduce costs and bills to customers by operating more efficiently while also driving improvements in the levels of service we offer.

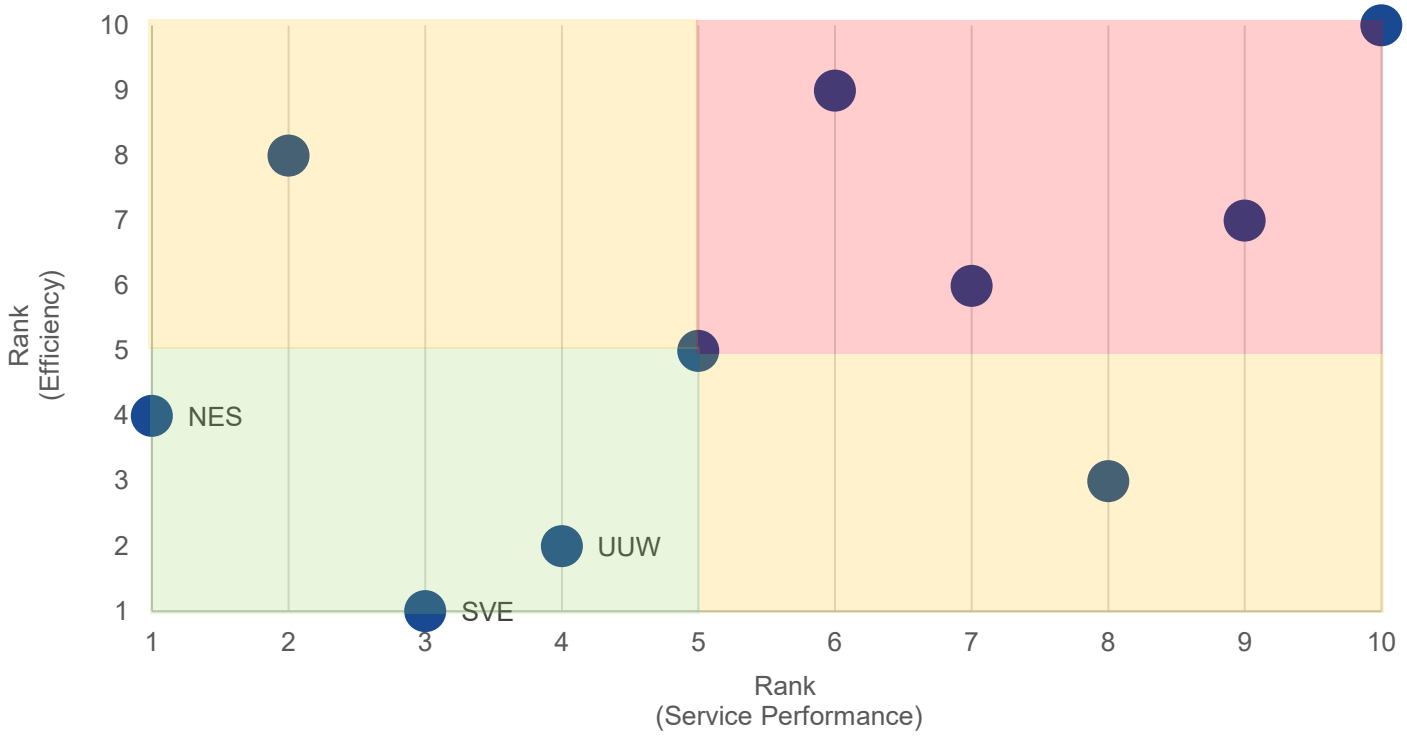
2.4.1 Cost and service performance

70. Over the last ten years, we have become one of the more efficient water companies, consistently towards the top quartile of the sector.[83] We have invested heavily in digital transformation and innovation, working in partnership with thought leaders. We rank fourth among the WaSCs across all five of Ofwat's cost assessment models[84] and were the benchmark company for wastewater at PR19.[85] At the same time, our service performance is among the best in the sector. Across all of the common service performance areas (Performance Commitments or **PC**s) in 2023/24 we ranked first amongst the WaSCs (see Figure 6).

71. Although our performance compared to other water companies is strong, we recognise that during the current 2020-25 period we have not always met all the commitments we made to customers in our 2020-25 Business Plan and there are important areas where we still need to do better.[86]

[82] ICS, Northumbrian Water, Customer Engagement for PR24 and Beyond: Evolving the Directions for Customer Engagement in the Water Sector (**NWL Customer Engagement ICS Report**), February 2022, SOC492.
[83] BP24, pg.14 – Figure 7, SOC014; NES04 - BP24, Appendix A3, Costs (**BP24 Appendix A3 Costs**), October 2023, pg.96 – Table 36, SOC018
[84] Aggregated efficiency of all price controls from Ofwat, PR24 Final determinations: CA05 Base costs water model 3 (**FD24 Water FM3**), December 2024, SOC330; and Ofwat, PR24 Final determinations: CA08 Base costs wastewater model 3 Network Plus (**FD24 Wastewater N Plus FM3**), December 2024, SOC331; and Ofwat, PR24 Final determinations: Base costs wastewater model 3 Bioresources (**FD24 Bioresources FM3**), December 2024, SOC332; and Ofwat, PR24 Final determinations: CA12 Base costs residential retail model 3 (**FD24 Retail FM3**), December 2024, SOC333. NWL Databook, Figure 6.
[85] CMA, PR19 final determinations: Feeder Model 2 Wastewater (**CMA FD19 Wastewater FM2**), March 2021, SOC496.
[86] We have achieved 62% of our targets between 2020/21 and 2023/24 (Other Databook 3). We have underperformed against our PR19 targets for some of our compliance targets including compliance risk index and treatment works compliance. We have also underperformed against some of our interruption's targets, with performance in these areas often affected by storms, such as Arwen (we have three interruptions measures, 1 -3 hours, over 3 hours and over 12 hours during PR19). Our performance against pollutions has also headed in the wrong direction in 2023-24. See: NWL APR 23-24, pg.11, SOC259.

FIGURE 6: COMPARATIVE EFFICIENCY AND SERVICE PERFORMANCE RANKS FOR 10 LARGE WASCS[87]



Source: NWL analysis of Ofwat FD24 base efficiency scores for the last 5 years and RoRE by performance commitment excluding bespoke PCs from Ofwat's Water company performance report 2023-24.[88] We published a similar analysis for 2022-23 in BP24. NWL SOC Databook.

2.4.2 Environmental performance

72. The EA's annual Environmental Performance Assessment (**EPA**) compares environmental performance between water companies over time. We are consistently one of the highest EPA performers (four stars in 2021 and three stars in each of 2022 and 2023 - the third best performance after Severn Trent and United Utilities).[89] We have had no serious pollution incidents since 2021 and our percentage of self-reported pollution incidents is sector leading.[90] In the North-East, we have some of the lowest levels of pollution and some of the cleanest rivers and beaches in the country. 33 out of 35 of our coastal bathing waters are classified as Excellent or Good and we have the highest proportion of water bodies by surface area meeting good ecological status in England and Wales.[91]

73. In BP24, we recognised that this is not enough. Our Environment Strategy[92] sets out our long-term commitments to meet our ambition to restore and regenerate our natural environment, creating a better place through our actions. This includes, under our "healthy catchments, rivers and coastal waters" priority, our commitments to eliminate the detrimental impacts of our operations and assets on waterbodies as soon as it is practical, including working with partners so that where possible, waterbodies can achieve good ecological status. It also reaffirms our commitments

[87] Similar analysis conducted with 2021/23 data shows that we ranked second for efficiency and third for service: BP24, pg.14 – Figure 7, SOC014.
[88] WCPR Data 23-24, SOC444: net annual payment excluding "Other" in "RoRE by Performance Commitment" sheet.
[89] EA, Water and sewerage companies in England: environmental performance report 2023 (**EPA 2023**), 23 July 2024, pg.8 – Table 1, SOC360.
[90] Environment Agency, Environmental Performance Assessment (EPA) results 2011-2023 for water and sewerage companies (**EPA Results 2011-2023**), tab EPA_Results_2023, SOC479.
[91] BP24, pg.15, SOC014.
[92] NES75 - Restore and Regenerate: Our Environment Strategy to 2050 (**BP24 Environment Strategy**), September 2023, SOC081.

to zero serious pollution incidents and reducing the number of category 1-3 pollution incidents by 50% by 2040 (from a 2022 baseline);[93] and all bathing waters at good or excellent status by 2030.[94] BP24 provided the first steps to achieving these goals, with an unprecedented level of environmental investment, including partnership working and nature-based solutions wherever possible.

74. We share the EA's concerns about pollution incidents from water companies[95] more widely, particularly the slightly increasing trend we have seen across the sector since 2015. We have made large improvements since then, but there are growing pressures from climate change (particularly power resilience) and increased activity and technology for inspections that can detect pollution incidents more effectively than ever before.

75. We note that there is an ongoing sector-wide investigation into by Ofwat and the EA into compliance with environmental permits and WIA 91 duties with respect to flow to full treatment activities.[96] We are subject to this investigation and are currently engaging with Ofwat regarding the draft decision received in August 2024. This investigation has no direct link to the issues raised in this SoC, so we do not provide any further commentary on it.

2.4.3 Asset management performance

76. Water and wastewater services rely on a complex system of physical assets that must be maintained and renewed for service delivery to continue. If one of these assets fails, the consequences can be severe, leading to interruptions in supply, risks to water quality, and potential breaches of regulatory obligations.

77. For over 30 years, we have employed a data-driven approach to asset management, evolving from historical breakdown records and physical inspections to advanced deterioration modelling and statistical analysis. We have developed and refined a repeatable and robust asset management system, ensuring sustained improvement over successive regulatory periods. Investment decisions have been guided by detailed asset health tracking, incorporating historical condition surveys that align with Ofwat's grading scores since PR04. External audit reports further validate our asset planning, asset health, competencies, and strategic asset management plan.

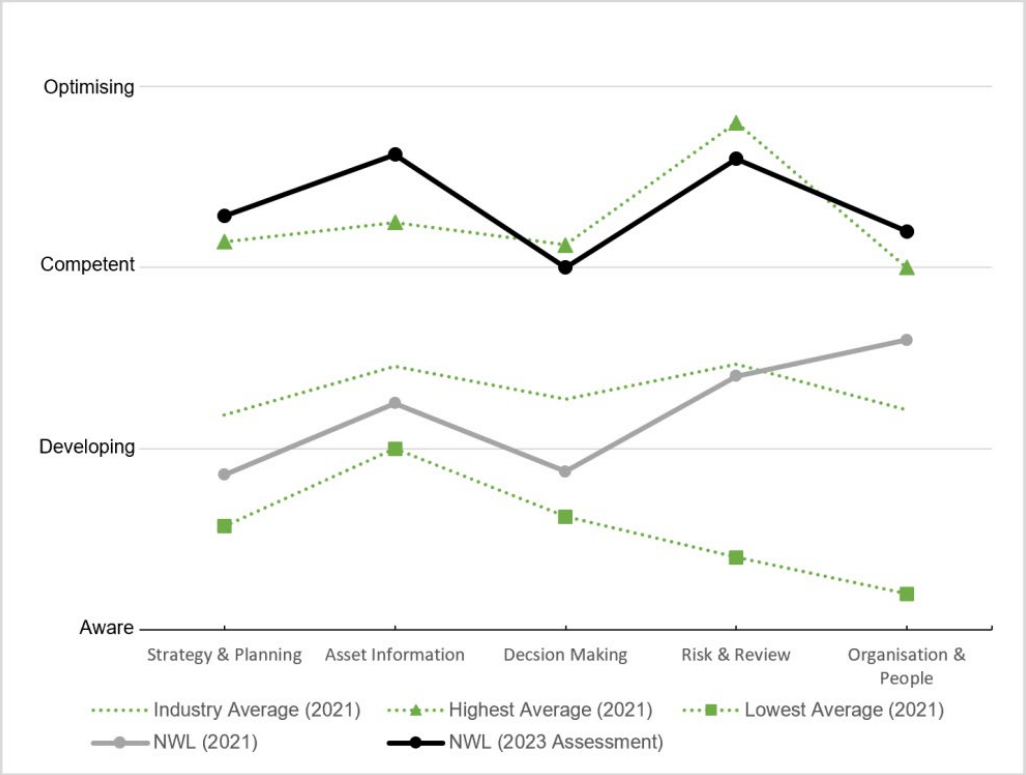
78. Asset risk management is an on-going journey that requires continuous improvement. A proactive approach to risk management has historically been central to our approach to asset health.[97] We fully support any initiative to drive maturity in asset risk management across the water sector by sharing best practices to strengthen our capacity to track, assess, and maximise asset health.[98] As one of the first English water companies to achieve ISO 55001 accreditation in 2015, we have maintained this standard through annual external assurance audits.

79. In its Asset Management Maturity Assessment (**AMMA**) in 2021 Ofwat assessed the strength of companies' decision-making approaches by looking for 'competency in optimisation of cost, risk, and performance across an investment portfolio'.[99] A company at an advanced level of maturity is expected to 'continuously and systematically reassesses new information and re-optimises the balance of risk, cost and performance to update its plans'.

[93] BP24 Environment Strategy, pg.16, SOC081.
[94] BP24 Environment Strategy, pg.16, SOC081.
[95] EPA 2023, pg.3-4, SOC360.
[96] https://www.ofwat.gov.uk/investigation-into-sewage-treatment-works/
[97] Aqua Consultants, Review of Northumbrian Water's Approach to Option Development (**Aqua Optioneering Report 2025**), 11 March 2025, Section 2, SOC005.
[98] NES35 - BP24, Appendix A3-21, Asset Health Investment (**BP24 Appendix A3-21 Asset Health**), 20 September 2023, Section 3.5, SOC045.
[99] See Appendix 1, Section 4, Figure 10 Row 17.

80. We always look to drive continuous improvement in our asset management maturity, in the last five years this has included: improvement in data driven decision-making; development of value frameworks for prioritisation; and a systematic review of risk. We also acted on the recommendation of the initial AMMA assessment in 2021 and worked in collaboration with other companies to transfer knowledge and effective processes. Arup repeated the AMMA exercise for us in July 2023, scoring us between "competent" and "optimising" and significantly outperforming even the leading companies in each category in the 2021 assessment.[100] Our Board considered this assessment in making its final decisions about BP24.[101]

FIGURE 7: BENCHMARKING OUR ASSET MATURITY



Source: BP24 AMMA 2023, Figure 1, pg.9, SOC075.

81. Ofwat repeated its AMMA assessment more robustly and with a greater understanding across companies of the framework and how the information would be used in September 2024.[102] We ranked first in the sector, scoring a perfect 5.0 in each category compared to an industry average of 3.2 across all categories.[103]

2.4.4 Performance and executive pay

82. Consistent with our Vision to be a national leader, Ofwat's most recent assessment of performance related executive pay (**PRP**) highlighted our approach to using stretching targets as an important example of good practice in the water sector.[104] We were the only large WASC that Ofwat considered had met its expectations in making

[100] NES67 - ARUP Asset Management Maturity Assessment (**BP24 AMMA 2023**), August 2023, SOC075.
[101] BP24 Appendix A2 Data, pg.28, SOC017.
[102] See Appendix 1 Section 3 Figure 3 Row 32.
[103] Asset Management and Operational Resilience Working Group – Information Request - AMMA Company Response – NWL (**AMMA Company Response NWL**), September 2024, pg.3, SOC502.
[104] Ofwat, Protecting customer interests on performance-related executive pay: 2023-24 assessment (**PRP Assessment 23-24**), November 2024, pg.10, SOC361.

sure that PRP also reflects overall performance delivered for customers and the environment, such that no adjustments were required to our PRP.[105] We have had transparent and robust PRP arrangements for many years and were also highlighted as an example of best practise in this area in a 2021 Ofwat report on the Board Leadership, Transparency and Governance principles.[106]

2.5 OUR INVESTORS, CAPITAL STRUCTURE AND FINANCES

83. Like all water companies in England, we must raise finance through debt and equity markets to fund our investments, with customers paying for these investments through their bills over the lifetime of the assets- like a mortgage. The value of these investments not yet paid for is represented by our regulatory capital value (**RCV**) which was £5.44bn at the end of March 2024.[107] Ofwat's price controls at PR24 determine how much this will grow, how much of this will be paid for by customers, and how much return will be allowed on this RCV in the 2025-30 period.

84. We have two main shareholders (CKI[108] and KKR) and a simple capital structure with no securitization.[109] Both CKI and KKR are very large and long-term infrastructure investors. Our gearing has been stable at an average of 68% since 2015, close to the average WaSC gearing of 70% over the same period (see Appendix 1 Section 3.2.1). We are currently categorised as 'Elevated Concern' under Ofwat's Financial Resilience Monitoring Framework.[110] We have been held in this category for 3 years, and Ofwat relates this to our steady level of 68-70% gearing, the industry average.

85. Under the terms of our Licence, we are required to maintain an investment grade credit rating – this is an independent view of how risky it is to lend a company money.[111] Our current rating is BBB+ neg with Fitch and Baa1 neg with Moody's,[112] which is two notches above the minimum investment grade and in line with listed companies such as Severn Trent and United Utilities.[113] Moody's downgraded Northumbrian Water to Baa1 Negative (from a stable outlook) in November 2024[114] as part of a sectoral downgrade of ten water companies: "we have changed our assessment of the stability and predictability of the regulatory environment for the UK water sector under our rating methodology to A from Aa".[115] In a separate credit opinion, Moody's stated:

> Northumbrian Water's ratings also take account of its controlling shareholder's track record in supporting solid investment-grade profiles in its core investments across the UK as well as globally". A credit strength

[105] PRP Assessment 23-24, pg.18 – Section A1, SOC361.
[106] Ofwat, Board leadership, transparency and governance - Report on how companies are meeting the principles (**Ofwat BLG Report**), February 2021, pg.10, SOC483.
[107] Ofwat, Monitoring Financial Resilience Report 2023-24 (**Ofwat Financial Resilience 23-24**), 21 November 2024, pg.13, SOC340.
[108] CKI, who acquired NWL in 2011, is one of the largest investors in UK infrastructure and since August 2024 has had a secondary listing on the London Stock Exchange: https://www.londonstockexchange.com/discover/news-and-insights/london-stock-exchange-welcomes-ck-infrastructure-holdings-limited-main-market
[109] See: https://www.nwg.co.uk/about-us/nwgroup/nwg-structure/
[110]: Ofwat Financial Resilience 23-24, pg.10, SOC340.
[111] NWL Licence 12.02.2024, Condition P26, SOC256.
[112] Both are with negative outlook: Moodys 11.2024 NWL Outlook, SOC347; and for Fitch's ratings see: https://www.fitchratings.com/research/corporate-finance/fitch-revises-northumbrian-water-outlook-to-negative-affirms-senior-unsecured-at-bbb-03-03-2025.
[113] Northumbrian Water Limited, Annual Performance Report for year ended 31 March 2024 – Tables (**NWL APR 23-24 Tables**), 2024, Table 4H, SOC260.
[114] Moodys 11.2024 NWL Outlook, pg.1, SOC347.
[115] Moody's Ratings, Regulated Water Utilities - UK: Reduced predictability of regulatory environment pressures credit quality (**Moodys 11.2024 Predictability**), 18 November 2024, pg.6-7 - Appendix 1, SOC362.

> noted was: "Generally strong operational performance and flexible dividend policy support leverage broadly in line with regulatory assumptions. [116]

86. We publish a Long-Term Viability Statement[117] annually as part of the Annual Performance Report (**APR**). The 2024 APR expressed its concerns about the potential impact of the PR24 settlement:

> Whilst the Directors consider that the business will remain financeable with regards to its obligations to debt financing and credit ratings, they remain significantly concerned that the 'early-view' returns Ofwat has set out in its PR24 methodology are not sufficient to attract the necessary investment that is likely to be needed to meet the new capital needs and, in the round, offer reasonable returns on that investment.[118]

87. Over 2020-24, our base real return averaged **4.40%**.[119] We outperformed the CMA's assumed financing costs on the cost of debt,[120] and the Government changed its policy on corporation taxes, so we outperformed the base return for financing costs by **3.12%**. Offsetting this, we underperformed on totex, reducing RoRE by **1.36%** (this is despite having some of the best comparative performance in the sector). The tax outperformance is due to higher capital allowances and is returned to customers as part of a PR19 reconciliation adjustment in PR24.

FIGURE 8: NWL AND WATER SECTOR RORE

AMP7 to date (2020-24)	NWL	Industry Average
Base RoRE	4.40%	4.09%
Financing out/(under) performance	3.12%	2.09%
Operational out/(under) performance	-1.36%	-3.40%
RoRE	**6.16%**	**2.78%**
Cost of debt (post hedging)	2.09%	0.61%
Variance in corporation tax	1.02%	1.50%
Gearing benefits sharing mechanism	0.00%	-0.01%
Financing out/(under) performance	**3.12%**	**2.09%**
Totex out /(under) performance	-0.85%	-1.99%
ODI out /(under) performance	-0.17%	-0.66%
C-Mex & D-Mex out /(under) performance	0.16%	-0.01%
Retail out /(under) performance	-0.56%	-0.57%
Other exceptional items	0.05%	-0.17%
Operational out/(under) performance	**-1.36%**	**-3.40%**

Source: Ofwat Financial Resilience 23-24 Data, SOC337. NWL SOC Databook.

88. We outperformed the 2.78% industry average RoRE – mostly because operational performance was better than average for the industry. For the industry as a whole, RoRE was less than the 4.09% base return set in FD19. By contrast, returns in the regulated energy sector are much higher at 8.1% to date in RIIO-2 (see Appendix 1 Figure 5).

[116] Moodys, Credit Opinion - Northumbrian Water Ltd.: Update following outlook change to negative (**Moodys 12.2024**), 05 December 2024, SOC452.
[117] In accordance with NWL Licence 12.02.2024, Condition P12, SOC256.
[118] NWL APR 23-24, pg.110, SOC259.
[119] Ofwat, Monitoring Financial Resilience Report 2023-24 Data (**Ofwat Financial Resilience 23-24 Data**), 21 November 2024, sheet RoRE - Cell F40, SOC337.
[120] Due to higher inflation in 22/23 and NWL's choice to have a higher proportion of fixed rate debt than the sector.

89. Using Ofwat's calculation of **dividend yield**[121] we had a dividend yield of **4.1%** in 2023-24 compared to the sector average of 3.5%[122] and Ofwat's assumption of a 4% dividend yield at both the PR19[123] and PR24 price reviews.[124] Over AMP7 we anticipate an average dividend yield of 5.29% on actual regulatory equity, which is 4.16% on notional regulatory equity. The CMA FD19 real return on equity for the same period was 4.73% and the nominal allowed return was 6.82%.[125] This shows that we are broadly in line with Ofwat's expectations for a company who is slightly outperforming the financing costs and service levels set in the price review.

FIGURE 9: NORTHUMBRIAN WATER DIVIDEND YIELDS 2020-25

	Northumbrian Water					Average
	2020/21	2021/22	2022/23	2023/24	2024/25	2020-25
Appointed Dividends						
Dividend yield - actual	0.0%	13.2%	6.9%	4.1%	2.4%	**5.29%**
Dividend yield - notional	0.0%	10.3%	5.6%	3.1%	1.8%	**4.16%**

Source: Ofwat Financial Resilience 23-24 Data, SOC337 & 24-25 projections. NWL SOC Databook.

90. We updated our dividend policy in September 2022 to ensure it aligned to the Ofwat Board Leadership, Transparency and Governance principles.[126] We immediately shared this with Ofwat[127] and made further amendments following Ofwat feedback. This was all carried out voluntarily, in advance of the Section 13 licence modifications of March 2023.[128] Under the new licence condition it is now impossible for us and other companies to pay dividends that don't reflect the service performance that customers received (as defined by the calculations presented above). Ofwat has demonstrated that it will enforce this condition through recent casework. Ofwat wrote to us in January 2025 to confirm we had demonstrated compliance with our dividend policy licence condition but suggested some minor improvements which could be made to explain this more transparently.

2.6 OUR BUSINESS PLAN

91. We developed BP24 between March 2022 and October 2023.[129] This incorporated a large number of other long-term decision-making processes,[130] in particular our water resources management plan (**WRMP**)[131] and drainage and wastewater management plan (**DWMP**)[132] which have their own legal requirements and statutory consultation processes (set by the Department for the Environment, Food and Rural Affairs (**Defra**) and the EA). We also developed and published our long-term delivery strategy (**LTDS**)[133] (a new requirement for PR24) which looked at

[121] Dividend paid/Actual Regulatory equity, See Ofwat Financial Resilience 23-24, pg.35, SOC340.
[122] Ofwat Financial Resilience 23-24, pg.35, SOC340.
[123] Ofwat, PR19 Final Determination: Aligning risk and return technical appendix (**FD19 Risk and Return**), 16 December 2019, pg.92, SOC463.
[124] Ofwat, PR24 Final Methodology – Appendix 10 Aligning risk and return (**FM24 Appendix 10 Risk and Return**), 19 December 2022, pg.64, SOC293.
[125] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited Price Determinations, Summary of Final Determinations (**CMA FD19 Summary**), 17 March 2021, pg.27 - Table 7, SOC335.
[126] Ofwat BLG Principles, SOC364.
[127] NES - Northumbrian Water Response to Ofwat Consultation under Sections 13 and 12A of the Water Industry Act 1991 on Proposed Modifications to Strengthen the Ring-fencing Licence Conditions (**NWL Ring-fencing Licence Mod Response 2022**), September 2022, SOC278.
[128] Ofwat, Decision under sections 13 and 12A of the Water Industry Act 1991 to modify the ring-fencing licence conditions of the largest undertakers (**Ofwat Licence Modification 2023**), 20 March 2023, SOC346.
[129] BP24, SOC014 and all subsequent submissions are published on our website. This is summarised in NES80 - A Guide To Our Plan (**BP24 Guide**), October 2023, SOC015, which provides links to all documents and explains the one document submitted to Ofwat but not published (NES63 - Mott MacDonald Northumbrian Water Benchmark Reports (**BP24 Cost Benchmarking Report**), September 2023, SOC071: which is commercially sensitive).
[130] For an overview of the coordination required across different planning frameworks see Frontier Economics, FD evidence gathering: Background material for the CMA (**Frontier Sector Report**), February 2025, pg.22, SOC418.
[131] NES - Water Resource Management Plan 2024 (**NWL WRMP**), October 2024, SOC142.
[132] NES - Drainage and Wastewater Management Plan Technical Report (**NWL DWMP**), May 2023, SOC168.
[133] BP24 LTDS, SOC099.

other long-term investment requirements such as: maintaining resilience; delivering Net Zero; and replacing lead pipes.

92. BP24 included around £6bn of investment - significantly more than in previous price review periods. This was driven by new statutory requirements, such as around £1bn for the Storm Overflows Discharge Reduction Plan (**SODRP**),[134] but new requirements on water quality monitoring, phosphorus and nitrogen reductions, and many others. Statutory requirements under the WINEP made up 94% of our enhancement expenditure in BP24.[135] The remaining "discretionary" enhancement expenditure was in three areas:

- **climate change resilience** – to address flooding and power risks at treatment works and pumping stations, as well as targeted enhancements to treatment processes to protect from periods of very hot weather;
- **lead replacement** – the Drinking Water Inspectorate (**DWI**) requires us to make progress towards replacing lead pipes, but there is no formal statutory target or agreed long-term pathway (our BP24 set the most ambitious target in the sector, based on customer preferences); and
- environmental expenditure under the **Government's 25 Year Environment Plan** – this includes improving water environments under our Bluespaces programme,[136] and working with partners to reduce flooding under our Northumbria Integrated Drainage Partnership (**NIDP**) programme.[137]

93. For all of our investments (statutory or discretionary) we developed a range of options which would meet the identified needs. Our approach to options appraisal looked for nature-based and partnership solutions in the first instance. We calculated the costs and benefits of each option and selected the options that were least cost and best value. We undertook extensive benchmarking of those costs with independent cost curves provided by a third-party consultancy and made some adjustments to our cost requests in line with those benchmarks. We tested these options with our customers and stakeholders (see Section 2.6.1) to determine the right approach to take in 2025-30, including were we had choices about the pace and progress to meeting long-term targets and statutory requirements over the period. Our Water Forum challenged and assured the approaches we took to research and engagement with customers to ensure that they were robust and requested additional resource and expertise to ensure that their challenge was robust which we provided.

94. Our service level targets of 'Performance Commitment Levels' (**PCL**s) were informed by statutory targets and how these could meet our vision to be the national leader in providing water and wastewater services (see Section 2.2). We asked our customers about their priorities and how ambitious they wanted us to be. We invited the Water Forum to look at our proposed targets in more detail to understand our investment plans and test if these were sufficiently stretching.[138]

[134] Defra, Storm Overflows Discharge Reduction Plan (**Defra SODRP**), 25 September 2023, SOC514.
[135] NES_BPT_01 - BP24, Business Plan Tables (**BP24 Tables 10.23**), October 2023, Table SUM4, SOC110.
[136] See: https://www.nwg.co.uk/responsibility/environment/bluespaces/.
[137] See: https://www.nwg.co.uk/news-and-media/news-releases/new-partnership-aims-its-focus-on-the-north-east-environment/.
[138] The Water Forum appointed an independent expert to support this review. NES47 - BP24, Appendix A7-06, The Water Forum, Providing challenge to the development of Northumbrian Water's Business Plan for 2025-30 (**BP24 Appendix A7-06 Water Forum Report**), September 2023, SOC056; and NES48 - BP24, Appendix A7-07, The Northumbrian and Essex and Suffolk Water Forum, Expert Challenge Support for PR24, ANNEX A to Water Forum full report (**BP24 Appendix A7-07 Expert Challenge Report**), 2023, SOC057.

95. Under BP24, bills would increase by 22%,[139] compared to an average 31.4%[140] proposed increase across the sector. BP24 was supported by our customers (74% found our plan acceptable)[141] and the Water Forum.[142]

96. BP24 also identified some areas of investment that were still uncertain due to evolving statutory requirements, such as WINEP guidance on continuous water quality monitoring that the EA had said would be revised. We kept Ofwat updated, where relevant providing alternative plans and costs under different scenarios.[143] These changes, which were reflected in the final business plan tables submitted alongside our DDRs, resulted in a proposed 21% bill increase (compared to an average proposed bill increase of 40% across the WaSCs).[144]

2.6.1 Reflecting the views of our customers and stakeholders

97. In BP24 we explained our guiding principle of putting our customers at the heart of our business.[145] We had the same principle in PR19. High quality customer engagement is critical to empower customers and make sure that their voice is heard by everyone involved in developing our long-term strategy and BP24. Our strategy[146] for doing this was built on three objectives, drawing on previous learning and wider best practice:

- **Driving better customer evidence on difficult topics**. This included: introducing new methods of engagement that could address the difficulty of engaging customers on long-term and complex issues (through our new "People Panels" – regional representative groups which included both current and future customers across our operating areas); setting four phases for customer engagement aligned to the development of the business plan, allowing us to fully consider customer evidence at each decision stage; and developing an improved approach to triangulation of customer evidence.
- **Creating robust challenge and assurance**. Ofwat did not require customer challenge groups as it had done at PR19. This flexibility for PR24 led us to use the Water Forum to provide a more strategic, stronger, and deeper role in our process for developing BP24. We strengthened the Water Forum at their request by adding more knowledge and experience and providing resources so that it could independently seek expert advice and challenge more detailed and technical elements of the plan. We invited the Water Forum to set out its own role in challenging our business plan and committed to providing more transparent information and access to operational teams and experts across our business than ever before. We also established a separate Customer Engagement Panel (**CEP**) for the Water Forum, with an independent chair as well as independent research experts and representation from the Water Forum. Whilst the CEP's work started in

[139] This uses Ofwat's calculation (at: https://www.ofwat.gov.uk/regulated-companies/price-review/2024-price-review/business-plans/key-facts-and-data-from-water-company-plans/key-facts-and-data-from-water-company-plans-october-2023/) from October 2023 that combines bills across the North East and Essex & Suffolk areas and is based on the 'alterative return' we presented in our Business Plan. Using the Ofwat allowed return (at that time) would have resulted in a bill increase of 18.5%.
[140] See: https://www.ofwat.gov.uk/regulated-companies/price-review/2024-price-review/business-plans/key-facts-and-data-from-water-company-plans/key-facts-and-data-from-water-company-plans-october-2023/.
[141] BP24 Appendix A7 C and S Engagement, pg.6, SOC022.
[142] BP24 Appendix A7-06 Water Forum Report, SOC056.
[143] NES - BP24, An Update on Our Business Plan 2025-30 (**BP24 Update 07.24**), July 2024, SOC138.
[144] See: https://www.ofwat.gov.uk/regulated-companies/price-review/2024-price-review/business-plans/key-facts-and-data-from-water-company-plans/#bills.
[145] See: BP24, figure 5, SOC014: which places 'Our reputation' at the heart of our business model; BP24 Appendix A7 C and S Engagement, SOC022.
[146] We describe our approach to customer engagement at BP24 Appendix A7 C and S Engagement, SOC022. We also published a library of customer research here: https://www.nwg.co.uk/about-us/research-library/ and a triangulation of that evidence here to inform our plan at NES42 - BP24, Appendix A7-01, PR24 Customer Research - Common PCs Insight Summaries (**BP24 Appendix A7-01 Common PCs Insight**), October 2023, SOC051, for example. Our independent Water Forum challenged (at BP24 Appendix A7-06 Water Forum Report, SOC056) the research we undertook to ensure it was of high quality and the results were reflected in the final business plan.

earnest later in the process it was soon enough to provide an assurance report to our board. This panel would provide independent challenge and assurance on our approach to customer engagement and how we used this to develop our business plan (in addition to meeting the Ofwat principles and standards for research, challenge and assurance).

- **Supporting and improving on the collaborative approach**. We supported the Ofwat and CCW customer approach, providing feedback and commissioning an independent peer review, as well as providing cognitive testing of guidance and encouraging independent review from our Customer Engagement Panel.[147] We also used a variety of research approaches to test and challenge the collaborative research, rather than just relying on a single source of evidence. We introduced an additional stage of "pre-acceptability" testing to support the development of our business plan through deliberative research, with further testing of more detailed areas following discussion and deep dives with the Water Forum.

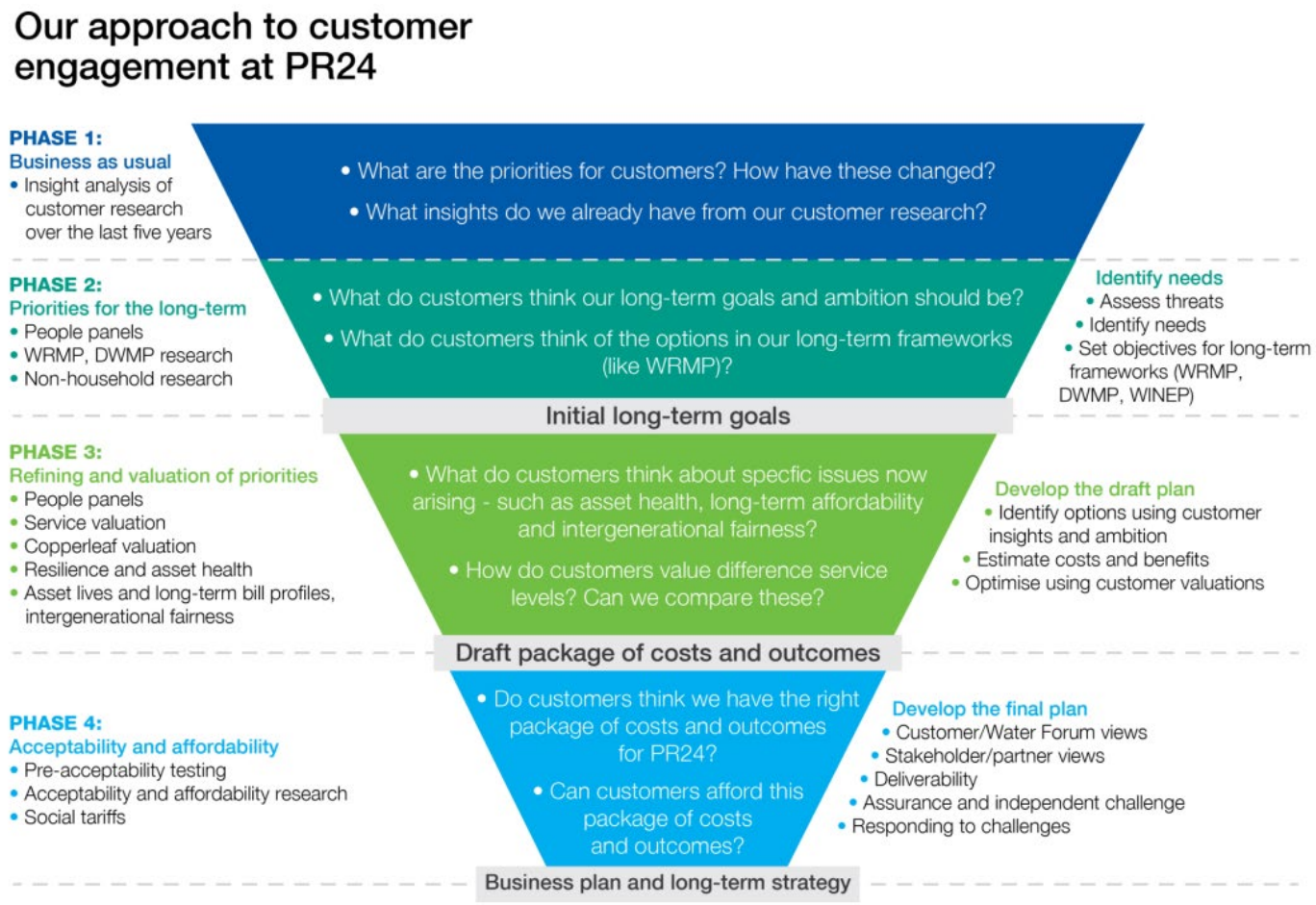
98. Through engagement with customers, we wanted to understand:

- How ambitious should we be in the long term?
- The right balance between the short- and long-term needs for topics such as resilience and asset health?
- What do customers think about intergenerational fairness?[148]

99. We explored these topics with our People Panels throughout the business planning process, discussing options on topics such as net zero, climate change resilience, and asset health.[149] This meant we could explore these issues in detail, and panels could deliberate, ask us for more information, and set challenges or criteria for us to consider. We then used later sessions to discuss further options and more detailed impacts including, importantly, the bill impacts.

[147] NES46 - BP24, Appendix A7-05, Assurance Report from the Customer Engagement Panel (**BP24 Appendix A7-05 CEP Report**), September 2023, SOC055.
[148] BP24 Appendix A7 C and S Engagement, pg.13, SOC022.
[149] NES45 - BP24, Appendix A7-04, PR24 Line of Sight (**BP24 Appendix A7-04 Line of Sight**), October 2023, SOC054, summarises this evidence and provides links to the published research summaries and reports.

FIGURE 10: CUSTOMER ENGAGEMENT STRATEGY AT PR24



Source: BP24 Appendix A7 C and S Engagement, pg.16, SOC022.

100. We explain our triangulation process in our BP24 appendix.[150] For particularly difficult topics, we also explained our decision-making process using these customer insights, in our "line of sight" appendix.[151] Overall, 74% of our customers said they accepted our plan.

2.6.2 Driving long-term and systems thinking

101. As we started to understand the scale of the statutory requirements for investments for PR24, we knew that there would be a need to transform how we operate. We set up a change programme in January 2023 to begin that process and accelerated around £60m of investment into the 2023-25 period to get a head start and deliver benefits sooner. This also gave earlier visibility of our pipeline of work to our supply chain partners. Using our new "Living Water Enterprise" model[152] we are increasing the capacity and capability of those partners to be able to deliver such a large investment plan. We want to remain the top company in England and Wales to work with and we are on track to do so - the annual British Water survey of contractors, consultants and suppliers shows that in 2024,

[150] BP24 Appendix A7 C and S Engagement, pg.17, SOC022.
[151] BP24 Appendix A7-04 Line of Sight, SOC054.
[152] See: https://www.nwg.co.uk/news-and-media/news-releases/northumbrian-water-builds-for-amp8-and-beyond-with-largest-ever-contractual-commitment/.

we were rated the top performer (with a score of 8.7, compared to the industry average of 7.2).[153] By the end of March 2025, we will have spent 97% of our enhancement totex for AMP7.

102. We set long term targets in our LTDS, including setting out how we how we expected expenditure to change over time in specific areas (such as asset health, environmental expenditure, and net zero).[154] This shows that our supply chain will need to remain much larger over a long period – we are more than doubling capacity compared to 2023. We have committed to spend 60p in every £1 in our operating areas to support local jobs and communities and will continue this in 2025-30.

103. We have also set out guiding principles for delivering our environmental priorities in Our Environment Strategy, which we followed when developing options for BP24. These build on the same areas we described in our LTDS:

- **Systems thinking** – taking a big picture view through an integrated catchment management approach;
- **Natural solutions first** – considering natural, sustainable solutions before engineered ones;[155] and
- **Partnership mindset** – collaboration is key. We work hand-in-hand with our customers, suppliers, and stakeholders to co-create mutually beneficial solutions.[156]

104. Innovation is central to how we work across the whole business and 'innovative' is one of our core values that is reinforced and celebrated across the year. In AMP8 we expect our innovation efforts to focus on: alternative energy sources; circular economy and reusing bioproducts; and reducing chemical use.[157]

2.6.3 Developing our approach to asset risk management in BP24

105. The purpose of asset risk management is to manage asset health by maintaining an appropriate balance in performance, risk, benefit and cost under changing conditions. This balance must be maintained over the long term to drive the most efficient costs and performance – failing to do this will lead to higher costs through repairs and replacements made too early or too late, and asset failures. This principle underpins effective asset planning in the international standard for asset management ISO55000.

106. Although all our asset base needs effective capital maintenance, this does not necessarily mean that all assets require the same approach. This means that reaching the 'right' view of capital maintenance expenditure can be challenging. It will vary over time for each individual company and between asset types depending on a range of factors such as the scale of the asset base; age of assets; materials used; purpose and use of the assets; demographic and other pressures; weather and climate impacts; knowledge around asset performance (sometimes not known until much later); and customer and other stakeholder expectations.

107. However, it is clearly not acceptable to simply wait until an asset fails – particularly when these assets are performing critical roles. We must understand the condition of assets and the likelihood of these failing – then we must understand what the consequences of this failure would be (on service levels, safety, and costs). Choosing

[153] British Water, Company Performance Survey of Supply Chain (**BW Survey 2024**), 2024, SOC367.
[154] BP24 LTDS, SOC099.
[155] For example, our original proposals for meeting Nutrient Neutrality and Phosphorus requirements involved nature based solutions and partnership working at significantly less cost to customers. See: BP24, pg.19, SOC014.
[156] BP24 Environment Strategy, Slide 2, SOC081.
[157] BP24, pg.30, SOC014.

the right moment to repair or replace an asset is critical, basing this on probability modelling (a risk-driven approach).

108. We welcomed Ofwat's strategic objective for a long-term focus and identified investment in asset risk management as a priority in our submission to Ofwat's Future Ideas Lab in June 2022, calling for three actions for PR24:

- Ofwat should allow investment cases (similar to "enhancement" cases at the last price review for additional investment in capital maintenance or asset replacement where there is a clear need) for additional investment that cannot be funded from the existing base cost allowances.
- Companies should be required to show that they are effective in managing their asset base.
- Customers could be protected by clearly defining the outputs or outcomes that companies must deliver.[158]

109. We also called for three key actions for the longer term:

- building a better framework for measuring and assessing asset health to operate alongside AMMA;[159]
- explore a role for an independent party to assess asset health and asset management across the sector, comparable to the role undertaken by the independent rating agencies on financial resilience; and
- explore changes to the cost assessment framework for price controls to better reflect differences in asset health across the sector.[160]

110. In December 2021 Ofwat explored how a forward-looking element could be incorporated into the setting of base costs allowances for the 2024 price review.[161] However, the final methodology confirmed an approach broadly equivalent to PR19, with any "step change in efficient maintenance expenditure" being dealt with through the cost adjustment claim process.[162] A fuller description of the development of the regulatory framework is set out in Section 4.2.2 and Appendix 1 Section 2.

111. At the same time, our asset management transformation programme (see Section 2.4.3) had helped us to gain a better understanding of the health of our assets and to develop operational, maintenance and investment strategies to ensure we maximise value from our assets for benefit of our customers and the environment. We identified that making sure we have a programme of replacement assets sufficient to maintain asset health in the long term was an important priority for AMP8 and beyond.[163]

112. As part of this, we commissioned a review from Jacobs to provide an assessment of our asset health position to help us to make sure that our approach is aligned with best practice.[164] This identified that our understanding of the asset health of civil assets at water and wastewater treatment works was lower than many other asset classes.[165]

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[158] NES - Regulating for the long-term: resilient essential services require healthy assets (**NWL Long-term Asset Health 2022**), 2022, Slide 3, SOC279. See also Appendix 1, Section 4, Figure 10, row 21.
[159] Ofwat had just published the Ofwat, Operational Resilience Discussion Paper (**Ofwat Operational Resilience 2022**), April 2022, SOC368.
[160] NWL Long-term Asset Health 2022, SOC279.
[161] Ofwat, Assessing base costs at PR24 (**Ofwat PR24 Base Cost Assessment 2021**), December 2021, section 5, SOC369. See also Appendix 1, Section 4, Figure 10, row 18.
[162] Ofwat, PR24 Final Methodology: Creating tomorrow, together, Our final methodology for PR24 (**FM24**), December 2022, pg.79, SOC484; Ofwat, PR24 Final Methodology - Appendix 9 Setting expenditure allowances (**FM24 Appendix 9 Expenditure**), December 2022, pg.50, SOC292.
[163] NES09 - BP24, Appendix A8, Resilience (**BP24 Appendix A8 Resilience**), 28 September 2023, pg.3, SOC023.
[164] Jacobs, Asset Health Final Report, Northumbrian Water (**Jacobs Asset Health 2022**), 4 February 2022, SOC593.
[165] This was because these are long-life structures with low failure rates, and so we did not inspect these as regularly as other assets, and we could not make as much use of analytics to understand future failure likelihood (as this needs a high number of assets to be effective).

113. In response to this we carried out an extensive review of the criticality and health of all the civil structures at our treatment works - assessing wellness, fitness and life expectancy.[166] This review process is now embedded in our business-as-usual process and enables us to track health and criticality in real time. We also assessed our different asset classes against stability of investment, asset criticality and ability to defer investment.[167]

114. This analysis identified that:

> …the sector as a whole is not investing enough in asset health and that there will need to be increased capital maintenance in future, in order to maintain risk and service for customers and the environment. However, the precise long-run sustainable rate is not yet known. The approach to cost assessment needs to evolve to consider forward-looking aspects of asset health and criticality and we need to develop new asset health metrics to support these approaches so that it is clear what is being delivered for the increased investment.
>
> However, it is not in customers interests to let these problems get worse and increase risk where there are clear, "no regrets" interventions that we can take now in areas where there are increased long-term needs.[168]

115. Using this analysis of investment stability, asset criticality and scope or deferment, as well as recognising the position taken by Ofwat in the PR24 methodology, we developed a case for additional investment on asset risk management as detailed in Section 4.3.1.

116. We also sought the views of customers to inform our approach to asset health in BP24. In particular, this focused on the right *phasing* of investment, as there were decisions to make about whether to make proactive investments or accept a higher reactive cost in the future. We included bill estimates now and in the future under different phasing scenarios.

> Customers described this decision as a "dilemma between a short-term fix and a long-term plan". Some customers were cautious about spending money before it is necessary and noted that the future was uncertain. They prioritised affordability over asset health. The majority of customers thought we should do more, noting that this could prevent costs and problems escalating in future years. They also valued safe, clean spaces for workers and communities (enhancements and other service area summaries, NES43). In the North East, customers were more likely to favour bill reductions.
>
> Customers asked for a "hybrid, middle ground" option, that focuses on where we know exactly where work is necessary now, and where this has an immediate impact on service (and safe, clean spaces). This middle ground would be more affordable now, without taking too much risk on problems escalating in future years (enhancements and other service area summaries, NES43).
>
> Investments to replace concrete tanks at service reservoirs, water treatment works and wastewater treatment works were viewed as a high priority for respondents across all regions as they relate to the

[166] BP24 Appendix A3-21 Asset Health, Sections 4.1 and 4.2, SOC045.
[167] BP24 Appendix A3-21 Asset Health, Figure 3 and Figure 19, SOC045.
[168] BP24 Appendix A3-21 Asset Health, pg.46-47, SOC045.

> main function of the company - to provide a safe water supply. Most customers included asset health in their "ideal plan" (enhancements and other service area summaries, NES43).
>
> In our Affordability and Acceptability Testing qualitative research, customers supported our "medium" investment in asset health – seeing this as keeping pace with the required level of work, while allowing a high level of investment in other areas. In Essex and Suffolk, customers often preferred a higher phasing option – which included increasing our mains replacement in this area.[169]

117. We developed our plan for asset health based on the criteria from customer engagement – that is, to focus on areas where we know exactly what work is necessary now, and where this has an immediate impact on service.[170] This influenced what made it into our BP24 proposals, as well as how they developed following DD24 (see Section 4.3).

2.6.4 Developing our approach to climate resilience in BP24

118. Our updated Climate Change Adaptation Report in 2021[171] highlighted the level of public concern about climate change and the growing appetite from customers to tackle this. These findings, alongside a wider comprehensive review of our resilience framework and an assessment of our current level of risk exposure[172] showed that climate change was a priority area of growing risk that we needed to adapt to.

119. We wanted to improve our understanding of the potential for future climate change to impact our infrastructure and operations – in particular, looking at the regional impacts and how risks might impact on our services now. We commissioned Mott Macdonald to carry out an independent study as a preliminary risk assessment, to understand the risks that were most important in our areas.[173] This assessed the main climate hazards including long-term climate change and extreme weather events which impact the North East (water and wastewater services) and South East (water only service) areas of operation and how their frequency and severity was likely to evolve in the future up to 2050.

120. This study concluded that climate change would result in a net increase in risk to our services, with particular "very high" risks identified as flooding and wind in the North East and drought, soil moisture deficits and wind in the South East.[174] We developed an enhancement case for flooding and power resilience based on mitigating these risks.[175] That enhancement case includes our analysis of the increasing number of pollution incidents arising from third party power failures in both normal operating conditions and in storms (see Section 4.5).

121. Building on the feedback of our customers who wanted assurance the impact of climate change would mean increased risks to services, such that our proposed investment is really needed, we developed these criteria for assessing our proposed investments:

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[169] BP24 Appendix A7-04 Line of Sight, pg.25, SOC054.
[170] BP24 Appendix A7-04 Line of Sight, Section 10.3, SOC054.
[171] NES - Climate Change Adaptation Report (**NWL Climate Change Adaptation 2021**), December 2021, SOC280.
[172] BP24 Appendix A8 Resilience, pg.18-28, SOC023.
[173] We published this with NES52 - BP24, Appendix A8-01, PR24 Climate Resilience Phase A - Contextualisation by Mott MacDonald (**BP24 Appendix A8-01 Climate Resilience A**), July 2022, SOC061.
[174] BP24 Appendix A8-01 Climate Resilience A, pg.viii, SOC061.
[175] BP24 Appendix A3-18 Power Resilience NES32, SOC042.

- whether there is a high likelihood that climate change would have an impact on our services in the short or medium term (under any future climate change scenario); and
- whether this is likely to have an immediate impact on services.[176]

122. Applying this framework in our customer research, we identified supply interruptions from water treatment works and pollution incidents from sewage pumping stations as two of the key areas.[177] Other potential areas of future risk (e.g. addressing algae growth or increases in temperature) were considered but not progressed in light of the uncertainty about the impacts, timing and mixed customer views.[178]

123. Our customers supported our "medium" option for climate change resilience, which included investments in power resilience.[179]

2.6.5 Bills and affordability

124. We were the first water company to set an ambitious goal to eliminate water poverty in our operating areas by 2030, despite serving some of the most deprived customers in the UK, with lower-than-average household incomes. This goal was a significant commitment in our inclusivity strategy and has influenced wider national debates about the scope and opportunity for a national social tariff. By the end of 2022, we had helped over 190,000 customers in water poverty in our areas and had reduced the proportion of households in our area spending more than 3% of their income on water bills from 22% to 9.6%.[180] The 18% bill reduction in BP19 for 2020/21 (the largest bill reduction of any company across the sector) played a big part in achieving that, but high inflation and stagnating wages have meant that bills have increased as a proportion of household incomes.

125. For PR24 we wanted to do everything we could do to keep bills as low as possible for all customers. This meant challenging ourselves to be more efficient, but also "changing the conversation" – including pushing back to the Government and regulators to propose alternative methods of meeting statutory outcomes where customers asked us to advocate for these.[181] We discussed the right balance between investment and bill increases throughout our customer engagement, considering our forecasts of bills in the long term based on the pressures from increasing environmental awareness and needs, climate change, population growth, and other long-term risks.

126. Our modelling of water affordability in BP24 showed that our ambitious goal to eliminate water poverty in our operating areas would be increasingly difficult to meet and would require significantly more funding and effort to achieve than in 2020-25.[182] We reviewed and updated our affordability and inclusivity strategy, and increased our affordability support package by **more than four times** (compared to 2020-25), including a substantial increase in our social tariff as well as through innovation and partnership working. Our shareholders will also provide significantly more financial support (**£20m**) to customers through a new hardship fund. Alongside our social tariffs, this also includes: supporting customers through our compulsory metering programme, identifying customers who need assistance and providing free advice and leak repairs; actively promoting and encouraging customers to use

[176] BP24 Appendix A7-04 Line of Sight, Section 7, SOC054.
[177] BP24 Appendix A3-18 Power Resilience NES32, pg.40, SOC042.
[178] BP24 Appendix A7-04 Line of Sight, pg.20, SOC054.
[179] As set out in BP24 Appendix A3-18 Power Resilience NES32, pg.41, SOC042.
[180] NES02 - BP24, Appendix A1, Customer Affordability (**BP24 Appendix A1 Affordability**), October 2023, pg.3, SOC016.
[181] See: BP24 Appendix A1 Affordability, pg.4, SOC016.
[182] See: BP24 Appendix A1 Affordability, pg.4, SOC016.

debt advice providers to help maximise their income; and working with partners to develop online benefit checking and tariff eligibility tools to help customers get the support they are entitled to.[183]

127. Our bill rise proposed in our DDR was the lowest of the sector and our average combined bills will be the lowest in the sector in 2030.[184]

2.6.6 Ofwat's assessment of the quality and ambition of our business plan

128. Ofwat carried out QAA[185] of all business plans.[186] Compared to the sector leading companies that were categorised as 'outstanding' (Severn Trent and South West Water) our plan was assessed as passing a similar number of the quality tests (this was judged as pass/fail in the round) and also had 'high' ambition on the stretch in service performance from base expenditure. Ofwat recognised our plan as having '*reasonable ambition across most areas of the assessment*' – but concluded that it fell short of its '*sector leading*' standard for ambition.[187] This is because Ofwat assessed our base cost efficiency as '*poor*' and our enhancement case efficiency as '*moderate*' – so overall, we could not meet the criteria for an '*outstanding*' plan. This meant Ofwat's overall categorisation of BP24 was '***standard***'.[188]

129. We do not consider that this is an accurate reflection of our efficiency in practice. Instead, it reflects errors in Ofwat's approach which resulted in the efficiency calculation not being a like-for-like comparison for enhancement costs. On base costs we were effectively penalised for not adopting the allowances from Ofwat's models.

130. We presented our asset health investment case as an enhancement case, given that it calls for a proactive increase in the amount of capital maintenance activity compared to that allowed in previous periods (see Section 4.3.2). The associated step-up in expenditure is, therefore, additional to the expenditure covered by the base models. Ofwat, however, treated it as a base cost adjustment claim and so assessed it as an 'inefficiency' against the allowances provided by its base cost models. This had the effect of increasing the gap between our business plan forecasts for base costs and Ofwat's DD24 assessment by £112m. Without the asset health enhancement case, our base cost efficiency would have been improved in Ofwat's assessment. Applying this test correctly would have reduced our base cost gap from 10% to 7%.[189] This would have been a smaller base cost gap than Severn Trent (9%) who were given a 'high' rating for base cost efficiency. Applying the same logic to our position would have given us a 'high' rating for base cost efficiency rather than 'poor'.

131. We also note that the QAA did not consider companies' business plan proposals for ongoing efficiency of 'frontier shift'. Had Ofwat done so, our proposal was much more ambitious than either of the 'outstanding' companies.

132. The assessment of our enhancement cost efficiency was also incorrect. Ofwat's enhancement company efficiency challenge model published at DD24 showed that we were efficient for water (efficiency score capped at 100%) but

[183] See: BP24 Appendix A1 Affordability, pg.5, SOC016.
[184] See: key-facts-and-data-from-water-company-plans/#bills.
[185] Details of the QAA assessment criteria are set out in the Frontier Sector Report, pg.35-37, SOC418.
[186] For an overview of how this fit into the overall PR24 regulatory price review process, see Frontier Sector Report, pg.24, SOC418.
[187] Ofwat, PR24 Draft Determinations: Northumbrian Water - Quality and ambition assessment Appendix (**DD24 NWL QAA**), 11 July 2024, pg.1, SOC298.
[188] FD24 QAA Summary, pg.3, SOC305.
[189] NWL Other Databook 4.

not efficient for wastewater (106%).[190] We demonstrated to Ofwat in our DDR that the wastewater efficiency calculation was impacted by an unambiguous error – namely the inclusion of IED expenditure when in fact we had none included in our plan at the time.[191] Corrected for this error, our wastewater efficiency score would be 100%, and our overall enhancement cost efficiency should consequently have been scoped as 'high' rather than 'moderate'.

133. Ofwat acknowledged the error with the wastewater enhancement efficiency model and corrected this for it in FD24. However, Ofwat made two further and different errors in the equivalent model at FD24 which, again, showed an incorrect calculation of efficiency. In response to our query on this Ofwat has acknowledged the unambiguous error but declined to correct it, despite the broader impact on our enhancement totex allowance. This is further addressed in Section 7.

134. We understand that Ofwat's QAA is taken "*in the round*" so whilst we raised these errors and concerns with Ofwat in our engagement meetings, we did not seek to have its assessment corrected as part of our DDR. Nor are we asking the CMA to redetermine the QAA in the context of this redetermination, despite the benefits attached to achieving 'outstanding' company status and our concerns with a process that disincentivises companies from identifying long term issues and putting forward proposals to address them. This is not why we sought to develop a high quality business plan. However, we do consider that it is important to establish the underlying flaws to demonstrate that our business plan is, in fact, efficient under Ofwat's cost assessment models (when we correct for these clear errors) and that our plan could (and arguably should) have been categorised as outstanding.

[190] Ofwat, PR24 Draft Determinations: Shallow Dive Spend - Enhancement Company Efficiency Challenge (**DD24 Shallow Dive**), June 2024, tab Wastewater Enhancement – Cell AT10, SOC299.
[191] NWL DDR, SOC191.

3 THE WATER SECTOR IN CONTEXT

- The regulatory framework for the water sector in England and Wales is complex – an overview is provided in a report prepared by Frontier Economics.[192]
- The UK is ranked first out of 180 countries for sanitation and drinking water.[193] Since privatisation the sector can demonstrate significant improvements in many service areas including drinking water quality, river water quality, water supply interruptions, leakage, pollution incidents and sewer flooding.[194] This is set against a backdrop of increased regulatory complexity and tightened environmental standards. However, there has been a marked recent deterioration in overall levels of customer trust, driven in part by environmental concerns around sewage spills.[195]
- Productivity growth rose steeply in the sector post-privatisation but has remained at a plateau since 2010, consistent with the broader economy.
- Whilst service performance is improving the sector has not kept pace with the stretching regulatory targets set at PR14 and PR19 which, on balance, appear to have been poorly calibrated. No company has been able to meet the PC levels Ofwat set within the cost allowances provided. Instead, there have been totex overspends and significant ODI penalties. The average company has not earned the allowed return and falling dividend yields are now well below comparator benchmarks.
- Risk in the sector is increasing driven by a range of factors including a significant step up in the investment programme with greater construction risk. This increase in risk is visible in rating agency downgrades, higher debt costs and shorter-term betas of the listed water companies.
- Ofwat's FD24 envisages a material step up in investment to c.£104bn[196] over the next five years with over 90% of the sectors investment programmes driven by new statutory requirements. Long-term plans suggest that this higher investment model is likely to persist long into the future and it will require substantial new equity and debt capital that will need to be attracted to the sector at a challenging time.
- There are numerous mechanisms in place to ensure the financial resilience of water companies. Whilst there are sensible ongoing debates about the appropriate levels of resilience, current levels of leverage across the sector are not inconsistent with other capital-intensive utilities or infrastructure businesses.
- Two of the more material challenges actually facing water companies include the need to increase investment in capital maintenance due to the absence of sensible rates of renewal for ageing infrastructure and the need to adapt to climate change in particular the prevalence and impact of severe weather events. Both of these challenges were considered within our BP24.

[192] Frontier Sector Report, SOC418.
[193] See: https://epi.yale.edu/measure/2024/H2O.
[194] Frontier Sector Report, SOC418.
[195] CCW Water Matters 2024, SOC359.
[196] FD24 Expenditure, All totex, Table 55, SOC309.

3.1 SECTOR OVERVIEW

135. In order to undertake a redetermination, the CMA will place itself in the shoes of Ofwat, the economic regulator for the water sector. To assist the CMA Frontier Economics produced a report[197] providing an overview of the water sector in England and Wales and its regulation. That report is intended to be a high level factual overview and covers:

- **Sector fundamentals**: an overview of the water sector, from upstream resources to downstream distribution. It outlines water companies' roles since privatisation in 1989 and their interactions with consumers, communities, the environment, and the economy. It then sets out key trends shaping the sector, including population growth, changing public expectations, and climate change;
- **Regulatory framework**: a description of the key tenets of the regulatory regime. It outlines how water companies are regulated, as well as the role of the various regulatory agencies that oversee the price control process and the process by which allowances are set; and
- **Evolution of the sector**: key facts and figures, as well as further contextual evidence, on how water companies have performed since privatisation. It explores themes of public health, protecting the environment and supporting economic growth. It highlights how companies have adapted – and continue to adapt – to meet evolving regulatory requirements and shifting public expectations.

136. Additional commentary on the legal and regulatory framework, including the role of the CMA's redeterminations in setting future price controls, is set out in Appendix 1 Section 2. In the following sections we provide some observations on the performance of the sector to date and the challenges it faces in AMP8 and the longer term.

3.2 PERFORMANCE HAS IMPROVED, BUT THERE ARE SIGNIFICANT CHALLENGES

137. As was recognised by Sir John Cunliffe in the launch of the Call for Evidence, since privatisation the performance of the water sector has improved across a range of metrics: we have "world-leading drinking water"; "leakage is down by over a third"; we have safer and cleaner bathing waters; and greater service reliability with fewer and shorter service interruptions.[198] This is reflected in international rankings which (although imperfect) rate the performance of the sector as leading in various measures.[199] Across the same time period capital investment has roughly doubled[200] and efficiency has increased with decent productivity growth in comparison to other sectors.[201]

138. However, it is undeniable that the water sector has been subject to significant public scrutiny in recent years. There is a clear need to take action to address the levels of trust and satisfaction in the sector and how it is regulated.

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[197] Frontier Sector Report, SOC418. See also John Earwaker, The England & Wales Water Industry: Economics / Economic Regulation (**Water Industry Earwaker Report 04.24**), 22 April 2024, SOC405.
[198] Cunliffe Speech Feb 2025, SOC480; Frontier Sector Report, Section 3, SOC418. See also Water Industry Earwaker Report 04.24, pg.7 – Figure 3, SOC405.
[199] While international comparisons are always imperfect, the UK water sector already appears to perform well compared to other countries across a range of indicators. UK Water ranks 1st= for 'drinking water and sanitation' across 180 countries- See: https://epi.yale.edu/measure/2024/H2O. The UK has some of the best customer service in Europe, see: Global Water Intel, International Comparisons of Water Sector Performance Report (**GWI International Comparisons**), SOC413. The UK invests more in these services than most other European countries but costs to customers remain close to the EU average - real bills have been flat or fallen since 2009, see: EurEau, Europe's Water in Figures: An overview of the European drinking water and wastewater sectors (**EurEau EU Water Figures 21**), 2021, SOC414. An interesting wastewater comparison was also provided by Moody's which concluded that the bad reputation 'is not wholly deserved', this can be found here: Moody's Ratings, Regulated Water Utilities - UK: Bad reputation is not wholly deserved (**Moodys 10.2023 Reputation**), 16 October 2023, SOC415.
[200] Frontier Sector Report, pg.53, SOC418.
[201] Frontier Sector Report, pg.54, SOC418.

This will be a key area of focus for the various reviews of the sector currently underway (see Appendix 1 Section 3.4.2).

3.3 CHALLENGES WITH THE REGULATORY FRAMEWORK AND ITS APPLICATION

139. At the same time that service performance has improved, companies have financially underperformed against the previous two price controls: PR14 and PR19 (see Appendix 1 Section 3.1). Companies have overspent on totex by 1.2% in AMP6, and by 12% in AMP7[202] and been subject to ODI penalties in excess of £5bn over the last nine years.[203] For the 2020 to 2025 period, no company has matched Ofwat's "notionally efficient" company. No company has met the UQ benchmarks set at PR19 for costs. The impact is that in the most recent price control period the sector is actually underperforming against the allowed return on average,[204] in marked contrast to returns in the energy sector which are much higher.[205]

140. Ofwat's outcome incentive mechanisms are intended to provide increased returns for companies who outperform the regulatory targets, and decreased returns for companies who do not. For the period 2020 to 2024, only three companies outperformed the ODI regulatory targets – and two of those were because of bespoke performance commitments set only for those two companies.[206] No company has hit all their performance commitment levels (**PCL**s) either within the cost allowances provided[207] and the average sector ODI RORE has moved from **-0.09%** in AMP6 to **-0.66%** in AMP7.[208] In Ofwat's Water Company Performance Report 2023-24, all companies are categorised as either "average", or "lagging behind".[209]

141. This raises the question of how improving service performance should be reconciled with these financial indicators, and the role that is played by past regulatory decisions:

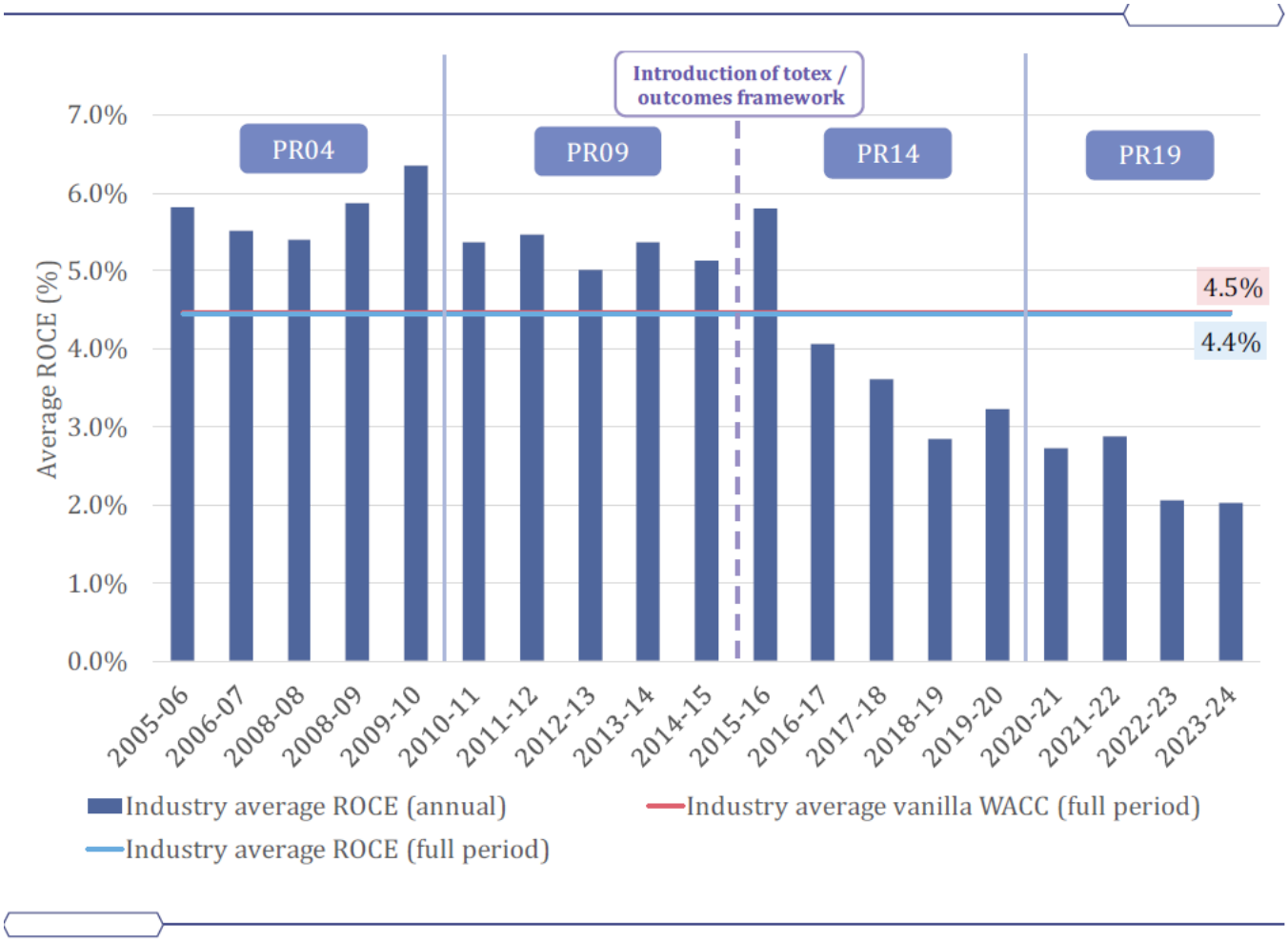
> In summary, we are looking here at an industry that is getting better at what it does, but doing so more slowly than regulators wanted, spending more than anyone thought would be the case, and suffering financially as a result. There are two conclusions that one might draw at this point. One take might be that water companies just haven't been up to the task recently and deserve at least some of the criticism they have been receiving. But an alternative view might be that, with the benefit of hindsight, companies were set an impossible challenge five years ago and are now paying the price for regulatory miscalculation. It is difficult from the outside to know how much weight to give the first narrative versus how much credence to give the second explanation, but the fact that multiple companies all with different management teams and different shareholders are having broadly the same experience at the same time suggests that the latter view merits some weight.[210]

[202] See Appendix 1 Section 3.1 Figure 3 - AMP6/AMP7 Financial Underperformance; Frontier Sector Report, pg.60, SOC418.
[203] WCPR Data 23-24, SOC444; Ofwat, Service Delivery Report 2019-20, SDR Analysis Model (**Ofwat SDR Model 2020**), 03 December 2020, SOC336.
[204] See Appendix 1 Section 3.1 Figure 4 - Sector Return on Regulatory Equity for AMP7 to date and Figure 5 - Overall industry average ROCE performance against real vanilla WACC (2005-06 to 2023-24).
[205] See Appendix 1 Section 3.1 Figure 6 – Energy Sector Returns.
[206] WCPR Data 23-24, RoRE by price control, total £m rewards/penalties, SOC444.
[207] See also Water Industry Earwaker Report 04.24, SOC405.
[208] As shown in Figure 12.
[209] Ofwat, Water company performance report 2022-23 (**WCPR 22-23**), September 2023, SOC446.
[210] Water Industry Earwaker Report 04.24, pg.8, SOC405.

142. We consider that this is indicative of a fundamental issue with the regulatory framework and how it has been applied. This is consistent with concerns expressed by companies to the CMA during the PR19 redeterminations.

143. Figure 11 shows that over the last 20 years the industry has, on average, earned returns in-line with the allowed returns with no systematic outperformance. Specifically, looking over the period 2005-06 to 2023-24 (the full period over which data is available to us), the industry earned average return on capital employed of 4.4% (relative to an industry average vanilla WACC of 4.5%). The uncertainty in RoRE has also grown over time and continues to grow as a greater variance in Totex overspend, ODI underperformance, and financing underperformance increases the distribution of potential returns facing companies and their investors.[211]

FIGURE 11: OVERALL INDUSTRY AVERAGE ROCE PERFORMANCE AGAINST REAL VANILLA WACC (2005-06 TO 2023-24)



Source: Economic Insight, Evidence on overall company returns in the water industry (**EI Company Returns 2025**), 21 March 2025, Figure 1, SOC004

Note: (i) The industry average ROCE performance and the average real vanilla WACC are calculated as an RCV-weighted average across all companies. (ii) The averages for the period are calculated as simple averages across each individual year.

144. In the most recent price control period, the sector is actually underperforming against the allowed return on average and over the past two price control periods, on average, companies have overspent against their cost allowances and earned service performance penalties which have been somewhat offset by financing outperformance. As we

[211] Frontier Sector Report, p57

set out in Section 4 there is a risk that without intervention from the CMA, FD24 will lead to similar outcomes in five years' time.

145. At the same time Ofwat has often exhibited a strong 'in principle' and inflexible objection to arguments that challenge the core elements of its price control methodology. For example, investment cases that take base cost allowances beyond those provided by Ofwat's econometric models are almost universally rejected (see Section 4.2.3.2). Ofwat's efficiency challenge is applied much more powerfully to non-statutory base cost investment needs than statutory enhancements (e.g. WINEP, WRMP, DWMP, etc) (see Figure 19). Ofwat has also not been open to new evidence in relation to the cost of capital, an area where most would accept the methods have limitations and where alternative evidence, new alternatives to the Capital Asset Pricing Model (**CAPM**) or other cross-checks ought to be helpful (see Section 5). Rather than being open and curious to explore new evidence Ofwat often seems more focussed on defending its long-held positions or finding creative ways to dismiss that evidence. Overall, Ofwat's approach has undoubtedly contributed to the challenges impacting the image of the industry and trust in the sector.[212]

3.4 RISK IS INCREASING

146. Looking ahead, the water sector is faced with significant external risks[213] that will impact operational performance and the attractiveness of the sector to investors including:

- **uncertainty caused by the dynamic pace of regulatory change:** PR24 has been characterised by the volume and pace of changes to statutory and other regulatory requirements. That has influenced the shaping of business plans but caused challenges for the price review, given the timing of some changes late in the process. This trend is likely to continue through AMP8 given the scale of regulatory review currently underway (see Appendix 1 Section 3.4.1);
- **public, political and regulatory scrutiny has increased**: greater public focus on water companies following coverage on storm overflows and drought restrictions has been reflected in the number of independent reviews, investigations and enforcement actions (see Appendix 1 Section 3.4.2);
- **unprecedented levels of investment at PR24**: The £44bn[214] (in 2022/23 prices) enhancement investment across the sector over AMP8 represents a major step up in expenditure and activity. Long-term plans suggest that this higher investment model is likely to persist long into the future. This increases construction risk with respect to the sector's ability to deliver on time and on budget, given the reliance on supply chains that are in demand from multiple sectors. It also necessitates substantial new equity and debt capital that will need to be attracted to the sector at a challenging time (see Appendix 1 Section 3.3.2);
- **addressing the impact of climate change:** extreme weather events, such as droughts and flooding, are expected to increase in future. This can have a direct impact on the provision of reliable and safe supply to

[212] For instance, Ofwat has not classified any water company as above average in the last two water company performance reports: Ofwat, Water company performance report 2023-24 (**WCPR 23-24**), October 2024, SOC445; and WCPR 22-23, SOC446. It is illogical to suggest that no water company is performing above the average (or leading) **for the water sector** given there are several classed as lagging. Ofwat states: "We therefore identify 'top performers' relative to the sector where applicable" but apply targets or 25th percentile requirements as thresholds rather than the sector medians.
[213] For a further analysis of these risks, please refer to NES06 - BP24, Appendix A5, Risk and Return (**BP24 Appendix A5 Risk**), 30 September 2023, pg.17-23, SOC020.
[214] FD24 Expenditure, Table 54, SOC309.

customers, increase underlying cost risk and make capacity planning more challenging (see Section 3.6); and

- **tighter macroeconomic conditions:** put simply, we are operating in vastly different macroeconomic conditions compared to the market environment at PR19, for example the CMA's RFR at PR19 was -1.6% to -1%, compared to Ofwat's at PR24 of +1.52% (see Appendix 1 Section 3.4.5).

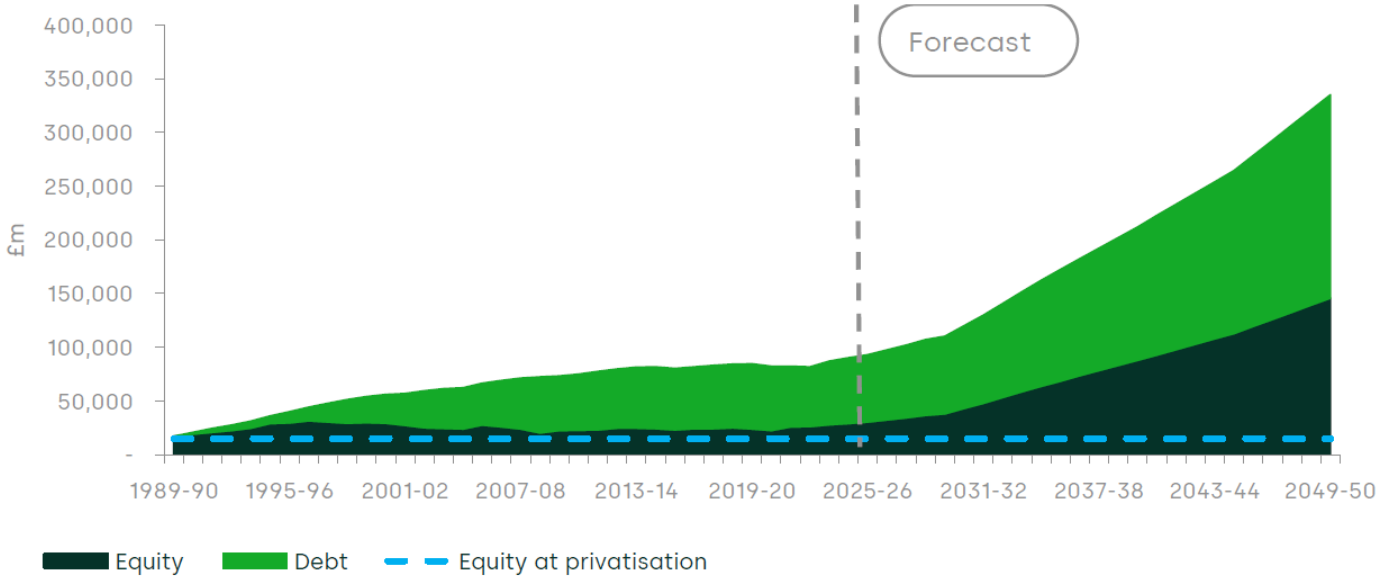
147. Ofwat's gradual tightening of the regulatory regime is itself also increasing risks, such as the mis-calibrated outcome incentive mechanisms (see Section 3.3) and its reluctance to adequately fund asset maintenance, thus increasing risk to the sector's operational resilience (see Section 3.6). That said, it is important to acknowledge the additional risk mitigants Ofwat has added for PR24. The energy, wages and materials real price effect (**RPE**) reconciliation adjustments are helpful totex risk mitigants, as are the lower cost sharing rates for enhancements and large schemes and the bioresources cost sharing. The aggregate sharing mechanism (**ASM**) and the outturn adjustment mechanism (**OAM**) (although flawed – see Section 5.6.1) are also mitigants for more extreme variations. These do not alter the inherent asymmetry in the package but do mitigate the more excessive impacts of them.

148. This increase in risk is also visible in the real-world data including rating agency downgrades, higher debt costs and shorter-term betas of the listed water companies (see Appendix 1 Section 3.4.4).

149. Reflecting on the unprecedented level of investment, this is clearly a significant step change compared to the last price control and at any time since privatisation, as demonstrated by the impact on RCV in Figure 12. Capital intensity (i.e. the size of new investment relative to the existing asset base) is widely recognised as a significant risk factor by regulators and the government.[215] Using a framework it developed to assess the risk profile of the PR24 capital programme, KPMG advised that the industry's capital programmes for PR24 and beyond are large in scale (with an implied 35% increase in RCV across AMP8), atypical relative to the investments in previous price controls and likely to exacerbate exposure to several risk drivers. KPMG concluded that because these risk drivers have systematic risk elements, the step change in capital intensity was likely to increase systematic risk.[216]

[215] Ofgem, RIIO-T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas – Overview (**Ofgem RIIO-T1 Final Proposals 2012**), 17 December 2012, paras. 3.15 and 3.19, SOC350; CAA, Economic Regulation of BAA London Airports (Heathrow, Gatwick, and Stansted) 2003 – 2008 CAA Decision (**CAA Q4 Decision 2003**), 26 February 2003, para. 4.67, SOC351; Secretary of State, Specification of the Thames Tideway Tunnel project: reasons notice (**Thames Tideway Reasons Notice 2014**), 05 June 2014, paras. 22-24, SOC352.
[216] NES89 - NWL Response to Ofwat DD24, KPMG Estimating the Cost of Equity for PR24 (**NWL DDR KPMG CoE**), August 2023, pg.72, SOC225.

FIGURE 12: WASC RCV SINCE PRIVATISATION, SPLIT BY DEBT AND EQUITY (2022–23 REAL)



Source: Oxera, Investability at PR24: Final Report for Water UK (**Oxera PR24 Investability**), 27 August 2024, pg.22, Figure 2.5, SOC416. Note: RCV growth forecast based on PR24 Draft Determinations for AMP8 and LTDS forecast enhancement capital expenditure (**capex**) for the following periods, for AMP9 onwards maintenance capex is assumed equal to the RV run-off rate, all new capex from AMP9 assumed to be financed by notional capital split at 55%. 'Equity at privatisation' refers to equity on companies' balance sheets at the point of privatisation.

3.5 FINANCIAL RESILIENCE

150. Ofwat places a strong emphasis on the importance of monitoring financial resilience. Ofwat considers various financial metrics including gearing and credit ratings and also looks closely at dividends.[217] Ofwat recognises the importance of dividends for a company's ability "to raise the equity finance needed to fund investment" and expects that "well performing companies to be able to generate a reasonable return for investors and to be able to pay dividends".[218] The important role of debt in funding investment is also acknowledged by the independent water commission:

> There is a perception among some commentators that the increase in debt has been a bad outcome. However, debt has an important part to play in financing company investment. This means that some level of debt allows water companies to spread investment costs over time. Without debt, costs would need to be funded up-front from customer bills, which would require significant bill increases as water company costs typically exceed in-period revenues. Companies can and do raise equity to finance investment, rather than raising debt, but equity is typically more expensive than debt[219]

151. Whilst there are sensible ongoing debates about the appropriate levels of resilience, current levels of leverage across the sector are not inconsistent with other capital-intensive utilities or infrastructure businesses (see Appendix 1 Section 3.3.1). Similarly, falling dividend yields are now well below comparator benchmarks (See Appendix 1 Section 3.3.2).

[217] See, for example, Ofwat Financial Resilience 23-24, SOC340.
[218] Ofwat Financial Resilience 23-24, pg.34, SOC340.
[219] Defra, Call for Evidence: Independent Commission on the Water Sector Regulatory System (**Defra Independent Water Commission 2025 – Evidence**), 27 February 2025, pg.121, SOC464.

3.6 TACKLING OUR OPERATIONAL RESILENCE AND THE IMPACT OF CLIMATE CHANGE

152. Two of the more material challenges facing water companies over AMP8 and beyond relate to ensuring a sustainable approach to maintaining operational resilience, as well as taking sensible steps to manage the impacts of climate change.

153. The need to invest in capital maintenance is recognised as a central element of the functions of a water company, including its ability to meet service expectations (see Appendix 1 Section 3.3.1). However, the current rates of renewal for ageing infrastructure are not sustainable and greater investment in asset risk management is required to ensure operational resilience in AMP8 and beyond (see Section 4.2).

154. There is also a clear need to adapt to climate change, in particular the prevalence and impact of severe weather events, taking into account the range of different risks companies will face, to differing degrees of severity (see Appendix 1 Section 3.3.2). This can have direct impacts on customers, for instance through flooding risk or supply interruptions caused by power outages.

155. Both of these challenges were addressed in our BP24 and form a central part of our request to the CMA for a redetermination (see Section 4).

4 ENSURING LONG TERM RESILIENCE

- Resilience of our networks is a critical issue. The nature and unpredictability of future threats is changing – along with the expectations of our customers and stakeholders about our ability to maintain services when risks and incidents do occur.
- In BP24, we identified two priority areas for resilience enhancement investments for PR24 – improving asset health and adapting to climate change. However, of the £394m we included in BP24 for asset health and climate change adaptation, Ofwat funded only £113m in FD24 (29%). These two areas were the majority of Ofwat's interventions in our proposed totex at FD24.
- In BP24, we set out the evidence that capital maintenance has been structurally underfunded through price reviews for many years and went on to show that we had spent our historical allowances for capital maintenance in full over the last 20 years – but this would not be sufficient in the future.
- In the early stages of developing its PR24 methodology, Ofwat acknowledged concerns about asset health as a sector-wide issue, noting that it would consider how best to address this through better metrics, incentives and forward-looking elements in the cost assessment. However, Ofwat made only minor changes and its approach to cost assessment at PR24 is very similar to its approach at PR19. We explain Ofwat's approach to cost assessment for capital maintenance, and why this is inadequate.
- In BP24, we set out our proposals for a proactive programme to repair and replace specific assets in two categories – civil structures at water treatment works (WTWs) and sewage treatment works (STWs), and water mains. At DDR, we also brought forward investments in replacing a small number of service reservoirs (network storage assets). However, in FD24 Ofwat allowed no investment in civil structures or service reservoirs and overestimated how much water mains replacement could be done from base expenditure. In sections 4.3 and 4.4, we explain our enhancement case and why this investment is critical now. In response to Ofwat's concerns at FD24, we have reviewed and refined the scope of work needed in AMP8 on civil structures at WTWs and STWs and we provide some additional independent assurance.
- In BP24, we set out the evidence about the increasing impact of climate change on our assets, particularly focusing on the impacts of flooding and power failures caused by extreme weather. In FD24, Ofwat allowed some of our investments in this area – did not allow funding for most of our wastewater power resilience programme. In section 4.5, we show that there is an increasing issue with wind storms leading to power failures that create pollution incidents in the North East of England, and that this is much more of a problem than in other areas. We show that Ofwat's standard for power resilience is too low and will lead to many unnecessary pollution incidents.
- We request that the CMA, through its redetermination, makes the following changes to Ofwat's final determinations for PR24:
    - Provide the additional funding we need to deliver our PR24 asset health investment programme covering civil structures at water and wastewater treatment works, and replacement of water service reservoirs so that we can carry out these much-needed repairs and start to reverse the increase in long-term resilience risk.

- Reduce the level of mains renewal activity that is assumed to be implicitly funded from base expenditure allowances to a level supported by the evidence. This also requires an increase in the base cost adjustment to deliver mains renewals. This would ensure that we are appropriately funded to deliver the levels of replacement activity that we have been asked to deliver in AMP8.
- Provide the additional funding we need to deliver works to adapt for increasing climate change risks at wastewater treatment works and pumping stations.

4.1 INTRODUCTION

156. In BP24, we explained that while resilience has always been an important issue for us, the nature and unpredictability of future threats is changing - along with the expectations of our customers and stakeholders about our ability to maintain services when risks and incidents do occur. In Appendix 8 of BP24,[220] we set out how we developed our resilience framework for 2025-30, learning from Ofwat's feedback at PR19, our experiences using this framework in practice, and an external review:

> The threats to our service provision are also becoming ever more varied and complex. We are starting to see strong evidence of adverse climate trends with an increased prevalence of extreme weather events which have the potential to cause significant disruption to our operations. We also maintain a large and complex asset base, and we must replace and upgrade assets at a sustainable rate as they age and deteriorate over time…We must meet our legal requirements on all of these, including our obligations to maintain an efficient and economical water supply system and provide an effective drainage system.[221]

157. Our resilience framework identified two priority areas for enhancement investments for PR24 – **asset health** and **adapting to climate change**. We discussed the need for these investments and when they should be done with customers, who supported the approach we included within our business plan. Customers asked us to develop some specific options further, with a focus on investments where we are confident these need to be done now, and where they have an immediate impact on service.

158. Of the £394m we included in BP24 for asset health and climate change adaptation, Ofwat funded only £113m in FD24 (**29%**) (see Figure 13). Ofwat disallowed all our proposed investments in asset health at water treatment works, wastewater treatment works and service reservoirs, as well as most of our investments to provide power resilience at our wastewater sites. We are subject to general statutory duties to maintain our water and wastewater networks (see Appendix 3 Section 3.2) but there are no specific statutory requirements that dictate where and how that should be achieved. The outcome at FD24 for these "discretionary" areas was very different to the outcome of FD24 for investment that is supported by clear statutory requirements (such as those that inform the WRMP or WINEP).

[220] BP24 Appendix A8 Resilience, Section 4.4, SOC023.
[221] BP24 Appendix A8 Resilience, pg.3, SOC023.

FIGURE 13 - AREAS OF ENHANCEMENT EXPENDITURE THAT OFWAT DISALLOWED

Enhancement area	Allowance requested	FD24 allowance	Difference (%)
Water			
Asset health – civil assets	£17.8m	£0	-100%
Asset health – water mains	£74.4m	£51.3m	-31%
Asset health – service reservoirs	£47.8m	£0	-100%
Wastewater			
Asset health – civil assets	£123.6m	£0	-100%
Climate change adaptation – power and flooding	£76.6m	£23.8m	-69%

Source: Ofwat FD24 – enhancement costs aggregator model (**CA14**).[222] NWL SOC Databook.

159. The lack of clear statutory requirements or standards does not justify delaying these essential investments in operational resilience. Nor should any concerns about the quality of comparative data across the sector where companies have put forward well-evidenced and robust enhancement cases regarding the need to invest in their own networks. Delaying investment in these "no regrets" enhancement areas, that are clearly linked to delivering customer preferences over the long term, will lead to more expensive requirements in the future, and worse service as assets fail before then.

160. In that context we note that in FD24 Ofwat has proposed a programme of work to collect information about asset health in preparation for PR29, referencing the possibility that it might allow increases in capital maintenance allowances before then.[223] We support this work but do not consider that it constitutes a sufficient justification not to properly consider our enhancement case now – especially when so many opportunities to progress this issue have been missed in recent AMPs (see Section 4.2.3.4).

161. In this section, we set out the reasons why adequate investment in operational resilience is needed during 2025-30, and how this can be addressed in the redetermination. In particular we address:

- why investment in effective asset risk management is needed now, and why Ofwat's PR24 approach is inadequate to satisfy its statutory duties (see Section 4.2);
- our case for asset risk management investment in civils and service reservoirs (see Section 4.3, Appendix 2: Overview and key evidence – asset health, and our BP24 Investment Case NES35);[224]
- our case for appropriate funding of investment in water mains renewal (see Section 4.4); and
- our case for investment in power resilience and climate change (see Section 4.5 and Appendix 5: Overview and key evidence – resilience and our BP24 enhancement case).[225]

4.2 THE NEED FOR ADEQUATE INVESTMENT IN EFFECTIVE ASSET RISK MANAGEMENT IN AMP8

162. Across the whole sector, there is a growing risk to operational resilience (see Section 4.2.1). There has been some significant debate about levels of capital maintenance investment and resilience in the water sector over many

[222] Ofwat, PR24 Final determinations: CA14 Enhancement costs aggregator model 2 (**FD24 Enhancement Aggregator Model**), December 2024, SOC515.
[223] FD24 Expenditure, pg.83, SOC309.
[224] BP24 Appendix A3-21 Asset Health, SOC045.
[225] BP24 Appendix A3-18 Power Resilience NES32, SOC042.

years, and so in 2021, we set out to understand this in more detail.[226] Our work indicated that capital maintenance has been structurally underfunded through price reviews for many years, and in BP24 we went on to show that we had spent our historical allowances for capital maintenance in full over the last 20 years – but this would not be sufficient in the future. We identified specific investments in asset classes where there were particular risks to operational resilience, developed detailed information about condition through engineering surveys, and developed long term investment plans that are supported by our customers.

163. We owe a duty to our customers to ensure operational resilience in our network. Ensuring that we have the right 'tools' to meet our Water Duty and Sewage Duty is a core focus for Ofwat under its Functions Duty and obligation to further the Resilience Objective. It is also clearly consistent with the Consumer Objective to take prudent action to ensure that our assets and network are in the right condition to support sustainable delivery of our services. Our customers have shown strong support for a risk-driven approach to asset health investment in our business plan with a majority supporting our proposals to address this now.[227]

164. As set out in this section, we explain the need for an increase in asset health in general. We address:

- the growing evidence that the current approach to capital maintenance activity is not sustainable, but that this is not the result of historical underspending by companies of their allowances (see Section 4.2.1);
- the evolution of the regulatory approach to asset health since privatisation, how it has been addressed in PR24 and an overview of the deficiencies in that approach (see Section 4.2.2 and Appendix 1 Section 4);
- the inadequacy of Ofwat's overall approach to cost assessment for capital maintenance (see Section 4.2.3 and Appendix 1 Section 4);

165. We explain our enhancement cases for investment in specific areas of asset health: civil structures at water and wastewater treatment works and service reservoirs (see Section 4.3); and water mains renewals (see Section 4.4).

4.2.1 There is growing evidence that current capital maintenance levels are not sustainable

4.2.1.1 Historical levels of capital maintenance are much lower than the levels implied by asset lives

166. In 2022, we set out our concerns that historical levels of capital maintenance were much lower than the levels implied by asset lives (in our submission to Ofwat's Future Ideas Lab).[228] We proposed a method for assessing this:

> One way of answering the question around the right level of funding is to undertake a systematic assessment of the assets held in different 'classes' or 'types' against an engineering view of asset lives and the required replacement rates and comparing this against the levels of historical investment in those asset classes. Effectively, this constitutes a bottom-up assessment of the level of investment we might consider as a baseline should be spent replacing assets as they move beyond their asset lives versus what companies are currently spending. This approach benefits from a detailed assessment of the asset

[226] NWL Long-term Asset Health 2022, SOC279.
[227] NWG - Deliberative research into complex bill drivers for 2025-30: Research report (**NWG Complex Bill Drivers**), December 2022, SOC284.
[228] NWL Long-term Asset Health 2022, SOC279.

base against the age of that asset base and so provides some rigour as to the efficient level of investment using asset age, which is likely to be one key driver of failure.[229]

167. For BP24, we carried out this type of systematic assessment of the assets we hold in different 'classes' or 'types' against an engineering view of asset lives and the required replacement rates. We compared this against the levels of historical investment in those asset classes. This is a "bottom-up" assessment of the level of investment that – on initial examination – we should spend on replacing assets as they age beyond their expected asset lives, versus what we are actually spending now. This analysis was submitted to Ofwat as part of BP24[230] as context for our case.

168. This was broadly the approach taken by the Water Industry Commission for Scotland (**WICS**) in its Strategic Review of Charges for 2021-2027 (**SRC21**) (see Appendix 1 Section 4 Figure 10 Row 8).[231] WICS acknowledged the challenges in identifying the right levels of expenditure for maintenance activity due to the "uncertainty that exists in the timing of required maintenance expenditure" and the difficulty in demonstrating "a material impact on the levels of service experienced by customers of additional spending on maintenance."[232] But nevertheless WICS has used this evidence, without much further refinement compared to our own analysis, to set capital maintenance allowances for Scottish Water.

169. WICS took the view in its SRC21 final determination that Scottish Water, which is a water company operating in a similar environment to companies in England and Wales, had been underinvesting in the replacement of its assets in the past. WICS concluded that there was a need, in the interests of customers, to increase spending by 80%-123% compared to historical levels. As such, WICS allowed a substantial uplift in allowed costs for asset replacement in SRC21.[233]

170. The methodology applied in Scotland looked at the replacement cost of an asset class and divided this by its life expectancy to give long term asset replacement rates.[234] To test the implications of that approach to Northumbrian Water assets, we applied the WICS methodology using readily available data. We excluded long life assets, such as dams and impounding reservoirs (in line with the Scottish Water methodology) as these were assumed to be repaired in perpetuity.

171. Our analysis of Northumbrian Water assets showed that, based on expected asset lives, **the long-term sustainable level of expenditure on asset replacement could be between £197m and £268m per year**. Figure 14 summarises the results of this analysis.

[229] NWL Long-term Asset Health 2022, pg.8, SOC279.
[230] BP24 Appendix A3-21 Asset Health, Section 3.3.1, SOC045.
[231] See: https://wics.scot/publications/price-setting/strategic-review-charges-2021-27.
[232] WIC board paper quoted in Indepen, Capital maintenance: summary of the issues from the interviews (**Indepen Capital Maintenance**), March 2017, SOC441.
[233] WICS, Strategic Review of Charges 2021-2027, Final Determination (**WICS SR21 of Charges FD**), 10 December 2020, SOC424.
[234] WICS, Strategic Review of Charges 2021-2027, 2019 Decision paper: Asset replacement (**WICS SR21 of Charges 2019 Decision**), July 2019, pg.17-37, SOC423.

FIGURE 14 - RESULTS FROM OUR APPLICATION OF THE WICS METHODOLOGY TO NWL ASSETS

	Value (£m, 22/23 prices)	Life expectancy (years)		Replacement rate (£m/year)		Current annual spend (£m/year)
		Low	High	Low	High	
Water services						
Water resources	1,543	81	108	14	19	1
Raw water distribution	1,262	88	118	11	14	7
Water treatment	1,578	52	71	22	30	19
Treated Water Distribution	7,792	65	92	85	120	36
Wastewater services						
Sewage collection	13,518	60	86	156	224	25
Sewage treatment	2,664	43	51	52	62	27
Sludge treatment	569	66	94	6	9	12
Subtotal	28,927	60	83	347	479	128
Total (excl. long life assets)	**15,024**	**56**	**76**	**197**	**268**	**110**

Source: NWL Long-term Asset Health 2022, pg.9, SOC279.

172. We compared this analysis to our historical levels of expenditure on asset replacement and maintenance over the last 10 years in the same asset types. We included ongoing maintenance costs in our analysis whereas the WICS approach did not. We did this to show that the gap with expected long-run replacement expenditure rates could not be explained by ongoing maintenance expenditure – as there is still a significant difference when it is included. The remaining gap is therefore likely to be an underestimate because without this, the gap would be higher. This indicated that **historical replacement rates had been around £110m per year** – that is, around half of the long-term sustainable level of expenditure identified in Figure 14. This finding is similar to the analysis undertaken with respect to Scottish Water that supported its SRC21 funding uplift of around 80-123% over the long term.[235]

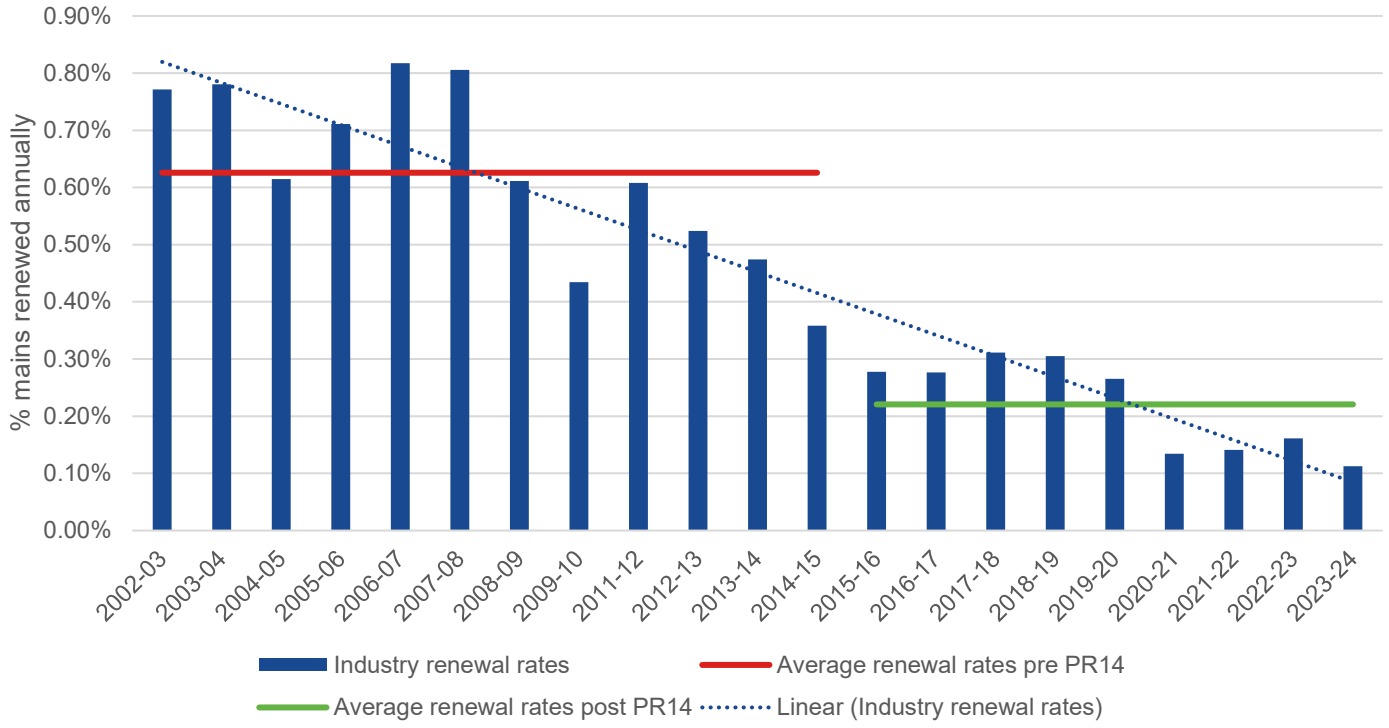
173. This was not a surprising conclusion, and it has been recognised by others. For example, Water UK[236] and the NIC[237] have pointed to ageing infrastructure and low replacement rates as cause for concern. A 2022 report prepared for Water UK by Economic Insight[238] highlighted that current replacement rates are low by international standards (for water mains, ten times lower than the European average). Although FD24 partly addresses the replacement rate for water mains (see section 5.3), this is not the only gap identified in Figure 14. The Independent Water Commission's recent Call for Evidence raises these issues and will look at the need for an improved infrastructure resilience framework, including the extent to which companies are maintaining existing assets and planning for climate change.[239]

174. We do not have asset data that is sufficiently comprehensive or robust to undertake similar analysis across all asset classes at a sector level, and so it is difficult to assess if this is a problem all companies face. That is why we are supportive of the efforts to improve data availability across the sector.

[235] BP24 Appendix A3-21 Asset Health, pg.33, SOC045.
[236] See: https://www.water.org.uk/news-views-publications/views/we-havent-always-got-it-right-cost-inaction-huge.
[237] NIC-Ofwat Letter 05.23, SOC430.
[238] Water UK, Options for a Sustainable Approach to Asset Maintenance and Replacement - Report by Economic Insight (**Economic Insight Asset Maintenance 2022**), June 2022, SOC390.
[239] Defra Independent Water Commission 2025 – Evidence, pg.16, SOC464.

175. However, we do have the sector-wide data to undertake this analysis with respect to water mains. At a sector level, the data shows a sharp decline in rates of mains renewal to levels which are far below the implied asset life. Figure 15 shows the declining trend across the sector (Ofwat originally presented this chart at a working group in 2021, and we have updated this with more recent data up to 2023/24).[240] Recent replacement levels of around 0.15%[241] imply asset lives of **667 years**. This is clearly not sustainable. We also show on the chart the differences in average replacement rates before and after the introduction of the totex and outcomes framework, which took place at PR14.

FIGURE 15: INDUSTRY WATER MAINS RENEWAL RATES SINCE 2002



Source: June returns 2007[242] June returns 2010[243] and Ofwat's PR24 FD mains renewal adjustment cost model.[244] NWL SOC Databook.

176. Although there is no data available for other asset categories[245], there is a risk that replacement rates in most other asset categories are at levels below what is sustainable in the long-term. This is because the same funding framework and regulatory incentives apply across the whole of the asset base (see Section 4.2.3.3 for a discussion of the impact of the regulatory framework on companies' incentives and behaviour). This matches the evidence from our analysis in Figure 14, which suggests annual expenditure on asset replacement needs to double from current levels to be sustainable in the long term – including across many other areas than water mains.

[240] Ofwat, PR24 Cost Assessment Working Group, Forward looking capital maintenance: Draft for discussion (**Ofwat PR24 Forward Looking Capital Maintenance**), 28 September 2021, SOC454.
[241] Average from 2019/20 to 2023/24 taken from Ofwat, PR24 final determinations: CA95 Mains renewal cost adjustment model (**FD24 Renewal Rates**), December 2024, SOC315.
[242] See: https://webarchive.nationalarchives.gov.uk/ukgwa/20121107173937/http:/www.ofwat.gov.uk/legacy/aptrix/ofwat/publish.nsf/Content/navigation-jr-non-financial-measures-tables.html.
[243] See: https://webarchive.nationalarchives.gov.uk/ukgwa/20111108194033/http:/www.ofwat.gov.uk/regulating/junereturn/jrhistoricdata/prs_web_jr10.
[244] FD24 Renewal Rates, SOC315.
[245] Ofwat collected this information from water companies through queries at DD24, but has not published the data or their analysis, or shared it with us when we requested this directly.

177. In Section 4.2, we explain how we focused on specific asset classes for our BP24, using physical surveys rather than relying on implied asset lives. This showed that the need for investment based on asset condition and remaining life was much higher than the implicit capital maintenance allowances at PR24, identifying specific assets where there is a clear need for an increase in investment. In our BP24, we proposed this as a clear first step towards tackling the issue of sustainable asset health investment that would be "no regrets" even in the absence of sector wide data.

178. This need to invest now has been demonstrated by the work undertaken following FD24 which has confirmed that some of the assets identified in our investment case have already been repaired or replaced since BP24 (Section 4.3.7).

4.2.1.2 Capital maintenance expenditure in recent years

179. Ofwat sets totex cost allowances for each water company to deliver their service level outcomes and enhancement programmes over each five-year control period. Within this, Ofwat sets "base cost allowances" which it sets at each price review based on historical expenditure. Ofwat expects companies to manage their assets within the base cost allowances it sets, and reinforces this by reference to companies' statutory duties:

> We expect companies to manage cycles of maintenance across large, diverse asset bases within their long-term average cost allowance, and companies have a duty to maintain an efficient and economical system of water supply, including maintaining water mains.[246]

180. Figure 16 shows our historical actual spend on capital maintenance since 2000, compared to Ofwat's totex allowances at each price review (from AMP3, covering the period 2000-05, to AMP7, covering the period 2020-25). This looks at the difference after cost sharing rates are applied – this is important to be able to compare accurately, because although any differences between allowed and actual costs have been shared with customers at each price review since 2010, these have been shared at different rates as determined by Ofwat in each price review.

FIGURE 16: NWL HISTORICAL ACTUAL EXPENDITURE AGAINST CAPITAL MAINTENANCE ALLOWANCES (AMP 3-5) AND IMPLICIT ALLOWANCES (AMP 6-7)

22-23 prices, £m	AMP3	AMP4	AMP5	AMP6	AMP7	Total
	00-05	05-10	10-15	15-20	20-25	00-25
Maintenance Capex						
FD						
Water	505	514	763	692	523	2,998
Wastewater	274	365	553	429	362	1,983
Total	779	879	1,316	1,121	886	4,980
Actual						
Water	533	568	558	645	757	3,061
Wastewater	317	497	431	388	394	2,027
Total	850	1,065	989	1,033	1,151	5,087
Overspend: Actual-FD						
Water	27	54	-205	-47	233	63
Wastewater	43	132	-122	-41	32	44

[246] FM24 Appendix 9 Expenditure, pg.51, SOC292.

22-23 prices, £m	AMP3	AMP4	AMP5	AMP6	AMP7	Total
Total	71	186	-327	-88	265	107
Company share	100%	100%	30%	50%	55%	
Company share						
Water	27	54	-62	-24	128	125
Wastewater	43	132	-36	-21	17	136
Total	71	186	-98	-44	146	260

Source: NWL analysis of historical June Return and APR data and PR99, 04, 09, 14 and 19 FD information from Ofwat.[247] AMP6 & 7 data from EI report.[248] Full details in NWL SOC Databook.

181. Figure 16 shows that by the end of 2024/25, we will have overspent our capital maintenance allowances over the previous 25 years by **£107m** – before cost sharing is applied. This is largely driven by overspends in AMP7 relative to the implicit allowance during that period. Over that period, the overspend equates to 2% of the £5.0bn allowance.

182. After cost sharing is applied, we will have overspent against our allowances by £260m or 5%.[249] This means that **over the last 25 years we have spent more on capital maintenance than we have recovered from customers** with respect to both our water network (£125m) and our wastewater network (£136m). This is because although there was an underspend in AMP5, most of this underspend (70%) was returned to customers through cost-sharing. In contrast, 100% of the overspends in AMP3 and AMP4 were borne by shareholders in the company.

183. Based on this evidence, it is not credible to suggest that our recent performance on asset maintenance or replacement rates can be attributed to underspending of our implicit allowances, as Ofwat does in FD24 (see section 5.2). Given our strong performance in Ofwat's base cost models at PR24 (where we were the 4th most efficient WASC based on the FD24 models),[250] and our industry leading position in Ofwat's most recent AMMA (see Section 3.5.3), we do not think it is likely that inefficiency or poor asset management has created the current shortfalls in expenditure that we are identifying for AMP8 and beyond.

184. This is also the case for the water sector as a whole. A review by Economic Insight in 2022 on behalf of Water UK examined the historical relationship between the overall cost allowances and specific capital maintenance allowances given to companies versus their outturn expenditure (see Appendix 1 Section 4 Figure 10 Row 22)[251] Economic Insight found that "companies have not been systematically 'cutting back' on asset maintenance and replacement by underspending their totex allowances" and that "companies have actually prioritised capital maintenance (i.e. their asset maintenance and replacement activities) whilst staying just within their overall funding allowances".[252]

[248] It should be noted the AMP6 & 7 figures used differ from numbers we had shared with Ofwat during PR24 as we had used some elements that are contained within the 'base plus' allowance, in particular growth at sewage treatment works and sewer flooding expenditure
[249] This reflects the 30% cost sharing rate applied in AMP5 and 100% exposure to overspends in AMP3 and AMP4, before cost sharing was introduced in PR09 for AMP5 (see: Ofwat, Future water and sewerage charges 2010-15: Final determinations (**FD09**), 2009, pg.149, SOC421).
[250] Aggregated efficiency of all price controls from FD24 Water FM3, SOC330; FD24 Wastewater N Plus FM3, SOC331; FD24 Bioresources FM3, SOC332; and FD24 Retail FM3, SOC333. Calculations are in NWL SOC Databook for Figure 6.
[251] Economic Insight Asset Maintenance 2022, SOC390.
[252] Economic Insight Asset Maintenance 2022, pg.29, SOC390.

185. Updated analysis of industry-wide capital maintenance expenditure by Economic Insight shows that "Over PR14 and PR19, the industry overall has overspent their (implicit) capital investment and maintenance allowances by 6% in wholesale water and 19% in wholesale wastewater".[253]

186. This shows that underspending on capital maintenance allowances cannot be the driver of low asset replacement activity across the sector – because the evidence shows that there has not been any underspending. This shows that the underlying reason behind low replacement rates (see Section 4.2.1.1) is likely to be historical underfunding of capital maintenance as a result of allowances being set too low.

4.2.1.3 Reactive expenditure has been increasing

187. We seek to plan future expenditure and maintenance activities by 'proactively' identifying investment priorities across the business. This helps us to better manage asset health risks and to ensure that the costs of doing so are efficient. This is because it is often cheaper to proactively maintain and manage an asset than to 'reactively' fix it when it fails (see Section 4.2.1.2).

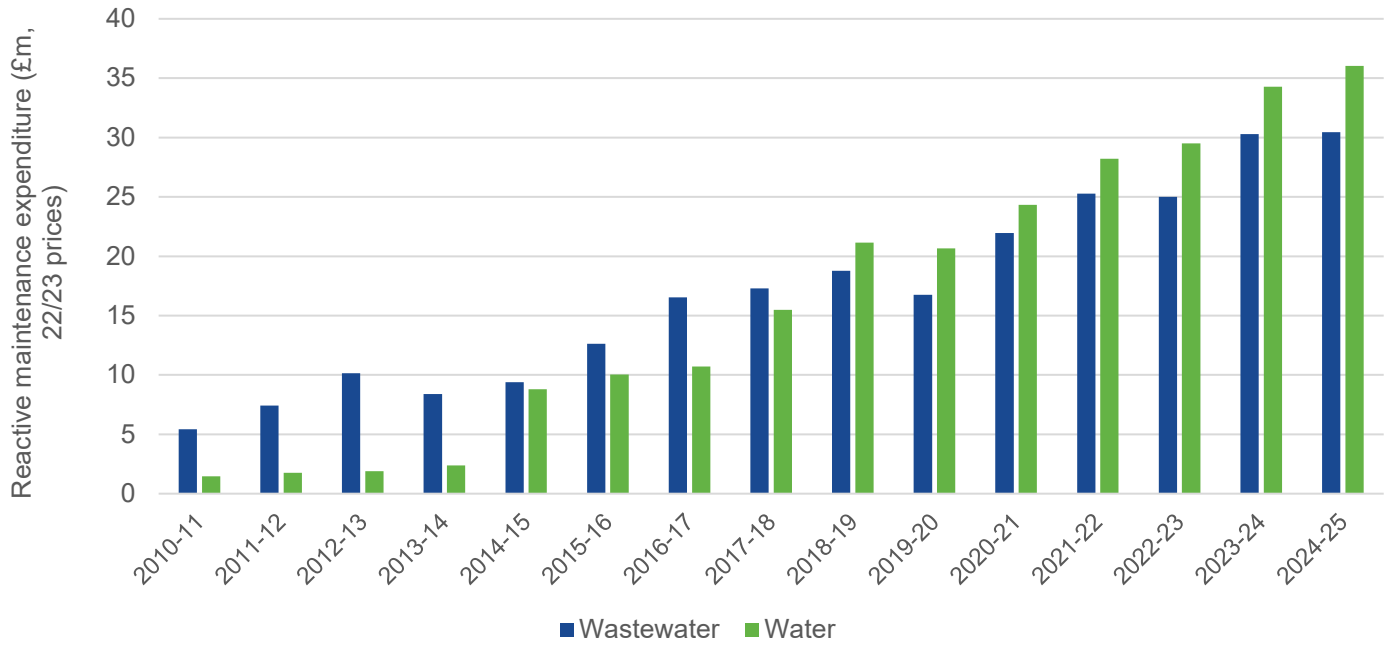
188. However, in some cases, the most efficient outcome can be to allow specific assets to run to failure and then reactively fix this. Reactive maintenance expenditure – that is, spending money on assets that have generally already failed or are at the point of failure – is usually a 'last resort' response in situations where the risk to service delivery to customers and/or the impact on our delivery of our legal obligations of not acting is greater (we explain our "risk-driven approach" and the importance of efficient replacement in 4.2.1.1). In that scenario, the reactive expenditure is usually essential and must generally be prioritised over other capital expenditure. Where the level of reactive expenditure is growing, that means that other important investments are deprioritised and cannot be delivered within capital maintenance allowances.

189. When we decide how to allocate our capital investment, we must consider a wide range of factors including service delivery and risk. We have expanded our support tools for making those decisions in the 2020-25 period through our service planning transformation programme, which includes our Copperleaf decision system and value framework. However, we have increasingly found that the demand for capital maintenance and replacement outstrips the available funding.

190. Over time we have seen substantial growth in reactive maintenance expenditure (which we monitor and review regularly). Figure 17 shows that over the last fourteen years, our reactive maintenance activity has been consistently increasing across both the water and wastewater systems.

[253] Economic Insight, A balanced approach to ensuring long-term asset resilience (**EI Asset Health 2025**), 21 March 2025, pg.12, SOC003.

FIGURE 17: NWL REACTIVE MAINTENANCE EXPENDITURE SINCE 2010/11



Source: NWL analysis of historical capital investment data. NWL SOC Databook.

191. This trend is seen in our mains renewal activity where we are undertaking more reactive replacements – in our enhancement case NES35, we describe the evidence for this and show the split between proactive and reactive replacements.[254] This is likely to be the experience of other companies given the industry-wide trend seen in Figure 15.

192. The increase in reactive maintenance is an important indicator that the level of capital maintenance expenditure is not high enough – and that (more efficient) proactive investment is required. These trends have been created by regulatory incentives for short-term decision making on costs and service under the totex and outcomes framework rather than sustainable investment over the long term.

4.2.2 The evolution of the regulatory approach to asset health

193. It has been clear since the criticism of Ofwat's focus on historical expenditure PR99 that there was a need for consistent collection of data on assets by companies, across the network, to support effective asset management by companies and appropriate funding decisions by Ofwat.[255] However, Ofwat has not been able to achieve this.

194. To understand the context of Ofwat's FD24 position, and why we consider it is important for our enhancement cases to be funded in AMP8, we have provided the CMA with an overview of the evolution of Ofwat's regulatory approach to capital maintenance expenditure and asset risk management in general since PR99.[256] This includes

[254] BP24 Appendix A3-21 Asset Health, Figure 10 – Annual Expenditure on Mains Renewals (£m's) split according to reactive and proactive renewals, SOC045.
[255] House of Commons, Environmental Audit Committee, Seventh Report (**HoC Environmental Audit Report**), 14 November 2000, paras. 203-208, SOC420.
[256] For an overview of how capital maintenance of critical infrastructure was managed pre-privatisation, and the role that the deficiencies in maintenance played in establishing the case for privatisation, see Capital Maintenance Bush-Earwaker 2019, pg.6-8, SOC386. For a broader overview of the evolution of the regulatory framework, also see Frontier Sector Report, pg.39, SOC418.

recent parallels with decisions by Ofgem about network asset health. Ofgem first introduced formal assessment and funding for network asset management outcomes through Network Output Measures (**NOM**s) in 2013 for gas distribution networks and electricity and gas transmission networks (RIIOT1/GD1). It has continued with this approach which has evolved into Network Asset Risk Metrics (**NARM**s) in all subsequent price controls and confirmed its intention to carry it into future controls.[257]

195. At PR04 and PR09, Ofwat's approach was to triangulate data on past trends with forward-looking information derived from companies' improving asset management systems. At PR14, Ofwat moved to "totex-based" regulation and so relied on top-down econometric modelling to assess totex in the round, rather than assessing the need for capital maintenance. Ofwat repeated this approach at PR19, albeit with some improvements to the modelling to reflect criticisms raised by the CMA in its PR14 redetermination for Bristol Water. Although the CMA's PR19 redetermination accepted Ofwat's modelling approach, it did reflect on the concerns raised by companies about capital maintenance underfunding and suggested that Ofwat take the opportunity to enhance its analysis with a forward-looking element that will assist in triangulating results from its econometric modelling of historic costs. We were one of the companies that raised concerns about this issue in our PR19 SoC.

196. Since 2020, we have contributed constructively to the debate and the development of potential solutions (see for example (see Appendix 1 Section 4 Figure 10 Rows 16, 17, 27 and 29). In particular:

- we highlighted the issue to Ofwat early on in the PR24 process through submissions to the Future Ideas Lab;[258]
- we worked with Ofwat's AMMA assessment framework and undertook our own internal work to ensure we were performing well against that framework (see Section 2.4.3);
- we developed a robust enhancement case focussed on a smaller cohort of assets and undertook a substantial programme of independent surveys to ensure that the information and evidence for our case was robust;[259]
- we began work last year with a small group of companies to start to inform future approaches for alternative models of cost assessment that would better address these issues;[260] and
- following DD24, we supported further sector work to identify potential alternatives to the poorly defined mechanisms Ofwat set out in DD24.[261]

197. Ofwat has not, however, made any alterations to its core approach to cost assessment and funding capital maintenance at PR24. In doing so, it has missed many opportunities to follow through on its potential to take a leading role in revitalising the regulatory approach to asset health and capital maintenance. Rather than properly engage with the constructive criticism and solutions put forward by companies, other stakeholders and expert advisors, instead it has focused on company asset management systems, limited and ad hoc data collection, reporting and monitoring.

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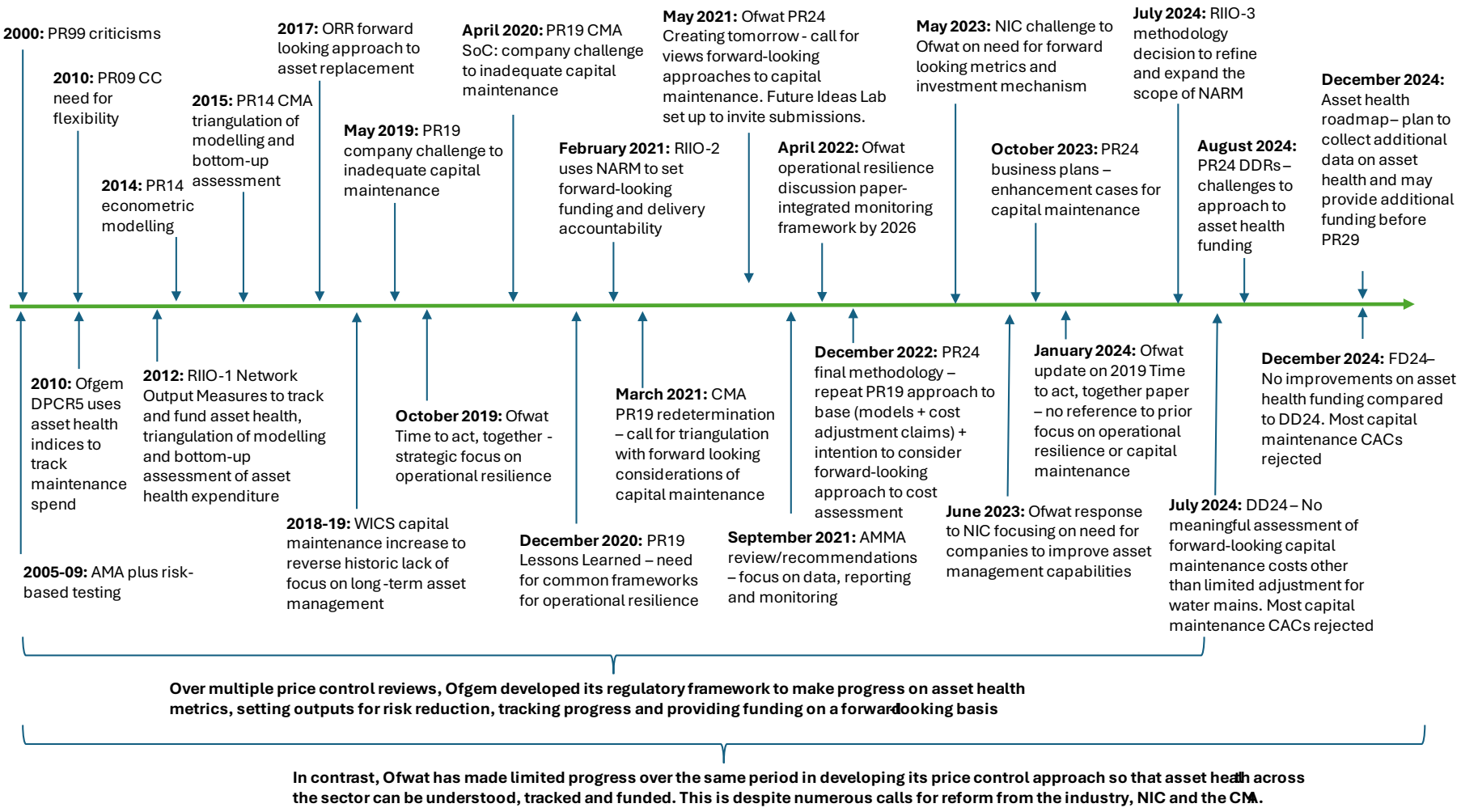
[257] Ofgem, RIIO-3 Sector Specific Methodology Decision – Overview Document (**RIIO-3 Methodology**), 18 July 2024, SOC551.
[258] NWL Long-term Asset Health 2022, SOC279.
[259] BP24 Appendix A3-21 Asset Health, Section 4.1, SOC045.
[260] See: https://www.water.org.uk/investing-future/infrastructure-health.
[261] NES80F - NWL Response to Ofwat DD24, Opportunities for Improving Ofwat's Approach to Asset Health Following the PR24 DDs (Reckon) (**NWL DDR Reckon Asset Health**), 28 August 2024, SOC212.

198. A more detailed description of each of the key moments identified in Figure 18 is provided in Appendix 1 Section 4 Figure 10 but from the timeline we would highlight the following points:

- the CMA asked Ofwat to consider and make changes to its regulatory framework for PR24 at the PR19 redetermination but in practise it has not made any significant changes.[262] Indeed since 2020 the NIC and various select committees have added to calls for reform in this area;[263]
- Ofwat has itself at various points since 2020 promised further work and change, for example, in the AMMA Report in 2021 Ofwat reflects on its PR19 strategy[264] and the commitment that expressed "to strengthen the industry's approach to achieving long-term operational resilience in its assets".[265] This did not, however, translate into meaningful improvements in the regulatory framework for PR24. The updated strategy Ofwat published in 2024[266] continued many of the themes set out in the 2019 strategy – with the exclusion of any explicit reference to operational resilience. Moreover in 2022 Ofwat published an operational resilience working paper promising a broader monitoring framework and richer datasets and setting hard deadlines for progress, most of these have been missed;[267] and
- Ofwat's lack of progress in this important area is in contrast to other regulators including the WICS who have materially amended the regulatory framework for Scottish Water and Ofgem who, over a very long period, have been making changes to better reflect asset risk in their regulatory frameworks.

[262] CMA FD19 Decision, para. 4.293, SOC334: *We acknowledge Anglian's and Northumbrian's argument that Ofwat's cost assessment is backward looking and that potential issues with capital maintenance may be forward looking. This is a complex issue, which, going forward, may become more important. We therefore suggest that Ofwat considers developing indicators to track this issue and to enable it to enhance its analysis with a forward-looking element that will assist in triangulating results from its econometric modelling of historic costs.*
[263] NIC-Ofwat Letter 05.23, SOC430.
[264] Ofwat, Time to act, together: Ofwat's strategy (**Ofwat Strategy 2019**), 8 October 2019, SOC384.
[265] Ofwat, Asset management maturity assessment – insights and recommendations (**AMMA Report 2021**), September 2021, pg.8, SOC419.
[266] Ofwat, Time to act, together: Ofwat's strategy (refreshed) (**Ofwat Strategy 2024**), January 2024, SOC385.
[267] See: Ofwat Operational Resilience 2022, SOC368: Figure 0.2 contains a range of activities within stages 1 and 2 (up to 2025). Within stage 1 (2022-23) we do not consider that any of the 'asset' or 'system' resilience measures have been developed/met just the 'service performance measures' which were essentially pre-existing PR24 service metrics. Within stage 2 only the Operational Capability measures have been developed and stage 3 has not been delivered.

FIGURE 18 - TIMELINE OF THE REGULATORY APPROACH TO ASSET HEALTH



Source: see source material referenced in Appendix 1 Section 4 Figure 10.

199. Activities such as monitoring and data collection are part of the solution, but that must be combined with meaningful change to the regulatory framework for funding investment in capital maintenance. We note that Ofwat has proposed in its PR24 FD a programme of work to collect information about asset health in preparation for PR29, referencing the possibility that it might allow increases in capital maintenance allowances before then.[268] We support this work, but there is no reason that this could not have been done sooner. We are concerned that this work will not meet the objectives or timescale Ofwat has set out, particularly because similar proposals for enhanced monitoring activities before PR24 were delayed and abandoned.[269] We also do not consider that it constitutes a sufficient justification not to properly consider our enhancement case now, because it is clear that these investments are needed now – even if Ofwat does not yet fully understand asset health across the whole sector.

4.2.3 Ofwat's approach to asset health and capital maintenance at PR24

4.2.3.1 Ofwat's PR24 methodology

200. In the early stages of developing its PR24 methodology, Ofwat acknowledged concerns about asset health and the extent to which there is sufficient long-term investment, noting that it would consider how best to address this through better metrics, incentives and forward-looking elements in the cost assessment.[270] Ofwat did not explore in any detail how the design of its regulatory framework might be contributing to the "concerns about the extent to which companies are sufficiently focused on the long term"[271] that it had identified, or any options that it might adopt to tackle this concern, beyond minor changes to its approach to cost assessment.

201. As we describe in 4.2.3.1, Ofwat's approach to cost assessment for base costs at PR24 (including capital maintenance expenditure) is very similar to its approach at PR19. Furthermore, Ofwat did not make any significant progress to develop an approach to operational resilience and asset health metrics that would better incentivise asset health investment (see section 4.2.2).

202. In its PR24 methodology, Ofwat indicated three ways in which it might take a more forward-looking approach to base cost econometric modelling: forecasts of explanatory variables; company forecast data as inputs; and the cost adjustment process.[272] Ofwat did not consider analysis similar to the WICS approach, modelling asset replacement costs based on information on asset lives.[273] It also did not further explore the approach for asset replacement used by Ofgem for energy network companies.[274]

203. Using forecasts of explanatory variables was already part of Ofwat's PR19 approach, so was not new for PR24. Ofwat had planned to consider using company forecast data as inputs, but it did not use this in practice at PR24. This would have had limited value in supporting robust forward-looking estimates of efficient costs anyway, because Ofwat's business plan incentives mean that companies are incentivised to forecast their base costs in the same way as Ofwat's models (see discussion in section 6.6.3).

[268] FD24 Expenditure, pg.83, SOC309
[269] Ofwat Operational Resilience 2022, SOC368.
[270] See Appendix 1, Section 4, Figure 10 Row 15.
[271] Ofwat, PR24 and beyond: Creating tomorrow, together (**Ofwat PR24 Creating Tomorrow**), May 2021, pg.89, SOC455.
[272] See Appendix 1, Section 4, Figure 10 Row 24.
[273] See Appendix 1, Section 4, Figure 10 Row 8.
[274] See Appendix 1, Section 4, Figure 10 Row 13.

204. This meant that the only remaining element at PR24 that allowed a more forward-looking perspective for capital maintenance expenditure and tackling concerns about asset health and long-term investment was the **cost adjustment process**. This meant that Ofwat expected water companies to resolve these issues, including considering sector-wide data and issues, rather than taking proactive steps itself – within a framework which was unduly restrictive (see Section 4.2.3.3 and Appendix 1 Section 5.7).

4.2.3.2 Ofwat's PR24 funding decisions for asset health and capital maintenance

205. Several companies considered that Ofwat's base expenditure allowances do not adequately fund the growing requirement for capital maintenance and made formal cost adjustment claims (**CAC**s) for additional capital maintenance allowances for AMP8 through their business plan submissions and DD representations. Ofwat rejected the majority of claims from companies through its CAC assessment process, apart from the limited sector-wide adjustment for mains renewals. Figure 19 below shows that while Ofwat accepted 89% of company requests for funding in relation to enhancement expenditure primarily to meet new legal obligations, it only accepted 28% of requests made by companies through the base cost adjustment process for capital maintenance expenditure. Within this it accepted none of the requests related to a step change in capital maintenance expenditure, which summed to over £900m across just four companies.

FIGURE 19 - PROPORTION OF COMPANY REQUESTS FOR ADDITIONAL FUNDING IN DIFFERENT AREAS ACCEPTED BY OFWAT

Expenditure area	Funding requested by companies (£m)	Funding allowed by Ofwat at FDs (£m)	Proportion of request allowed (%)
Capital maintenance			
Mains replacements[275]	1,010	456	45%
Step change in capital maintenance[276]	914	0	0%
Other company specific related asset health requests[277]	215	137	64%
Total	**2,139**	**593**	**28%**
Enhancement expenditure			
WINEP	9,736	8,116	83%
Resilience	7,209	6,203	86%
SEMD and Cyber	3,008	2,922	97%
Supply and Demand	8,384	8,067	96%
Drinking Water Quality	2,552	2,445	96%
Growth at STWs	2,384	1,864	78%
IED	1,509	1,265	84%
Reservoir safety	403	354	88%
Total	**35,185**	**31,236**	**89%**

Source: NWL assessment of company business plans and FD24. NWL SOC Databook.

Note: this table does not include all areas of expenditure requested and allowed at FD24.

[275] This row covers funding requests and allowances for companies that made a formal request for a cost adjustment for mains replacement: Northumbrian Water, Wessex Water, Anglian Water, Bristol Water, South East Water, Southern Water and Welsh Water. The allowance figures also include allowances made for companies that did not make a cost adjustment claim.
[276] This includes claims made by Northumbrian Water, Yorkshire Water, Southern Water and Wessex Water.
[277] This includes additional asset health adjustment claims related to company specific factors from Thames Water, Hafren Dyfrdwy and Sutton and East Surrey Water.

206. Ofwat did include an upward adjustment for us and some other companies for increased mains renewal expenditure.[278] However, the scope of Ofwat's response was very narrow (that is, it focused on water mains) – because it was easier to understand the data across the sector for water mains, with a clear percentage replacement rate which could be linked to asset life more readily. We discuss our methodology concerns with Ofwat's mains renewal assessment in Section 4.4.

207. The positive benefits of recognising the need for additional funding were undermined by the related requirements imposed on companies:

- Ofwat introduced a mains renewal PCD that required companies to deliver a renewal rate of 0.3% with no additional funding as Ofwat considered that this is the level of activity that is implicitly funded by base cost allowances.[279] We consider this to be an error (see discussion in Section 4.4);
- the impact of Ofwat's decision on the implicitly funded mains renewal rate to effectively ring-fence a higher proportion of our base expenditure allowance to deliver the mains renewal PCD than we have seen in recent years. This puts a squeeze on our base expenditure allowances and restricts our ability to manage our assets using a risk-based approach as it leaves less money available for other assets. It is not in customers interests to manage our assets in this way. We discuss this further in Section 5.5.2.

208. In rejecting companies' cost adjustment claims for other areas of capital maintenance, Ofwat said that it did "not agree that base expenditure allowances have not been enough to prevent deterioration in asset condition".[280] Instead, Ofwat said that companies are adequately funded, referring to information on how capital maintenance expenditure has increased over time both on an absolute basis and per head of population.[281] The data does not confirm this position for the following reasons:

- The evidence that capital maintenance expenditure has been increasing does not allow us to conclude anything about whether or not base expenditure allowances have been set at level that is sufficient to prevent deterioration in asset risk. This is because Ofwat's cost assessment process to determine the level of allowances do not take account of the condition of assets or the expenditure required to prevent their deterioration. Furthermore, the models used to set the allowances have no ability to account for future asset replacement and maintenance requirements – they are backward-looking. Ofwat has not carried out any forward-looking analysis to assess whether the expenditure levels are sustainable or not. In the only area where Ofwat does have evidence on replacement rates (water mains), the renewal rates are far from being sustainable (see section 4.2.1). Ofwat's assertion that the allowance levels are appropriate and sustainable because expenditure is increasing does not make sense.
- A comparison over time of capital maintenance spending and changes in population is not meaningful. A growing population is not a good guide to what might drive asset management costs, particularly as asset

[278] FD24 Expenditure, pg.37-39, SOC309.
[279] FD24 Expenditure, pg.38, SOC309.
[280] FD24 Expenditure, pg.83, SOC309.
[281] FD24 Expenditure, pg.84, SOC309.

health expenditure is largely driven by older assets reaching the end of their life. It also sheds no light on whether the level of spend is appropriate at any point in time.

209. In FD24, Ofwat says that **capital maintenance expenditure across the sector has increased by 23% in real terms** since 2011-12.[282] However, this increase can be explained by the increasing asset base over time requiring more maintenance – the RCV between 2011/12 and 2023/24 for the sector increased by 25%.[283] It also does not shed any light on whether the investment at any point in the period was at sustainable levels or not.

210. Whilst FD24 provides for increased investment in mains and meters through the industry wide cost adjustments (with an insufficient allowance for the volumes required in our view), we think the evidence actually points towards the FD24 allowances being lower than current spend levels for other capital maintenance asset categories. This is because, the approach to cost assessment applies an upper quartile challenge to each price control area: wholesale water, wastewater network plus, and bioresources. This upper quartile challenge means that in each area the allowances provided (before any sector wide cost adjustments) will be lower than three quarters of the companies actual levels of spend. This means that allowances for the sector will therefore be lower than spend over the last five years as that is how the upper quartile challenge is calibrated. This is highlighted in Figure 20 below.

FIGURE 20: COMPARISON OF ACTUAL BASE CAPEX SPEND WITH BASE CAPEX ALLOWANCES

	FD24 base capex allowance (a)	FD24 base capex adjustments for increased volumes (b)	FD24 allowance less adjustments (c = a – b)	Base capex spend 2019/20 – 2023-24 (d)	Adjusted allowance less spend (c – d)
Water	10,197.5	1,991.8	8,205.6	8,719.7	(514.1)
Wastewater	9,891.0	879.0	9,012.0	9,857.3	(845.3)
Total	**20,088.5**	**2,870.8**	**17,217.6**	**18,577.0**	**(1,359.3)**

Source: NWL analysis of FD24 opex capex split models, industry-wide adjustment models, and base cost models. Details set out in NWL SOC Databook.

211. The table above shows that base capex allowances do increase from historical rates of spend going from £18.6bn over the last 5 years to £20.1bn in AMP8. However, this is heavily driven by industry wide adjustments of £2.9bn for additional mains renewal, meter replacement, network reinforcement, and for Thames a gated allowance for increased capital maintenance. Each of these adjustments will have additional volumes of activity attached to them, e.g. the mains and meter adjustments have PCD volumes that must be delivered - none of which will have been provided for in previous base allowances. Since these sums are effectively hypothecated, they cannot be used to improve more general asset risk issues that companies are facing. Once these sums are removed, it leaves a pot for capital maintenance that is smaller than companies' current rates of spend: £514m lower for water and £845m lower for wastewater.

212. This means that for assets such as those at critical treatment works, companies will have to cut spending (by around 7%) compared to the last 5 years if companies are to keep within their allowances. For us, outside of the uplifts for mains and meters, we will have to deliver around £111m of capital maintenance savings (~10%) compared to our investment levels over the last 5 years. This is a far from desirable situation in the context of capital maintenance

[282] FD24 Expenditure, pg.3, SOC309.
[283] RCV data taken from Ofwat, WaSC RCV data at 2011-12 prices (**Ofwat RCV Data at 2012 Prices**), SOC587; and Ofwat, Regulatory Capital Values: Update of the PR19 RCVs for publication in Spring 2023 (**Ofwat PR19 RCVs for 2023**), SOC588.

activity already being too low. This reinforces the need to consider our CACs now to avoid harmful cuts in expenditure at a time when the need for investment is increasing.

213. Ofwat goes on to say that:

> We disagree with drawing conclusions on renewal rates for other asset types based on this data, particularly when capital maintenance spend continues to increase in real terms.[284]

214. However, Ofwat provides no argument as to why this should be the case. The same incentives and approach to historical funding have applied to all asset types, and we would expect to see the same pattern of unsustainable replacement rates. Our analysis in Section 4.2.1 shows that there is likely to be systematic underfunding in other areas, too. If anything, the greater information published about mains renewal rates and transparency and scrutiny that this attracts would make it more likely that companies may prioritise replacement of mains over other assets so that they report more favourable data.

215. We discuss this further in Section 4.3, focusing on our enhancement case for civil structures and service reservoirs in particular.

4.2.3.3 Issues with Ofwat's overall approach to cost assessment for capital maintenance

216. In the previous sections we have set out the key challenge for determining the right level of investment in asset risk management - that is: there is growing evidence that the current allowances are not sufficient; but Ofwat has not developed its approach appropriately. This has meant that at PR24, Ofwat failed to adopt an approach to the assessment of the efficient levels of base costs for capital maintenance and asset risk management in AMP8 that is adequate, given the circumstances in which it is applied. We describe these briefly below and discuss these points in more detail in Appendix 1, Section 5.

217. Although Ofwat and others have accepted the need to incorporate a meaningful forward-looking element into the setting of cost allowances for capital maintenance (see Section 4.2.2), Ofwat's approach to cost assessment at PR24 placed excessive weight on **econometric benchmarking of historical expenditure data**. As we have shown in Section 4.2.1, due to the importance of aging assets and sustainable investment over time in capital maintenance, expenditure requirements may change from one period to another. This means that we cannot assume that historical expenditure data is a reliable guide to efficient levels of capital maintenance expenditure in AMP8 (see Appendix 1, Section 5.1).

218. The potential impact is exacerbated if those historical expenditure levels have themselves been suppressed by decisions made by Ofwat and water companies in response to incentives set by Ofwat in previous price controls.[285] If past capital maintenance expenditure has been too low, that means that future expenditure needs will likely be even higher. In the first instance, the validity of the assumptions must be checked (i.e. if 10 should have been spent but only 8 was allowed/spent, that incorrect assumption should not be baked into the allowance for the next period. The next period may also need to reflect an additional amount to allow the company to catch up (i.e. allowing 12 to make up for the years where only 8 was spent).

[284] FD24 Expenditure, pg.87, SOC309.
[285] EI Asset Health 2025, pg.18, SOC003.

219. Ofwat's approach gives little or no consideration to the **benefits of historical expenditure** in terms of the management of long-term risks to performance and outcomes. This is particularly important for asset risk management because asset risk management strategies are designed to achieve an appropriate balance between performance, risk, and cost over time – and a one-size fits all approach does not work for the sector, or even across the various asset classes managed by each company (see Appendix 1, Section 5.1). By contrast, Ofgem's forward-looking network asset risk metric (**NARM**) approach (see Appendix 1 Section 4 Figure 10 Row 13) takes account of the monetised risk benefit of asset interventions calculated over the lifetime of the benefits. So, it is unlikely that mains renewal is the only asset risk management activity that has been underfunded by the base cost models (see Appendix 1, Section 6).

220. Ofwat's approach at PR24 does not give sufficient consideration to the factors leading to changes over time in efficient costs – in particular, the upward pressure on the efficient level of **costs arising from actions to improve outcomes performance** as incentivised under the ODI framework. That results in base costs which are unduly static, and do not reflect changes in service performance (see Appendix 1, Section 5.2).

221. Ofwat uses an "**upper quartile catch-up efficiency adjustment**"[286] to reduce base costs allowances relative to the levels of costs predicted by its econometric models of historical expenditure. Although this has been used for several price reviews, this is not, on balance, sensible given the limitations in the econometric modelling of base expenditure and risks a downward spiral in base allowances over successive controls (see Appendix 1, Section 5.3).

222. Like previous controls, Ofwat's PR24 framework places **strong incentives on companies to submit low base expenditure forecasts**, which may be distorting the degree to which companies feel confident in expressing the need for additional funding. For example, the QAA process offers both direct and indirect financial rewards for companies that submit business plan projections for base expenditure that prioritise near-term cost control over long-term investment - and risks of financial penalties for companies that submit forecasts that are higher than Ofwat's own cost assessment (see Appendix 1, Section 5.4).[287] Despite these undesirable incentives we did the right thing and submitted a request for funding for asset health, which detrimentally affected our QAA assessment.

223. Ofwat has **not collected sufficient information** relating to the physical condition of water companies' assets, the risk of asset failure, the risk of adverse consequences from asset failure (such as adverse impacts on customer service or environmental performance), or how these risks have been managed over time. This means that the base cost modelling and assessments are not capturing the investment needs. Ofwat missed opportunities to do this much earlier in AMP7 (see section 5.1.3), and when it eventually asked companies for information, it did not allow enough time for responses (see Appendix 1, Section 5.5).

224. The **CAC process was unduly restrictive**, including the criteria for assessment and the high evidential burden for Ofwat to accept claims. This meant that it was very difficult for the cost adjustment claim process to mitigate these issues (see Appendix 1 Section 5.7).

[286] FD24 Expenditure, pg.13, SOC309.
[287] EI Asset Health 2025, pg.20, SOC003.

225. The interaction of these factors has resulted in a cost assessment for base capital maintenance costs in FD24 that we do not believe that the CMA can have confidence in. For the purposes of this redetermination, we consider this should be addressed through the reconsideration of our enhancement claim for additional funding for asset health investment at treatment works and service reservoirs (see Section 4.3) and revisiting the funding for water mains renewal due to over-estimation of mains renewal rates implicitly funded by Ofwat's base cost modelling (see Section 4.4).

226. For the reasons set out in in the next section we do not consider it would be the right outcome for the CMA to place reliance on potential future outcomes from Ofwat's proposed future roadmap for asset health funding. While Ofwat's FD24 roadmap indicates the potential for it to decide to allow additional funding for asset health investment during AMP8, there are serious problems with the FD24 proposals (and subsequent Ofwat communications).

4.2.3.4 Under-developed and unpredictable arrangements for asset health funding before PR29

227. Ofwat's PR24 process highlighted sector-wide challenges in the availability, consistency, and comparability of asset health and condition data across companies. While Ofwat acknowledged concerns about asset deterioration, its ability to apply sector-wide cost adjustments was constrained due to gaps in robust, standardised evidence. Recognising these limitations, Ofwat introduced a roadmap[288] in December 2024 to enhance asset health understanding leading up to PR29. Ofwat's FD24 roadmap for asset health indicates the potential for it to decide to allow additional funding for asset risk management investment during AMP8 once further information on asset health has been collected from water companies.[289]

228. Ofwat said that in the 2025-27 period, it intends to "work collaboratively with the sector to identify priority assets to focus on in the short term." It would also assess "if there are any sector wide asset condition issues that need to and can be addressed before the next price review period (PR29)".[290]

229. Ofwat said that it is considering two options for addressing any issues identified:

> • Provide additional base expenditure allowances either in-period or through the PR24 end-of-period reconciliation if any sector wide asset condition issues identified are material and can be resolved by 31st March 2030. We recognise this may not be appropriate for large civil works that tend to have a lead time of around 2-3 years.
>
> • Allow companies to accelerate 2030-35 capital maintenance spend into the last two to three years of the 2025-30 period (2027-28, 2028-29 and 2029-30). We believe think this option is likely to be the most appropriate for most asset classes given the time required to plan and deliver work.

230. Ofwat then goes on to add:

> We will only consider providing additional allowances for asset renewals and refurbishment that is above and beyond what companies should be delivering with PR24 base expenditure allowances (i.e. what base buys). We will also take into account any under-delivery of capital maintenance in previous periods.

[288] FD24 Asset Health Roadmap, SOC555.
[289] FD24 Asset Health Roadmap, SOC555
[290] FD24 Expenditure, pg.92-93, SOC309.

> Particularly if companies have allowed asset condition to deteriorate over time. This avoids customers paying twice for capital maintenance works.
>
> To demonstrate the need for additional or accelerated capital maintenance expenditure allowances, we would also expect companies to provide the following evidence:
>
> • Demonstrate the asset condition issue is not limited to a single or small number of companies, unless caused by unique company specific factors that are outside of company control.
>
> • Evidence that PR24 base expenditure allowances are exhausted and have been invested efficiently to deliver outcomes for customers and the environment.
>
> • Demonstrate efficient investment of historical base expenditure allowances.
>
> • Demonstrate that the asset condition issue is the result of factors that are outside of company control, rather than poor asset management.[291]

231. We do not think that this process as outlined above is a sensible alternative to considering our cost adjustment claim for civils and service reservoirs, and we do not believe that its design will address our concerns. This is for the following reasons:

- **Ofwat's recent track record does not (and should not) inspire confidence**: As summarised in section 4.2.2 above (and covered in greater detail in Appendix 1 Section 4), Ofwat has made statements in recent years setting out its intention to tackle the issue of asset resilience in the sector, only for those efforts to be de-prioritised or ignored when faced with the practical challenges of setting appropriate allowances for companies to deliver the work needed. Ofwat has simply not followed through on its intentions in the past, and we have reached a point where further prevarication is hugely detrimental to long-term customer and environmental outcomes.
- **The required changes to the regulatory framework are not easy and will take time**: We are under no illusions about the scale of the challenge that Ofwat faces in developing a regulatory framework that is fit for purpose. In comparison, Ofgem started developing an evidence-based approach to monitoring and funding asset health in energy networks in the mid-2000s, starting with health indices in the 2009 electricity distribution price control review (DPCR5), leading up to the NARM-based approach it is proposing for RIIO-3.[292] Ofgem's approach is by no means perfect, and its approach is still evolving, but it has shown that its thinking in this area is significantly more developed than Ofwat's. It has taken Ofgem several years and multiple price reviews to get to this point. Even if work were to start in earnest now, the chances that Ofwat can develop a workable approach by PR29 seem slim.
- **Ofwat's near-term plans involve further retrospective obligations and adjustments**: Ofwat also states that it will "only consider providing additional allowances for asset renewals and refurbishment that is above and beyond what companies should be delivering with PR24 base expenditure allowances". This suggests that for the assets Ofwat does collect data, it will determine what companies "should" be delivering even

[291] FD24 Expenditure, pg.93, SOC309.
[292] See Appendix 1 Section 4, Figure 10 Row 13.

though it has set out no details as part of FD24 what these expectations are. This seems analogous to the adjustments that it made at FD24 for mains renewals and meter replacements where Ofwat retrospectively determined what companies should have been delivering in the past and then made downward adjustments to allowances on the basis that those activities have already been funded (see Section 5.4.2). The implication of this approach is that Ofwat's proposed approach could leave us in a worse position if we are held to further unjustified, arbitrary, unfunded and retrospective obligations.

- **Ofwat's proposed approach is incompatible with asset management or regulatory best practice**: We are concerned that the approach outlined is likely to be at odds with asset management best practice. First, the approach appears to treat all companies as homogenous entities that need to undertake the same volumes of activity in each AMP targeting the same assets (e.g. the percentage of mains renewals per year). However, companies that manage their assets responsibly will prioritise their interventions using risk-based assessments of where interventions are most needed. It is unlikely that the interventions in the past or in the future will be the same across companies given their different operating environments, asset conditions and histories of asset investment. Second, if we are set PCDs for specified work volumes, as Ofwat has done for the other adjustments in FD24, the approach may identify works that are not the highest priority and could divert expenditure from other higher priority areas. It also infers that, as Ofwat moves through the asset bases, companies will eventually simply deliver prescribed volumes of replacements across the whole asset base, with no flexibility to target risk. In contrast, Ofgem's NARM approach explicitly recognises that network risk reduction can be achieved in different ways across companies, and what matters is the overall level of risk reduction achieved – not arbitrary targets for replacing particular assets.
- **Inability to consider schemes required earlier in AMP8**: implicit within Ofwat's statement is that the process will only consider works that have not started yet. This means that any works included within our business case would be ineligible for funding under the process. Again, this means that the redetermination is the only route to assessing these in a timely manner that would allow us to recover our efficient costs.
- **The same restrictive PR24 criteria for CACs will likely apply**: In considering whether any additional funding will be provided, Ofwat appears to rely on the same (or very similar) restrictive criteria that it applied to its assessment of CACs at PR24, including the requirement for evidence that the need for expenditure is due to factors "outside of company control" and that the issue to be addressed is not limited to a single/small number of companies, unless caused by factors outside the company's control. As set out in Appendix 1, section 5.7, there is simply no justification for these requirements.
- **Lack of predictability and detail**: There is insufficient predictability and clarity about the regulatory arrangements for the review, including the conditions under which additional funding for asset risk management would be provided, the way in which additional funding would be calculated and any associated deliverable determined. These problems are exacerbated by the lack of clarity on how any changes to allowances before PR29 would be implemented, creating uncertainty about the timing of recovery of expenditure through charges. Furthermore, unless the additional allowances are implemented through formal licence changes, we would not have the ability to challenge Ofwat's decisions. With this uncertainty and the potential for further retrospective obligations and adjustments as discussed above, we do not think that the process can be relied upon to address our concerns outside of the redetermination process.

232. For these reasons, we are left with little choice but to request that the CMA steps in through this redetermination and provides the much-needed funding for the business case for civils and service reservoirs that we have submitted. In its PR19 redetermination when considering a rejected enhancement case the CMA said:

> We note Ofwat's view that this is not a 'now or never' decision, which could be deferred to the next price control to allow Northumbrian time to develop its case. However, we have substantial concerns with this approach. By their nature, resilience projects are forward-looking and can generally be delayed, but this results in customers continuing to be exposed to the identified risk, which is not appropriate here.[293]

233. We agree. There are costs to customers in deferring decisions on funding for work to manage risk on critical assets – we showed in BP24 that this would be both more expensive and expose customers and the environment to increased risks (see Section 4.3).[294] We have supplemented this analysis with additional work on the importance of intervening at the right time (Section 4.3.6). We should not need to wait until Ofwat has been able to collect sector-wide data and designed on the appropriate regulatory approach to funding asset health interventions. Ofwat's track record suggests that waiting for that to happen is likely to be damaging consequences for service levels and environmental outcomes. As set out in the next section, there are decisions that the CMA could make now on low regrets investments that avoid exposing customers and the environment to unnecessary risk.

4.2.3.5 Considerations for the CMA

234. We draw a number of implications for the CMA's overall approach:

- We know that the CMA will be constrained on cost assessment – simply by the time and information available – and will need to use at least parts of Ofwat's approach. However, there is still scope for the CMA to reconsider the information that companies have already provided, or bring in new information, and to draw conclusions about the right decisions for our specific enhancement cases (even if this is just an interim measure before PR29).
- Benchmarking historical expenditure is a relevant source of information, but it should not be relied on exclusively. A balanced view that looks across a range of evidence, including forward-looking needs, is appropriate. There is a role for adjustments to be applied, informed by evidence such as that from our enhancement case for additional asset health investment at treatment works and service reservoirs.
- Given the issues raised in this section, it is not sensible to start from a premise that the cost allowances from the econometric modelling of base costs are appropriate for the 2025-30 period, unless there is "compelling evidence" that more is needed.
- There would be some value in taking account of evidence that seeks to bring a different perspective for assessing forward-looking capital maintenance needs – such as using the approach based on asset lives set out in Section 4.2. Even if this type of analysis is approximate and has limitations, giving this some weight in the overall assessment can help tackle concerns about an excessive reliance on historical levels of expenditure.

[293] CMA FD19 Decision, pg.290 - para. 5.366, SOC334.
[294] BP24 Appendix A3-21 Asset Health, SOC045.

- It is unlikely that the CMA would be able to resolve all the problems relating to Ofwat's approach to cost assessment for base costs and capital maintenance, especially where these relate to the information available. For example, although Ofwat should have taken action early in the PR24 process to improve the information available on asset health, there is now limited time for this to be addressed as part of the CMA's redetermination.
- However, decisions to fund well-justified and low regret investments to manage asset risk in specific asset classes should be made now (see Section 4.3). The CMA may need to adopt an approach which, while not perfect as an approach for PR29 and beyond, is a workable response to existing informational constraints.
- The CMA should not rely on Ofwat's unclear and unpredictable arrangements for providing additional funding for asset health work ahead of PR29 set out as part of its asset health roadmap.

4.3 TARGETED CASE FOR AMP8 INVESTMENT IN CIVIL STRUCTURES AND SERVICE RESERVOIRS

235. We submitted a business case for asset health related investment - NES35[295] - that was rejected by Ofwat in FD24.[296] It is important for this investment to proceed in AMP8, so we ask that the CMA consider our request for additional allowances to fund this investment as part of this redetermination. To support the CMA's assessment, we have prepared an updated version of our enhancement case which is provided at Appendix 2, supported by various expert reports (see Figure 3).

236. In this section we set out:

- an overview of our BP24 request for additional allowances for asset health (see Section 4.3.1);
- commentary on the categorisation of our investment case (see Section 4.3.2):
- our representations on DD24 and resubmission of our asset health proposals (see Section 4.3.3);
- Ofwat's FD24 assessment of our investment case (see Section 4.3.4);
- our concerns with Ofwat's assessment of our case (see Section 4.3.5);
- the risks and potential consequences of delaying the investment until AMP9 (see Section 4.3.6);
- a summary of the updated case that we are submitting to the CMA for redetermination (see Section 4.3.7); and
- considerations for the CMA (see Section 4.3.8).

4.3.1 Our BP24 proposals on asset health

237. As we have set out above (see Section 4.2) there is currently insufficient investment in asset maintenance and replacement across the sector. This is a complex problem that, in the long term, needs a consistent sector-wide approach with a long-term focus supported by a fundamental shift in the regulatory framework. When it came to developing our BP24 (see Section 2.6.3), however, we recognised that despite the opportunities Ofwat had to

[295] BP24 Appendix A3-21 Asset Health, SOC045.
[296] Ofwat, PR24 final determinations: CA19 NES Base cost adjustment claim feeder model (**FD24 NES CAC Feeder Model**), December 2024, SOC321.

address this for PR24 (see Section 4.2.2) the changes needed to enable this shift would probably not be in place before PR29.[297]

238. We understood that the scale of the challenge we face on asset risk and resilience meant that we could not wait until PR29 before we start to make progress. We set out in detail in our BP24 business case the process we undertook to review asset-related risks to service, performance and safety across our asset base.[298] That business case remains the most comprehensive account of the issue we considered, the process we followed, and the conclusions we reached and forms an important part of this SoC.

239. By way of summary, our assessment considered three criteria: a) the stability of investment, i.e. whether there is a need for a step change in the level of maintenance expenditure, b) asset criticality, i.e. seriousness of the consequences of asset failure; and c) ability to defer, i.e. the extent to which investment can be deferred or scheduled on a programme basis.[299] The three asset types identified below scored highly on the need to target maintenance activity during AMP8.[300] These included:

- civil structures at water treatment works (**WTW**s) and sewage treatment works (**STWs**);
- water mains; and
- service reservoirs (network storage assets).

240. Service reservoirs are among the most critical assets in this system because they provide storage for treated drinking water to secure a continuous supply even when demand fluctuates. While we carefully manage the risk relating to service reservoirs, and we have built in sufficient resilience into our system to avoid supply disruptions, for instance if one of our service reservoirs were to fail on a typical day. However, if that failure were to happen during an extreme demand scenario or at the same as a critical main burst, there is a higher likelihood of supply disruption. Similarly, water and wastewater treatment works are encased in 'civil structures' which refer to their physical, non-mechanical parts. These are often long-lived assets built from concrete, steel or masonry (for example storage tanks, retaining walls, and pump-house buildings). The degradation of these structures, if left unaddressed, leads to a growing risk of asset failures that may interrupt supply to customers or the safe processing of wastewater, in turn causing pollution.

241. Our view at the time of developing BP24 was that civil structures at WTWs and STWs need to be prioritised for AMP8 because of their criticality, i.e. the risk that a structural failure could lead to lengthy interruptions of service or pollution incidents.[301] We also concluded that water mains are less critical to service levels, but due to the large volume of work that is needed on mains renewals there are risks from storing up the work for future years.[302] Moreover, Ofwat had signalled a willingness to consider additional investment for this asset group.[303] As such, our

[297] BP24 Appendix A3-21 Asset Health, Section 1 – Executive Summary, SOC045.
[298] BP24 Appendix A3-21 Asset Health, SOC045.
[299] BP24 Appendix A3-21 Asset Health, Section 4.1, SOC045.
[300] BP24 Appendix A3-21 Asset Health, Section 4.1, SOC045.
[301] BP24 Appendix A3-21 Asset Health, pg.42, SOC045.
[302] BP24 Appendix A3-21 Asset Health, pg.5, SOC045.
[303] FM24 Appendix 9 Expenditure, pg. 51, SOC292

BP24 investment case focused on additional expenditure for repair and replacement work on our civil structures and mains renewals.[304]

242. Our review had also identified water service reservoirs are a priority area,[305] but at the time of our business plan submission we were reviewing our asset standards and long-term investment plans for these assets.[306] Having reflected on customer concerns about affordability during our customer engagement we explored options to balance affordability against an increased investment in asset health:

> "This challenge led to us removing our enhancement need for service reservoirs and so allowing us to include some mains replacement without changing the overall level of investment for asset health – and so remaining close to the level of investment that our customers supported in our qualitative research. Our customers had challenged us to go further to tackle potential future problems including for mains replacement, and so we included this in our investment plans for 2025-30."[307]

243. Consistent with our broader views on the historical unsustainable underfunding of capital maintenance (see Section 4.2.1) we estimated that the amount of investment needed during AMP8 to manage risk in civil structures (water and wastewater) is significantly higher than the amount that we estimated as being implicitly included within our base cost allowance for maintenance of these assets.[308] We concluded that we would be unfunded for this work without additional allowances (either as enhancement allowances or an adjustment to base cost allowances). As such in BP24 we sought additional funding for civil structures (see Figure 21) as well as additional funding for mains renewals (see Section 4.4).

FIGURE 21 - OUR BP24 INVESTMENT CASE FOR ADDITIONAL ALLOWANCES FOR CIVIL STRUCTURES

	Water	Wastewater
Total cost of maintenance on civil structures forecast for AMP8	£25.9m	£107.2m
Estimated implicit allowance from base	£8.1m	£12.8m
Additional allowance requested	£17.8m	£94.4m

Source: BP24 Appendix A3-21 Asset Health, Figure 1, SOC045.

4.3.2 Categorisation of our investment case

244. Our investment case NES35 presented the evidence for the need for additional funding to maintain the health of the identified assets, above the implicit allowance anticipated from Ofwat's PR24 base cost assessment. We presented this as an enhancement case as we believed that it was more closely aligned to Ofwat's view of enhancement expenditure than with the criteria for CACs (see Appendix 1, Section 5.7). At the same time, we recognised that in its PR24 methodology, Ofwat had stated that it was "…open to considering company evidence on additional exogenous factors/cost drivers that require a step change in efficient capital maintenance expenditure through the cost adjustment claim process."[309]

[304] BP24 Appendix A3-21 Asset Health, Figures 1 and 2, SOC045.
[305] BP24 Appendix A3-21 Asset Health, Section 4.1.1, Figure 3 and Figure 17, SOC045.
[306] BP24 Appendix A3-21 Asset Health, pg.43, SOC045.
[307] BP24 Appendix A3-21 Asset Health, pg.31, SOC045.
[308] BP24 Appendix A3-21 Asset Health, Sections 3, 5 and 7, SOC045.
[309] FM24, pg.79, SOC484.

245. As such, we prepared our investment case to address the criteria for both enhancement cases and CACs.[310] We covered: the need for the investment;[311] an assessment of why the implicit base allowance is insufficient (i.e. the need for an adjustment);[312] identification of the best options for customers;[313] an assessment of cost efficiency;[314] and our proposals for customer protection.[315] We also submitted our business case to Ofwat in advance of our BP24 submission (in July 2023) in line with Ofwat's desire to see these cases as early as possible.

246. In DD24 Ofwat said that it had "reallocated Northumbrian Water's asset health business case from enhancement to base expenditure and assessed it as a cost adjustment claim to be consistent with similar claims".[316] Ofwat proposed to reject our claim for an adjustment on the following grounds:

- on the 'need for adjustment' assessment gate, Ofwat assessed our claim as a "fail"; and
- on the 'cost efficiency' assessment gate, Ofwat assessed our claim as a "partial pass". [317]

247. In particular Ofwat noted that we had not provided compelling evidence that we face unique circumstances and that our case was instead "based on the need for a step change in the rate at which the company replaces its assets".[318]

4.3.3 Resubmission of the asset health investment case in our DDR

248. In our DDR we set out a detailed response to Ofwat's stated reasons for provisionally concluding that we had failed the 'need for adjustment' criterion.[319] We accepted that we had not argued that we faced unique circumstances and reiterated that our investment case was expressly intended to address historic underfunding of capital maintenance, hence why it had been presented as an enhancement case.[320] Further details on our concerns about the categorisation of this investment case and the unduly restrictive approach to CACs are set out in Appendix 5, Section 5.7. We also included a third-party assurance statement[321] covering our proposed costs to address Ofwat's concern about the lack of such a statement in BP24.[322]

249. We also highlighted our disappointment that Ofwat had not substantively engaged with us about our business case in the nine months between the submission of our plan in October 2023 (we shared the final version of the asset health investment case with Ofwat even earlier in July 2023) and the publication of draft determinations in July 2024. We noted that we could have undertaken work to address Ofwat's concerns earlier had we received feedback, and that a seven-week representation window does not provide us with a reasonable opportunity to address any concerns raised.[323]

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[310] FM24 Appendix 9 Expenditure, Appendix A1, pg.154, SOC292.
[311] BP24 Appendix A3-21 Asset Health, Sections 3 and 4, SOC045.
[312] BP24 Appendix A3-21 Asset Health, Section 5, SOC045.
[313] BP24 Appendix A3-21 Asset Health, Section 6, SOC045.
[314] BP24 Appendix A3-21 Asset Health, Section 7, SOC045.
[315] BP24 Appendix A3-21 Asset Health, Section 8, SOC045.
[316] DD24 Expenditure, pg.30, SOC296.
[317] Ofwat, PR24 draft determinations: NES Base cost adjustment claim feeder model (**DD24 NES CAC Feeder Model**), 11 July 2024, worksheets 'NES_CAC1' and 'NES_CAC2', SOC510.
[318] DD24 NES CAC Feeder Model, worksheets 'NES_CAC1' and 'NES_CAC2', Section 1.1, SOC510.
[319] NWL DDR, Section 5.2, SOC191.
[320] NWL DDR, Section 5.2.1, SOC191.
[321] NES80B - NWL Response to Ofwat DD24, Northumbrian Water Asset Health Cost Assurance Methodology (**NWL DDR Water Asset Health Cost Assurance**), August 2024, SOC208.
[322] DD24 NES CAC Feeder Model, worksheets 'NES_CAC1' and 'NES_CAC2', Section 2.3, SOC510.
[323] NWL DDR, pg.81 - para. 307, SOC191.

250. In our DDR we reflected on our decision to remove service reservoirs from our investment case and our long-term strategy with respect to the timing of "no regrets" investment in capital maintenance.[324] Many service reservoir replacements require land acquisition, planning consent, and environmental considerations. As ageing reservoirs, made from non-preferred materials, approach the point where refurbishment is no longer viable, our phased delivery of rolling replacements is tuned to maintain supply chain capacity. Given the long lead times for land acquisition (often up to five years) these replacements must be anticipated well in advance of their forecast commissioning dates.[325]

251. We noted that customers had supported the inclusion of investment to replace service reservoirs in AMP8 if it would deliver value and reduce future step increases in prices. As DD24 indicated lower forecast bills in the North East compared to our BP24 forecasts, we identified that we had an opportunity to bring forward some of that "no regrets" investment from AMP9 in order to further reduce risk and smooth bill impacts over the longer term.[326]

252. On that basis, we submitted an addendum to our BP24 business case NES35 to include additional investment in civil structures at our wastewater treatment works and replacement of four water service reservoirs located in the North East region (see NES35A).[327] This largely reflected work undertaken during the development of BP24.

253. Figure 22 summarises our updated DDR request for investment in civil structures.

FIGURE 22 DDR REQUEST FOR ASSET HEALTH INVESTMENT IN CIVIL STRUCTURES

	Water	Wastewater
Total cost of maintenance on civil structures forecast for AMP8 as set out in BP24	£25.9m	£107.2m
Additional investment proposed in our DDR	-	£29.2m
Estimated implicit allowance from base	£8.1m	£12.8m
Additional allowance requested including the DDR addendum	£17.8m	£123.6m

Source: NWL OFW-REP-NES-013 NES Response (**OFW-REP-NES-013 Response**), pg.6, SOC544.

254. Our DDR request for additional allowances for service reservoirs (accounting for implicit allowances) is summarised in Figure 23. For the avoidance of doubt, this request is additional to the adjustment requested for civil structures summarised above. Further information on how these figures were estimated is available in NES35A.[328]

FIGURE 23 - OUR DDR REQUEST FOR ADDITIONAL ALLOWANCES FOR SERVICE RESERVOIRS

	Capex	Opex	Total
Forecast cost of service reservoir replacement for AMP8	£50.92m	£0.103m	
Deduction for estimated implicit allowance from base	£2.315m	-	
Deduction for maintenance savings	£0.92m		
Additional allowance requested	£47.685m	£0.103m	£47.788m

Source: NWL DDR Service Reservoir Replacements, Table 1, SOC206.

[324] NWL DDR, pg.228 - Section 11.2, SOC191.
[325] NES35A - NWL Response to Ofwat DD24, Supplementary Information for Service Reservoir Replacements (**NWL DDR Service Reservoir Replacements**), August 2024, pg.18, SOC206.
[326] NWL DDR, para. 1009, SOC191.
[327] NWL DDR Service Reservoir Replacements, SOC206.
[328] NWL DDR Service Reservoir Replacements, Chapters 3 and 5, SOC206.

4.3.4 Ofwat's FD24 assessment of our investment case

255. Ofwat's FD24 included a base expenditure allowance of £3.5bn, which was £179mn lower than the amount we requested in our DDR:

> This reduction is based on our assessment of the company's capital maintenance cost adjustment claims, which resulted in partial acceptance of mains replacement, rejection of water capital maintenance at treatment works and service reservoirs, and acceptance of wastewater capital maintenance at treatment works."[329]

256. At FD24 Ofwat rejected our investment case in its entirety:[330]

- on the 'need for adjustment' assessment gate, Ofwat assessed our claim as a "fail"; and
- on the "cost efficiency" assessment, there is some ambiguity about the assessment result. The headline assessment says "fail"[331] but the detailed assessment says: "We therefore consider Northumbrian Water to have **partially passed the cost efficiency assessment gate**." [332] A partial pass would be consistent with DD24 (see paragraph 246) and as such we consider that the categorisation as 'fail' was an inadvertent error.

4.3.5 We consider that Ofwat's rejection of our investment case was not justified

257. Looking at Ofwat's criticisms of our investment case in both DD24 and FD24 we consider that the points of challenge can be grouped thematically as set out in Figure 24.

FIGURE 24: BREAKDOWN OF OFWAT'S RATIONALE FOR REJECTING OUR ASSET HEALTH INVESTMENT CASE

Ofwat FD24 rationale and our response
1. Need for adjustment: Absence of clear outputs
258. Ofwat asserts that we have "not committed to delivering a specific solution(s)" because our case allowed for solutions to be "determined through detailed inspections". As such Ofwat concluded that: > This means that the outputs of the investment are unclear, and it would be difficult to protect customers from under-delivery of investment through a PCD. This also means that the cost estimates are very uncertain. This creates a risk of windfall gains, particularly if the company decides to deliver a less costly solution. [333]
259. We acknowledge that our investment case reflected the challenges in assessing the exact nature of interventions that will be required across the asset base, which would likely not become apparent until we commence each project. We had, however, adopted an approach to estimating the scope and cost of interventions that reflected that inherent uncertainty.[334]
260. Our investment case put forward 270 interventions to improve the condition of civil structures at 81 WTW assets and 189 STW assets and covers storm tanks, buildings, kiosks, chambers, overflow channels, treatment tanks, and other related civil structures at both water and wastewater treatment works. We also identified four service reservoirs requiring replacement in AMP8 as part of our rolling programme to secure these assets in a timely way. We had originally put forward a weighted model of costs based on the probability of different tasks being required (as we could not fully know until assets have been taken out of commission and inspected), which Ofwat describes as in the DD as evidence of good practice – only to contradict this at FD.

[329] FD24 Expenditure, pg.373, SOC309.
[330] FD24 NES CAC Feeder Model, worksheets 'NES_CAC1' and 'NES_CAC2', SOC321.
[331] FD24 NES CAC Feeder Model, worksheets 'NES_CAC1' and 'NES_CAC2' row 2.0, SOC321.
[332] FD24 NES CAC Feeder Model, worksheets 'NES_CAC1' and 'NES_CAC2' row 2.2-2.3, SOC321.
[333] FD24 NES CAC Feeder Model, SOC321.
[334] BP24 Appendix A3-21 Asset Health, Section 6.1.1, SOC045.

Ofwat FD24 rationale and our response

261. To provide further confidence in the scoping of our investment case we have commissioned an **independent optioneering review** with deep dive assessments on service reservoirs investment, to better demonstrate that we have selected the right options to inform both the costings and PCDs. This review showed that our option selection process was well structured, and our decisions were based on asset condition data, strategic studies and vulnerability assessments. It also shows that we considered a range of different interventions for each site so that our portfolio investment tool was able to select the best value investment for service reservoirs.[335]

262. We have also undertaken further work to develop **bottom-up scoping** for the small number of higher value schemes that drive most of the cost in our investment case, supported by updated cost estimates. This is detailed in Appendix 2, Section 4.

263. That is reflected in our **proposed PCDs** which are consistent with the approach that Ofwat adopted for PCDs at FD24 and are designed to ensure that allowances are returned to customers if there is under-delivery, thereby mitigating any risk that we benefit from "windfall gains".[336] The Civil Structures PCD proposes scheme-specific PCD non-delivery payment rates based on the forecast cost of delivering the scheme and ensures measurable improvements in condition grades from 4 or 5 (poor/very poor) to 1 or 2 (fair/good), using engineer-certified assessments.[337] This will deliver much better long term asset health and lower risks for customers and the environment from asset failure. The Service Reservoir PCD ensures that the new reservoirs will provide equivalent capacity to those being abandoned, ensuring continuity of treated water storage, failing which the associated PCD non-delivery payment would apply. [338]

264. We have also **independently confirmed that our investment proposals for service reservoirs are deliverable** in AMP8 and that any risks can be mitigated through business-as-usual design and delivery processes.[339] This should provide additional comfort that our customers will be adequately protected.

2. Need for adjustment: The use of internal cost data

265. Ofwat asserts that we have:

> not arrived at a view of 'what base buys' as its claim is focused on its internal cost data only, and an improvement in asset health which it considers goes above and beyond its base allowance to maintain asset health. This significantly increases the risk that customers pay twice if we allow the cost adjustment, once through base cost model allowances and again through the proposed cost adjustment. [340]

266. We accept that our estimate of implicit allowances for civil structures is based on our own internal cost data.[341] This is because we do not have access to the relevant sector-wide data, and neither does Ofwat. Industry-wide cost data at an activity level is only available for a limited set of activities. Ofwat acknowledged this in FD24 but deferred resolution of the problem to PR29, saying that:

> Assessing capital maintenance cost adjustment claims is challenging. The challenge stems from the lack of available robust asset condition and asset workload data that is comparable across companies and time, which enable us to understand what companies should already deliver with base expenditure allowances so that customers do not pay twice. We have overcome some of these challenges at PR24 for water mains, sewers and bioresources assets. **But not for other assets such as treatment works and service reservoirs. We intend to collect asset condition and workload data across a wide range of assets maintained by water and wastewater companies ahead of PR29.**[342] (emphasis added)

267. It is unreasonable for Ofwat to set an expectation that industry-wide data must be used to estimate implicit allowances when it is aware that this is currently impossible. Ofwat's approach effectively rules out cost adjustment claims for the majority of activities that companies need to undertake.

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[335] Aqua Optioneering Report 2025, SOC005.
[336] We proposed the development of a PCD for Civil Structures, developed in line with Ofwat's guidance, which set out the specific solutions we planned to deliver. In our DDR we proposed that Ofwat should set a PCD for our service reservoir investment case based on similar PCDs that had already been set.
[337] Appendix 3 Proposed PCD – Asset Health Civil Structures, Aqua PCD Asset Health Civil Structures Scheme List SOC010
[338] Appendix 4 Proposed PCD – Asset Health Service Reservoirs
[339] Aqua Consultants, NWL PR24, Deliverability Review, Service Reservoir Investment (**Aqua Service Reservoir Deliverability 2025**), 12 March 2025, SOC009.
[340] FD24 NES CAC Feeder Model, SOC321.
[341] BP24 Appendix A3-21 Asset Health, Sections 5.2 and 5.4, SOC045.
[342] FD24 Expenditure, pg.91-92, SOC309.

Ofwat FD24 rationale and our response

268. The CMA has previously recognised that Ofwat can place an unjustified reliance on particular data or evidence which can undermine the consideration of proposals for investment:

> Ofwat appears to consider that without such quantified evidence, Northumbrian's proposal is effectively unsustainable. We disagree with this view. While quantitative analysis of the kind Ofwat has described is often helpful and is widely used within the regulatory regime, we do not consider that its absence should result in an outright rejection of a proposed resilience scheme in all cases. Instead, this case falls to an exercise of judgement regarding the evaluation of the specific facts available, and their implications. This is consistent with the CMA's general approach to evidence assessment.[343]

3. Need for adjustment: risk of customers paying twice

269. Building on its concerns about the need to properly consider 'what base buys' Ofwat asserts:

> This significantly increases the risk that customers pay twice if we allow the cost adjustment, once through base cost model allowances and again through the proposed cost adjustment. [344]

270. We agree with Ofwat that acceptance of claims should not result in customers paying twice for things. We and other companies have used as evidence the fact that we have spent our past allowances in full in order to demonstrate that a future cost adjustment would not result in customers paying twice. We have also shown that we are efficient and a good asset manager. However, Ofwat disagreed with this:

> Comparing spend versus allowances is not enough to make this conclusion. Companies have a duty to maintain an efficient and economical system of water supply, including maintaining good asset health. Companies must deliver sufficient asset renewals and refurbishments with base expenditure allowances to maintain long-term capability of assets. We expect companies to propose an appropriate amount of asset renewals and refurbishment in their business plan submissions to achieve this, and to deliver on their business plan proposals. Evidence presented in business plans suggests that some companies may not have maintained their assets as expected. Spending allowances in full and choosing where to direct this spend is within management control. However, when investing the company should maintain its duty to customers to maintain good asset health. If it fails to do so, customers should not pay twice for these choices.[345]

271. We do not understand the rationale for this position. If companies have efficiently spent elsewhere the allowances that Ofwat has provided and customers have paid for, then there is no possibility that customers would be paying for something twice if a future uplift were provided. Ofwat could be saying that companies should be spending whatever it takes in any period to maintain asset health even if this is significantly in excess of the funding provided by the price control. However, customers have not paid for higher capital maintenance levels in the past so they therefore cannot be paying twice if an uplift is provided in the future. Ofwat seems to be of the view that it does not have a duty or responsibility of its own to set appropriate funding levels and that companies must simply spend whatever is needed. This cannot lead to a sustainable outcome in the long run.

4. Need for adjustment: Historical base allowances

272. Reflecting on our focus on "the replacement / refurbishment of many small assets in condition grade 4 and 5, i.e. assets in poorest condition" Ofwat asserts that our investment case:

> does not provide compelling evidence for why these asset condition issues have not already been addressed through its historical base allowances. [346]

273. As set out in Sections 2.4.3 and 2.6.3 we can point to strong performance in asset management. Our asset management strategy involves managing asset health by maintaining an appropriate balance in performance, risk, benefit and cost over the long term. Our capital maintenance plan in each AMP is the outcome of the application of that strategy to the prevailing circumstances at the time. Asset management priorities can change over time as assets age and deteriorate, due to climate change and other external events such as supply chain constraints.[347]

[343] CMA FD19 Decision, para. 5.358, SOC334.
[344] FD24 NES CAC Feeder Model, SOC321.
[345] FD24 Expenditure, pg.89, SOC309.
[346] FD24 NES CAC Feeder Model, SOC321.
[347] See also BP24 Appendix A3-21 Asset Health, Section 3.5, SOC045.

Ofwat FD24 rationale and our response

274. As we set out in Section 4.2.1.2 we have spent more on capital maintenance than we have recovered from customers (after cost sharing) in the period since AMP3.[348] We did not carry out the work proposed in our enhancement case in previous AMPs because these assets were not identified as priorities. We focused our expenditure on areas that were identified as higher priority, based on the application of asset risk management principles.

275. In Figure 26 we provide a backcast of condition grades across the assets in question over the period covering 2010-2022. This shows that a large (ad increasing) proportion of our assets were in the top 2 condition grades (grades 1 and 2) over that period suggesting that Ofwat is incorrect in its assertion that we should have made these investments in the past.

276. It is essential to recognise that asset investment must be made at the right time, aligned with actual needs rather than arbitrary schedules. Ofwat's position implies that we should have invested in major asset replacements long before there was a demonstrable need. However, effective asset management requires prioritising investment when it delivers the most value and when intervention is necessary to maintain service resilience. Service reservoirs and wastewater treatment works, for example, have been well-maintained over previous investment periods, with no justifiable need for large-scale replacements at earlier stages. Now, as these assets reach the point where intervention is essential, our funding submissions reflect genuine need and strategic prioritisation. Investing prematurely in asset replacement would have diverted resources away from pressing priorities, failing to deliver the best outcomes for customers. Our historical investment decisions have been prudent, ensuring that asset health has been sustained without unnecessary expenditure. Now, with evidence-backed assessments indicating the necessity of major projects, our approach remains rooted in sound asset stewardship and efficiency.

277. We are confident on this basis that we have consistently managed our assets efficiently, balancing condition, performance, criticality, and future needs. Importantly, we have delivered exceptional value to customers while maintaining a resilient infrastructure as demonstrated by our strong performance on cost efficiency and service performance as set out in Figure 6.

5. Need for adjustment: Discouraging the sector from delivering renewals from base

278. Ofwat expresses its concern about the potential impact of its decision on our investment case on the activities and incentives for other companies:

> There is therefore a risk that accepting Northumbrian Water's proposal would discourage all water companies from renewing and maintaining their assets with base expenditure allowances going forward. [349]

279. We consider that our investment case should be considered on its merits. As explained above we have spent our implicit allowances in aggregate over multiple AMPs (after taking account of cost sharing). We are not seeking an adjustment to deal with the consequences of inefficient decision-making.

280. Ofwat also presents no evidence that we or other companies have been inefficient in the past. Given the regulatory incentives we have on cost sharing and to improve outcomes, companies are strongly incentivised to spend their allowances efficiently, so we find it unlikely to have been the case.

281. In any event, we do not consider that it is reasonable for Ofwat to rely on the problems inherent in its base cost assessment and CAC process as a justification for rejecting our investment case. The theoretical risk identified by Ofwat, that a company might seek to make a CAC to deal with the consequences of historical decisions on capital maintenance, is a feature of its own regulatory framework. As we have set out (see Section 4.2.3.3 and Appendix 5) there is a need to find a better approach to the setting of base costs for PR29, such that CACs are not needed. Until that happens, however, the CAC process is the only avenue available to companies to address genuine funding shortfalls created by Ofwat's cost assessment framework (see Appendix 5, Section 5.7).

6. Need for adjustment: Compelling evidence of exogenous factors

282. Ofwat reiterates its requirement that CACs should be limited to situations that reflect circumstances unique to a company, compared to the rest of the sector:

> The forecast increase in capital maintenance expenditure is driven by factors inside of company control. In response, the company states that its case is related to forward-looking expenditure requirements, and the

[348] See also BP24 Appendix A3-21 Asset Health, Section 3.3.2, SOC045.
[349] FD24 NES CAC Feeder Model, SOC321.

> expected increase in future costs relative to historical costs. And that it submitted this as an enhancement case as it accepts that its circumstances are not different to other companies. The company fails to engage with this requirement set out in our PR24 methodology. The activities covered under the proposed scope are consistent with those that should be delivered through long-term base expenditure allowances to maintain good asset health. We therefore expect any company that requires an adjustment to be able to provide compelling evidence of exogeneous factors that are driving its investment that mean it requires an adjustment over and above other companies. [350]

283. We have been open about the fact that our investment case is not driven by exogenous factors unique to us. Ofwat's base cost assessment creates a funding shortfall because it is based on historical costs and lacks a forward-looking view of capital maintenance, or any cost drivers that can help estimate the efficient levels of costs to manage asset risk in the future (see Section 4.2.3).

284. Ofwat's position seems to be that a CAC for capital maintenance can only succeed if the claim is driven by exogenous factors. This is unnecessarily restrictive and serves no useful purpose (see Appendix 5, Section 5.7).

7. Need for adjustment: Insufficient maintenance in previous years

285. Ofwat asserts that it considers our forecast need additional future investment is driven by insufficient asset maintenance historically:

> Based on the company's original business plan submission and its draft determinations representations, we hold our draft determination view that the evidence suggests that the forecast increase in capital maintenance expenditure is primarily because it has not sufficiently maintained asset condition in previous years and has not replaced long-life assets at the optimal time to balance expenditure requirements over the long-term. The company has a duty to maintain an efficient and economical system of water supply, and it accepts it has sufficient funds to undertake their functions and meet their statutory obligations in accepting its final determination. [351]

286. It is not clear what evidence is being referred to here. Ofwat has not provided any evidence to support its claim that "the forecast increase in capital maintenance expenditure is primarily because it has not sufficiently maintained asset condition in previous years" and that we have "not replaced long-life assets at the optimal time". In contrast, as set out above (see Section 4.2.1.2) we can demonstrate that we have spent our capital maintenance allowances in full over the past five AMPs. Furthermore, as set out in Section 4.3.6, it is simply not efficient to replace assets earlier than they need to be replaced.

287. We agree that we have a duty to maintain an efficient an economical system of water supply and that the price controls set by Ofwat are intended to ensure that we are able to finance the proper carrying out of those duties (see Appendix 3). We have not accepted FD24 because, amongst other things, we do not consider that it allows sufficient funding for the delivery of a sustainable level of capital maintenance in AMP8 and beyond.

8. Need for adjustment: Evidence of efficient use of historical allowances

288. Ofwat asserts that we have "not provided compelling evidence to demonstrate efficient use of base expenditure allowances":

> We accept our unit cost analysis at draft determinations did not appropriately take into account the other cost drivers included in the base cost models. Nevertheless, the company estimates it has underspent its capital maintenance allowance by 1% (£66m) before cost sharing, with most of this driven by a large underspend during the 2010-15 period of almost 25% (£327m), when separate opex and capital maintenance allowances were provided. We are therefore concerned that this cost adjustment claim is to provide allowances for capital maintenance that the company should have delivered in previous periods, which would lead to customers paying twice. [352]

289. The evidence that Ofwat presents on historical expenditure is highly selective and disregards the impact of cost sharing. As we have set out above (see Section 4.2.1.2) whilst there was an underspend in the period Ofwat singles out, there were overspends in other periods, and after cost sharing is applied over the last 25 years we

[350] FD24 NES CAC Feeder Model, SOC321.
[351] FD24 NES CAC Feeder Model, SOC321.
[352] FD24 NES CAC Feeder Model, SOC321.

Ofwat FD24 rationale and our response

have spent more on capital maintenance than we have recovered from customers (we will have overspent against our allowances by £260m or 5%).

290. We can also demonstrate that we are a relatively strong performer in Ofwat's base cost models at PR24 (where we were the 4th most efficient WASC based on the FD24 models)[353] and were the benchmark company for wastewater at PR19 (see Section 2.4.1).

291. We have been recognised as good asset managers with robust processes for selecting investments and we therefore expect this to have delivered an efficient mix of historical asset interventions (see Section 2.4.3 and Appendix 2).

9. Need for adjustment: base allowance is sufficient

292. Ofwat asserts that our base expenditure allowance is sufficient to allow us to maintain and improve asset condition:

> Overall, we consider that Northumbrian Water's base expenditure allowance at final determination is sufficient for it to deliver the capital maintenance included in its cost adjustment claims. We expect the company to deliver the appropriate level of capital maintenance over the 2025-30 period to maintain and improve asset condition with its base expenditure allowance. The company's base expenditure allowance is 11% higher than at PR19, 4.8% (£179m) below its draft determination representations proposal, and only 1.8% (£64m) below its original business plan. The company's base cost challenge is no greater than the sector average base cost gap. [354]

293. We do not agree that our base expenditure allowance is sufficient to fund a sustainable level of capital maintenance in AMP8 or beyond (see Section 4.2.1). The evidence clearly demonstrates that is not the case. Not only is there evidence that historic allowances have been too low, but it is also clear that neither the present nor the future look like the past. This is not reflected in the cost assessment methodology applied at PR24 (see Section 4.2.3). Capital maintenance expenditure is not keeping pace with the growth in the asset base which is a sign that increases over time are not sufficient.

294. It is misleading to point to the increase in our PR24 base expenditure allowance comparative to PR19. As Ofwat noted in its draft determinations, the increase in PR24 base expenditure allowances can be attributed to several factors, including "higher input price pressures faced by companies in recent years" and expenditure to "serve a larger population".[355] Ofwat also provided additional funding for water mains renewals, meter replacements and meeting more stringent permit levels for phosphorus removal. At final determination, Ofwat noted that it had made further increases to base cost allowances compared to draft determinations, and said that the most material drivers of this increase are the energy cost adjustment (to deal with higher energy prices), business rates, network reinforcement to deal with growth in demand, investment in sludge treatment centres to deal with long-term growth, and water quality permit changes.[356] Other than the adjustment provided for mains renewals, the increases in base expenditure allowances compared to PR19 are not driven by considerations about asset health. In fact, as shown in Figure 20, capital maintenance budgets for the sector, on other assets outside of mains and meters, are actually 7% lower than recent investment levels meaning that companies will have to cut investment on these assets.

295. Furthermore, as noted in Section 5.5, a significant proportion of our base expenditure allowance is now effectively ring-fenced through base PCDs – unlike at PR19 where companies had greater flexibility to deploy their base expenditure to target high priority areas of need.

10. Cost efficiency for adjustment: cost benchmarking and third party assurance of costs

296. Ofwat concludes that whilst we have addressed some of the DD24 criticism we have not provided compelling evidence of the efficiency of our cost estimates.

[353] Aggregated efficiency of all price controls from FD24 Water FM3, SOC330; FD24 Wastewater N Plus FM3, SOC331; FD24 Bioresources FM3, SOC332; and FD24 Retail FM3, SOC333. Calculations are in NWL SOC Databook for Figure 6.
[354] FD24 NES CAC Feeder Model, SOC321.
[355] DD24 Expenditure, pg.16, SOC296.
[356] FD24 Expenditure, pg.18-19, SOC309.

Ofwat FD24 rationale and our response

> In our draft determinations we considered that the company had explained how it arrived at its cost proposal in detail, but did not provide sufficient detail on its cost benchmarking exercise and how that was used to determine its costs, and it did not provide evidence of third party assurance of its costs.
>
> In its draft determinations representations the company clarifies that it used benchmarking as a sense check of its own costing curves. But given that its costs were below the curve, no further investigation or challenge to costs was required. The company does not comment on the comparability of the schemes that have informed the cost benchmarking. It states that it would only investigate the validity of its costing curves if its costs proposal proved to be higher. [357]The company included a third party assurance statement in its draft determinations representations. This statement indicates that the company's Cost Assurance team carried out independent assurance of the costs calculated by contractors employed to develop its claim.
>
> Overall, the company has sought to address some of the concerns raised in our draft determination assessment. But given that its proposal is not fully scoped and the resulting uncertainty in its proposed costs, we do not consider the company has provided compelling evidence that its proposed cost adjustment is efficient. We therefore consider Northumbrian Water to have partially passed the cost efficiency assessment gate. [358]

297. We note that despite the points of challenge identified above, Ofwat did conclude that we had partially satisfied its cost efficiency criteria. In any event, to provide further confidence in the robustness and efficiency of our cost estimates we have undertaken further work following FD24 to provide increased certainty of scope (see Appendix 2, Section 4). In turn this allows us to improve accuracy and confidence in civils costs. We have combined this with additional third-party cost benchmarking to further demonstrate the efficiency of these costs.[359]

4.3.6 Risks and potential consequences from delaying the proposed investment to AMP9

4.3.6.1 Analysis of risk and consequences set out in our PR24 business plan

298. As part of the business case for asset health related investment in water and wastewater civils structures that we had submitted in with our PR24 business plan, we included analysis of the potential impact of delaying the proposed investment until AMP9 (i.e. 2030-2035).[360] We said that although we have used our PR19 capital maintenance allowances to target investment in maintaining high priority assets, the overall performance of our long-life assets is deteriorating, leading to higher risk as summarised below:

- Higher operational risk – increasing operational activity needed to monitor and manage assets on a day-to-day basis, including impact on work planning and scheduling.
- Higher risk to customer service – increased likelihood of key assets being out-of-service, short and/or longer-term, with an impact on our performance against our commitments.
- Higher risk to the environment – increased possibility of localised environmental damage and associated costs (including third parties).
- Higher risk of loss of trust in our ability to maintain our assets.

299. We also set out results from our quantitative analysis of the financial impacts of delaying the proposed investment, which showed that if we were to delay the works to AMP9:

[357] FD24 NES CAC Feeder Model, SOC321.
[358] FD24 NES CAC Feeder Model, SOC321.
[359] Aqua Consultants, NWL Statement of Case: PR24 Asset Health Cost Benchmarking (**Aqua Cost Benchmarking Report 2025**), 17 March 2025, SOC006.
[360] BP24 Appendix A3-21 Asset Health, Section 6.1.3, SOC045.

- the cost of delivering the proposed programme of works in civil structures (based on the scope proposed in our business plan) could **increase by £17.2m (71%) for water and £49.7m (48%) for wastewater**.[361]
- The monetised increase in service, environmental and safety risks arising from a catastrophic failure of assets could, be **between £36m and £90m for water and between £59m and £150m for wastewater**.[362] This includes the risks of severe pollution to our water bodies and the risks to the health and safety of our operational colleagues.

300. This analysis supported our conclusion that carrying out the required investment in AMP8 is the best-value decision for customers.

4.3.6.2 Additional work on risk and consequences undertaken after FDs

301. Following Ofwat's rejection of our investment case for civil structures and service reservoirs at final determinations, we worked with Aqua Consultants to develop additional evidence on the importance of timely intervention to manage long-term risk relating to asset condition deterioration over time, with a focus on concrete structures similar to the assets that are included in the scope of our updated investment case for asset health.

302. This additional work has generated the following key insights.[363]

- **Key Insight 1: Escalating repair costs.** As concrete structures age, the nature of faults or defects that could materialise become progressively more severe and the cost of repair increases significantly. As these structures deteriorate, eventually full structural replacement is the only viable option to restore functionality and ensure safety. The report stresses that additional expenditure in the early stages of deterioration cannot materially extend the asset life as there are no faults that can be addressed.
- **Key insight 2: Timing of intervention and cost consequences.** It is important to intervene at the correct time to avoid unnecessary costs. The deterioration of concrete structures over time can be split into three phases: the initiation phase during which low-cost repairs may be needed, the propagation phase during which timely intervention can extend asset life and reduce whole-life maintenance costs, and a final failure phase with high risk of catastrophic failure with consequent impacts on service, environment and safety. Well-timed interventions during the propagation phase will lead to longer-lived assets, lower costs over the longer term and reduced risk of catastrophic failure.
- **Key insight 3: Our deterioration modelling underpins the case for asset investment.** Our analysis shows that the rate of structural deterioration of its civil structures is increasing, which means that a proactive investment strategy is now required. Aqua's assessment is that our approach to deterioration modelling demonstrates a strong understanding of the factors driving asset deterioration, reinforcing confidence in our asset management strategy. Our interactive modelling tool enhances our predictive capability, which allows us to justify our long-term investment plans effectively.

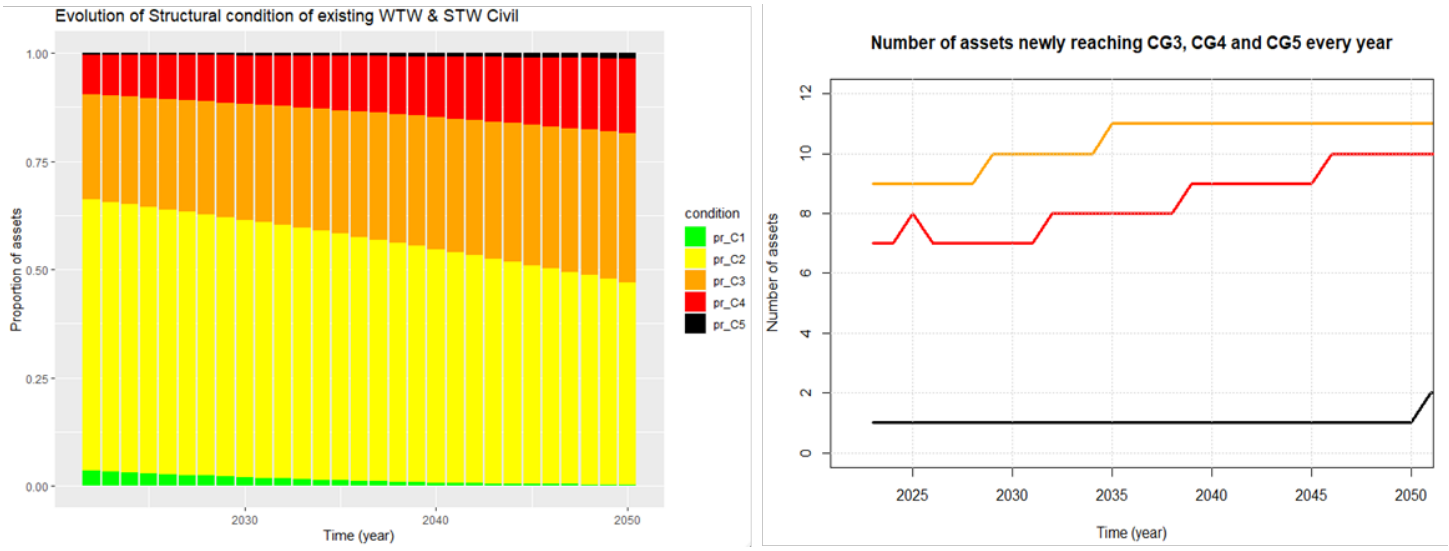
[361] BP24 Appendix A3-21 Asset Health, Figure 49, SOC045.
[362] BP24 Appendix A3-21 Asset Health, Figure 50, SOC045.
[363] Appendix 2: Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs, Section 7.2.

303. We have undertaken analysis to develop robust projections of future deterioration rates of our water and wastewater civil structures, taking account of the impact of external factors. Our analysis shows:[364]

- A rising number of assets entering Condition Grade 4 and 5 (severely deteriorated states).
- The rate of assets surpassing Condition Grade 3 is increasing, with 6-10% of emerging assets reaching CG5.
- 57% of the assets at Condition Grades 4/5 are at STWs and 43% are at WTWs.
- A key driver of this trend is the large asset base installed through the 1970 which are now entering the propagation phase.

304. Figure 25 below (left) shows the forecast of condition grades for civil structures at existing WTWs and STWs from 2022 to 2050. The chart on the right shows the number of assets that are forecast to reach each condition grade each year. Our modelling shows that the rate of deterioration of assets is expected to increase over time.

FIGURE 25 FORECAST CONDITION GRADES OF CIVIL STRUCTURES AT EXISTING WTW AND STWS



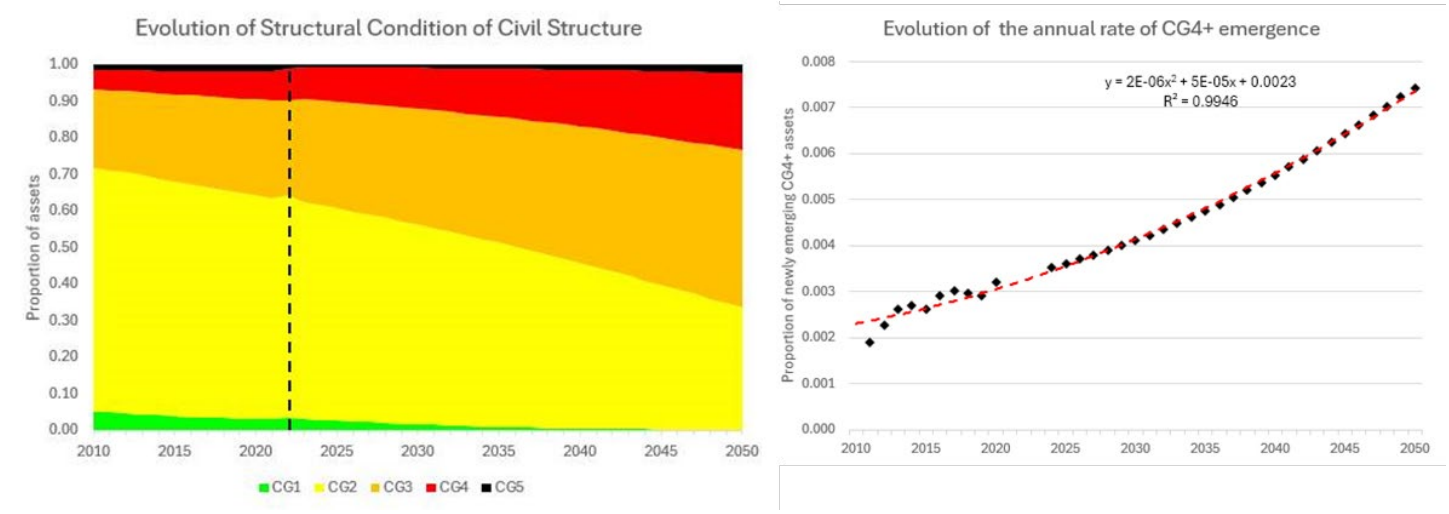
Source: Appendix 2: Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs, Figure 15

305. Following Ofwat's statement that it had seen evidence that supported its view that we should have undertaken this work earlier, we have expanded our analysis of asset condition grades to "back cast" their condition over the period covering 2010-2022. The results of our analysis are set out in Figure 26. The figure below (left) shows that a large proportion of our assets (approx. 70%) were in the top 2 condition grades (grades 1 and 2) at the start of that period, but that proportion is decreasing over time. The figure on the right shows that the rate at which assets emerged into condition grade 4 or 5 was relatively low, but that rate is increasing over time as our civil structures grow older. As set out in key insights 1 and 2 above, it is typically not possible to extend asset lives by intervening at an early stage of deterioration, before any defects have emerged. Doing so would be inefficient and inconsistent with sound

[364] Appendix 2: Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs, pg. 31

asset management practice. It is not clear to us what evidence Ofwat is referring to, but we do not believe that we could have efficiently avoided the need for our planned investments by intervening earlier as suggested by Ofwat.

FIGURE 26 BACKCAST AND FORECAST CONDITION GRADES OF CIVIL STRUCTURES AT EXISTING WTWS AND STWS



Source: Appendix 2: Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs, Figure 16

306. To help illustrate these points through practical examples, we have worked with Aqua to develop case studies that set out the need for investment and the potential consequences of a delay to that investment. One of these case study examples is summarised in Figure 27.

FIGURE 27 CASE STUDY: BIRTLEY STW – PRIMARY SETTLEMENT TANKS[365]

Birtley STW serves a population of around 30 thousand, treats around 10,043m³ per day and discharges to the River Team. The site has 4 Primary Settlement Tanks (**PST**s) which were built at the at the same time in the 1970s. Until now, these assets have required very little maintenance expenditure. However, in the most recent condition inspection (2023) it is evident that PSTs 1, 2 & 4 have entered the propagation phase, thereby scoring a grade 4b.

The photographs show cracks, leaks and exposed rebar. We are planning to intervene on these assets during AMP8. As per our calculations this repair needs to be achieved within 10 years of inspection to avoid the asset going beyond economic repair. If the asset enters the final failure phase and therefore surpasses economic repair the required replacement cost would significantly higher. In total, for all three PSTs the £786k cost of repair would increase by

[365] Appendix 2: Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs, Section 7.5.

£6.819M (to a total of £7.605M) if the assets enter the final failure phase, surpass economic repair and therefore required replacement.

If the leaking and rebar corrosion on the PSTs is not repaired, it will lead to significant operational and safety risks. Water ingress through cracks will accelerate the corrosion of the embedded reinforcement, causing rust expansion that leads to concrete spalling and delamination. This deterioration will weaken the structural integrity of the tank, reducing its ability to withstand hydrostatic pressure and external loads. If left unaddressed, widening cracks will lead to severe leakage, compromising the treatment process and contaminating surrounding areas. In the colder months, freeze-thaw cycles will exacerbate the damage. Over time, extensive reinforcement loss could result in localised buckling or even catastrophic failure, leading to operational downtime and costly emergency interventions.

Structural failure of a single PST resulting in loss of containment would clearly carry a risk of downstream pollution with a likely consequence of unsettled sewage passing forward to the Humus tanks. The proposed contingency response would consist of hiring temporary Lamella Clarifiers to take over the duty, whilst the PST was out of operation.

In addition, if the structure of the PST moves into final failure phase we would need to isolate the structure. All the assets were built at the same time and are showing similar ageing – as such there is a risk of multiple assets failing at the same time. From the available data, we can build out a high-level financial consequences case study on the impact of a single PST failing resulting in the loss of containment and cascade of unsettled sewage to the humus tanks. The financial consequence calculation considers the fines, equipment, resource and duration of activities required to rebuild the PST and restore service. This failure would amount to a financial consequence of £3.410M per tank.

4.3.7 Updated investment case for civil structures and service reservoirs

307. The additional work we have undertaken to provide further confidence in our investment case for civil structures and service reservoirs has enabled us to update the scope and costs to reflect the latest available information. Details of that additional work and the findings are set out in Appendix 2, and the impact on our forecast scope and costs is summarised in Appendix 2 Figure 1. As set out in Appendix 2 Section 4, Aqua Consultants have conducted a bottom-up review of our proposed scheme costs and have provided a formal assurance statement verifying the robustness of our cost estimates.

308. Following this additional work, we have updated our request for additional base cost allowances to fund the investment case for civil structures and service reservoirs, taking account of updated scheme costs and the funding that we consider to be already implicitly included in our base cost allowances. As set out in the figures below, we now request the CMA to provide an uplift of £179.54m in total, comprising £56.16m for water civil structures, £75.59m for wastewater civil structures and £47.79m for service reservoirs.

FIGURE 28 UPDATED REQUEST FOR ADDITIONAL ALLOWANCES FOR CIVIL STRUCTURES

	Water	Wastewater
Total cost of maintenance on civil structures forecast for AMP8 as set out in BP24 (capex plus ongoing maintenance for AMP8)	£25.9m	£107.2m
Additional investment proposed in our DDR	-	+£29.2m
Changes following additional post-FD work on scope and costs	+£38.38m	-£48.01m
Updated post-FD maintenance cost for civil structures for AMP8	£64.26m	£88.39m
Less estimated implicit allowance from base	-£8.1m	-£12.8m
Additional allowance requested from the CMA[366]	£56.16m	£75.59m

Source: Appendix 2: Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs, Figure 7.

[366] The requested amount is not adjusted for RPEs and frontier shift.

FIGURE 29 UPDATED REQUEST FOR ADDITIONAL ALLOWANCES FOR SERVICE RESERVOIRS

	Capex	Opex	Total
Forecast cost of service reservoir replacement for AMP8	£50.92m	£0.10m	
Estimated implicit allowance from base	£2.32m	-	
Deduction for maintenance savings	£0.92m		
Additional allowance requested from the CMA[367]	£47.69m	£0.10m	£47.79m

Source: Appendix 2: Overview and Key Evidence: Asset Health Investment Case for Civil Structures and Service Reservoirs. Figure 8.

4.3.8 Considerations for the CMA

309. We believe that the work proposed in our investment case for civil structures and service reservoirs needs to be delivered in AMP8. As set out in Section 4.3.6, delaying this investment into AMP9 could lead to higher costs and increased risk to service levels, safety and the environment. Indeed, since we submitted BP24 we have already undertaken the planned work on civil structures at two wastewater treatment works (Sedgeletch and Hexham) because we considered that levels of risk associated with those sites had reached unacceptable levels. We have removed these sites from the scope of investment case (see Appendix 2 para. 30).

310. In Section 4.2 we identified the need to manage our assets effectively and invest sufficiently, so that our assets are kept in good working order and can be replaced when they reach the end of their useful lives. Failure to invest and maintain these assets at the right time, particularly for service critical assets, could mean service failures for customers, negative impacts on the environment and higher costs over the long term.

311. Determining the 'right' level of capital maintenance to undertake at any time can be challenging and is subject to uncertainty. This requires a complex assessment of asset-related risk, consequences of asset failure and the resilience of the system (and our operations) to such failure. Our approach to asset risk management is to manage asset health by maintaining an appropriate balance in performance, risk, benefit and cost over the long term. The scope of our proposed investment case was determined as part of a comprehensive and structured review of asset-related risks to service, performance and safety across our asset base.[368] This assessment considered the criticality of the assets (i.e. seriousness of the consequences of failure and our ability to defer the maintenance activity to the next AMP. We discuss these risks and consequences in Section 4.3.6.

312. It is worth noting that in this context **Ofwat did not challenge or reject the need for undertaking the proposed programme of work**. Ofwat's rejection of our investment case was based on its assessment that we had not demonstrated that an adjustment to the base cost allowance is needed and that we had only partially passed its assessment on cost efficiency. We believe that Ofwat was wrong to reject our claim on that basis.

313. We cannot see how Ofwat can substantiate its conclusion that our "base expenditure allowance at final determination is sufficient for [Northumbrian Water] to deliver the capital maintenance included in its cost adjustment claims. We expect the company to deliver the appropriate level of capital maintenance over the 2025-30 period to maintain and improve asset condition with its base expenditure allowance."[369]

[367] The requested amount is not adjusted for RPEs and frontier shift.
[368] BP24 Appendix A3-21 Asset Health, Section 4, SOC045.
[369] FD24 NES CAC Feeder Model, SOC321.

314. The deficiencies in Ofwat's approach to base cost assessment means that it is not simply possible to substantiate Ofwat's assertion that our base cost allowances (without adjustments) will be sufficient to deliver the capital maintenance activities needed to ensure long-term resilience. Indeed, Ofwat has explicitly recognised this by making sector-wide cost adjustments to fund increased levels of mains and meter replacement activity during AMP8. It is not clear why the problem of under-funding would be limited to these activities.

315. Ofwat suggests in its Asset Health Roadmap that it may be willing to allow additional funding, over and above base cost allowances and the sector-wide adjustments already made at FD24, for asset risk management during AMP8 once further information on asset health has been collected from water companies. However, as set out in Section 4.2.3.4, there is considerable uncertainty about whether any funding will be provided, and there are a number of serious problems with the arrangements as set out.[370] Moreover, there are considerable difficulties and practical challenges that Ofwat and the sector are likely to face in developing a common sector-wide understanding of asset health, the appropriate regulatory framework and funding levels. This means that it would not be prudent to set much store on the possibility of these funding challenges being resolved within AMP8.

316. Within this context, it is not appropriate for Ofwat to reject our targeted case at FD by setting an unreasonable expectation that, in effect, requires us to spend whatever it takes to maintain our assets irrespective of the level of allowances provided. As set out in Section 4.2.1, **over the last 25 years we have spent more on capital maintenance than we have recovered from customers.**

317. The consequence of this rejection is that we will be materially underfunded for the delivery of these essential capital maintenance activities during AMP8. This problem is exacerbated by Ofwat's use of base PCDs to effectively ring-fence a significant proportion of our implicit base capex allowances for the delivery of those PCDs, further squeezing the amount of funding available for the maintenance of other assets. This is discussed further in Section 5.5.

318. We recognise that there are limitations to what can be achieved in the context of a redetermination, so have not sought to use this process to address the broader problems relating to the regulatory framework. However, that does set the context for why we consider it important that the CMA considers our investment case as part of its redetermination.

319. Our updated investment case puts forward a targeted and risk-based set of low regret asset interventions that can and must be undertaken in AMP8 so that we can effectively manage risk on our systems. We have taken account of the fact that base cost allowances will implicitly include some funding for these activities and have made an adjustment to our request to reflect this.

320. In response to Ofwat's concerns about customer protection, we have worked with Aqua Consultants to review and refine the scope of works required in AMP8, leading to improvements in the scope of works and associated costs being put forward in our updated investment case to the CMA. Furthermore, we have proposed PCDs that are aligned with Ofwat's own PCD methodology and will protect customers by returning the funding associated with any funded intervention that is not delivered by 2030.[371] To provide further assurance, we are prepared to offer the same commitment to the CMA that we had offered in our business plan submission to Ofwat. We will spend all our

[370] FD24 Expenditure, pg.91-92, SOC309.
[371] Appendix 3 Proposed PCD – Asset Health Civil Structures; Appendix 4 Proposed PCD – Asset Health Service Reservoirs.

implicit capital maintenance allowance during AMP8 before accessing any additional funding that might be provided by the CMA for our civil structures and service reservoirs investment programme.[372]

321. By making an adjustment of £179.54m to our allowances to fund these interventions, the CMA could help us bridge the funding gap until the regulatory framework issues can be addressed on a more enduring basis. We would therefore welcome the CMA's re-assessment of our investment case, and request that it provides us with the requested funding so that we are able to deliver these critical interventions in AMP8.

4.4 OUR CASE FOR APPROPRIATE FUNDING AND EXPECTATIONS FOR WATER MAINS RENEWAL ACTIVITIES

322. In the PR24 methodology, Ofwat acknowledged that mains renewal rates were lower than it had expected and invited companies to make CACs for additional investment in AMP8:

> So far this period (2020-2022) they have only delivered 0.1% per year, which we are concerned is un-sustainably low and not enough to keep up with deterioration. Companies can submit cost adjustment claims to go beyond historical water main renewal rates where they can provide compelling evidence that an increase is required to maintain asset health.[373]

323. In response to this and building on our own concerns about the unsustainability of current mains renewal rates, we[374] and other companies submitted funding requests for additional renewals activity beyond that funded by the base cost models. In FD24 Ofwat included an industry wide cost adjustment to allow increased renewal rates based on an assumption about what level of renewals is funded by the modelled base allowance. [375] We welcome Ofwat's recognition of the need to undertake more mains renewal activity and the need for a base cost adjustment, but we disagree with how that adjustment has been calibrated (see Section 4.4.2).

324. We believe that Ofwat's approach to estimating the implicitly funded renewal rate is defective in both its design and in terms of the data used. This means that the level of implicitly funded mains renewal activity is overestimated. As a consequence, the associated expenditure requirements of an efficient company are significantly underestimated. This is particularly problematic in the context of AMP8 where the use of PCDs means that material parts of the base cost allowance are effectively ring-fenced to deliver specified levels of activity.

325. In this section, we:

- outline Ofwat's FD24 decision on funding water mains renewal in AMP8 (see Section 4.4.1);
- consider Ofwat's approach to identifying the implicit allowance for mains renewal (see Section 4.4.2);
- set out alternative approaches to the estimation of the implicit allowance (see Section 4.4.3); and
- detail the implications of the different approaches for the calculation of the base cost adjustment (see Section 4.4.4).

[372] BP24 Appendix A3-21 Asset Health, pg.6, SOC045
[373] FM24, pg.75 - Section 6.2.1, SOC484.
[374] See BP24 Appendix A3-21 Asset Health, Chapter 4, SOC045, for NWL's investment case for additional mains renewal.
[375] FD24 Expenditure, Section 2.2.1, SOC309.

4.4.1 Ofwat's FD24 decision on funding water mains renewal in AMP8

326. In FD24 Ofwat decided that base cost allowances implicitly fund a mains replacement rate of 0.3% per annum.[376] Ofwat also determined that we need to deliver an additional 0.13% of mains replacement per annum – a total of 0.43%.[377] To support the additional activity (over and above that funded by base) Ofwat made sector wide adjustments to base cost allowances. For us, this amounted to a £51.3m cost adjustment.[378] We welcome Ofwat's recognition that more needs to be done on mains renewals than has been done in recent years, and that its modelled base cost allowances are not sufficient to fund a sustainable rate of renewals.

327. Alongside this sector-wide cost adjustment, Ofwat set PCDs for all companies to deliver specified volumes of mains renewals over AMP8. For us, Ofwat's mains renewals PCD is made up of three elements:

- delivery of 0.3% mains renewals a year that Ofwat considers is implicitly funded by its base cost allowances (**Base Funded Renewals**);
- delivery of 0.13% renewals a year of mains in condition grades 4 and 5 that is funded through the sector wide cost adjustment (**Adjustment Funded Renewals**); and
- delivery of 0.004% mains renewals a year that is funded through leakage reduction enhancement allowances (**Enhancement Leakage Renewals**).[379]

328. If the renewal rates specified in the PCD are not delivered, we will need to make non-delivery payments or late delivery payments to customers. We discuss the broader impacts of PCDs on our ability to optimise the use of our base allowance in Section 5.5.

4.4.2 Ofwat's approach to the calculation of the implicit allowance for mains renewal

4.4.2.1 The role of the implicit allowance in Ofwat's cost assessment framework

329. Under Ofwat's totex regime introduced at PR14 (Appendix 1 Figure 10 Row 5), **base cost allowances are not hypothecated for particular purposes or activities**. For the past two AMPs companies have been free to decide how and where to direct their base expenditure, subject to delivering the outcomes and PCs set by Ofwat. In practice, this means that companies balance competing demands on those allowances and make expenditure choices based on their asset management priorities (see Section 2.4.3).

330. Ofwat has not set targets or obligations for mains renewal rates in recent price control reviews (PR09 onwards). This means that the observed levels of mains renewals activity over the historical period reflects the asset management choices at the time, which in turn were influenced by their unique circumstances and asset management priorities. It is not necessarily the case that similar levels of activity can be delivered in the future through base allowances without proper consideration of what other pressures might apply to the cost base.

331. That said, we understand why it might be necessary to estimate the implicit allowance for particular activities in the context of Ofwat's regulatory framework for the setting of base cost allowances and associated PCDs. Making an assumption about 'what base buys' allows Ofwat to make adjustments to base cost allowances only for additional

[376] FD24 Expenditure, pg.39, SOC309.
[377] FD24 Expenditure, pg.40 – Table 4, SOC309.
[378] FD24 Expenditure, pg.40 – Table 4, SOC309.
[379] Ofwat, PR24 final determinations: CA105 Base PCDs 2 (**FD24 Base PCDs**), January 2025, SOC323.

activity above that level. Ofwat utilises this approach to give itself confidence that companies are not funded twice for the same activity (i.e. both through base cost allowances and cost adjustments). It is important, however, that the approach for estimating the implicit allowance is robust.

4.4.2.2 Ofwat's base cost models

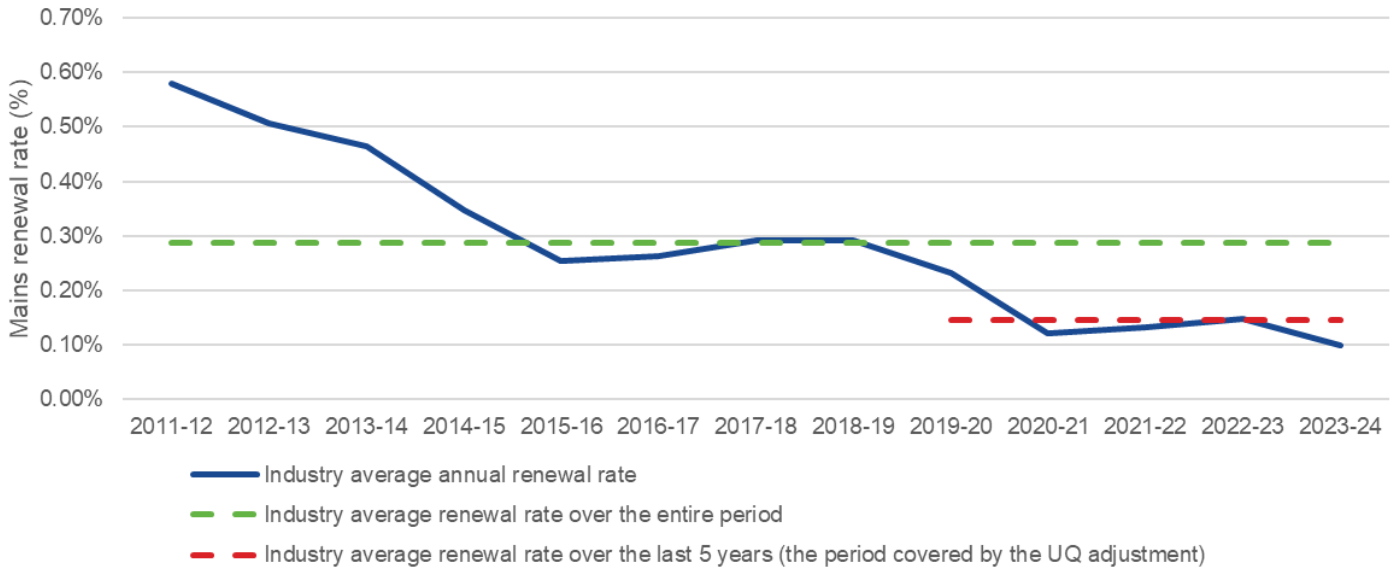
332. Under Ofwat's approach to setting the base allowance, modelled base costs for each company are determined using econometric models with input data relating to historical costs and cost drivers over the period from 2011/12 to 2023/24. An upper quartile (**UQ**) efficiency adjustment is then applied to all companies' "pre-UQ" modelled base costs to derive "post-UQ" modelled base costs. This UQ adjustment is based on efficiency scores derived from historical expenditure over the most recent five-year period (i.e. 2019/20 to 2023/24) rather than over the entire period covered by the modelling.[380]

333. Ofwat's modelling approach means that, while expenditure (and therefore activity levels) by any company in any year of the entire modelling period (2011/12 to 2023/24) could affect pre-UQ modelled costs (through the model coefficients and the constant term), expenditure by some companies (i.e. companies at or adjacent to the UQ) and in certain years (i.e. last five years) have a significantly greater impact on post-UQ modelled costs.

334. This matters for two reasons:

- mains renewal activity across the industry has been declining, with the industry average annual renewal rate in the most recent five-year period being 0.15% compared to 0.43% in the first five years of the modelling period (see Figure 30); and
- there are significant variations between companies in their average mains renewal rates over the most recent five-year period (see Figure 31).

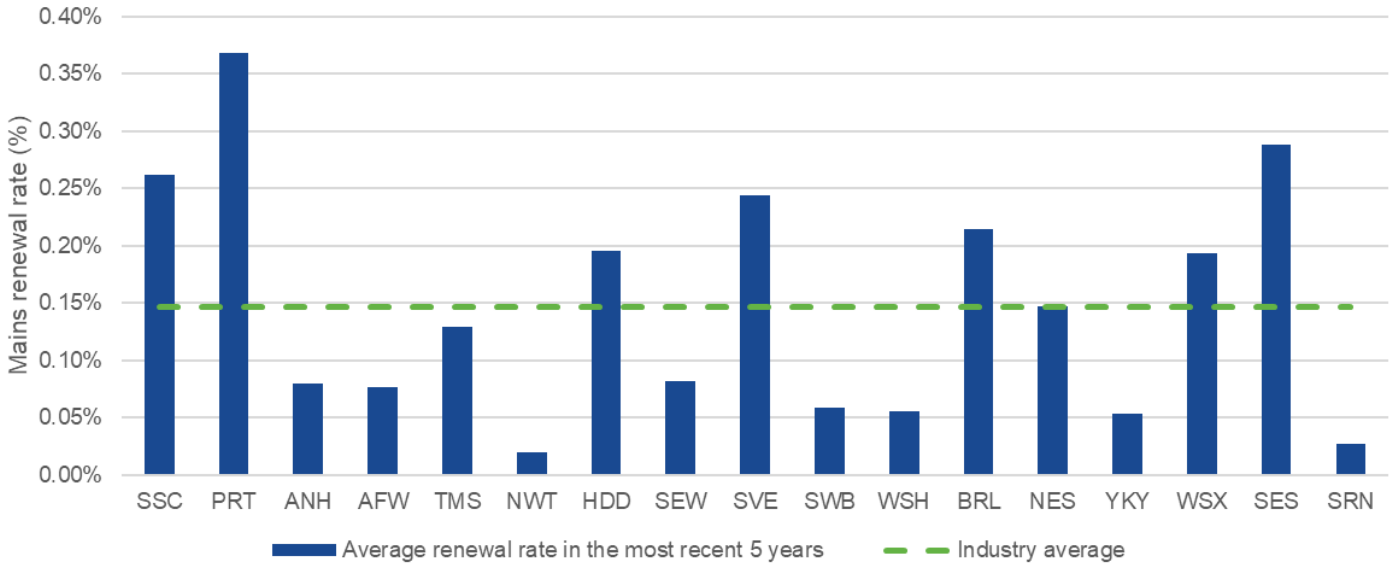
FIGURE 30: INDUSTRY AVERAGE MAINS RENEWAL RATES



Source: NWL analysis of Ofwat's FD mains renewal cost adjustment model.[381] NWL SOC Databook.

[380] FD24 Expenditure, pg.26-27, SOC309.
[381] FD24 Renewal Rates, sheet 'Renewal rates', SOC315.

FIGURE 31 AVERAGE MAINS RENEWAL RATES BY COMPANY IN THE MOST RECENT 5-YEAR PERIOD



Companies are ordered from left to right by their modelled efficiency scores under Ofwat's FD base cost models for wholesale water. Thames Water is the UQ company in Ofwat's FD models for Wholesale Water and sets the level of the "catch up" efficiency adjustment.

Source: NWL analysis of Ofwat's FD mains renewal cost adjustment model.[382] NWL SOC Databook.

335. Ofwat's estimated the level of mains renewals that is implicitly funded by base cost allowance as the average renewal rate across the industry and across the modelling period (2011/12 to 2022/23, excluding 2023/24 – see section 4.4.2.3 for a discussion on this exclusion). Using this approach, Ofwat estimated that the implicitly funded mains renewal rate is 0.3% a year.

336. However, this approach ignores the fact that, as demonstrated by our analysis (see Appendix 1 Section 6), under Ofwat's base cost modelling approach, expenditure and activity levels in the last five years, and expenditure and activity levels by companies at or near the UQ, are significantly more influential in determining post-UQ modelled costs than expenditure and activity in other years and by other companies.

4.4.2.3 The exclusion of mains renewal data for 2023/24

337. In addition to this inherent design flaw, Ofwat has compounded the problem by deliberately disregarding mains renewal data for the most recent year (2023/24). Ofwat has taken this approach despite expenditure data for 2023/24 being included as inputs to its FD24 cost models.[383] Ofwat notes its rationale for this exclusion in footnote:

> We chose not to include 2023-24 outturn data based on a further deterioration in renewal rates, with over half of the sector delivering at a rate that is at or below 0.1%. We do not consider this reflective of what base allowances deliver and have therefore excluded this year from our calculation. [384]

[382] FD24 Renewal Rates, sheet 'Renewal rates', SOC315.
[383] Ofwat, PR24 Final determinations: Expenditure allowances - base cost modelling decision appendix (**FD24 Base Cost Appendix**), December 2024, Table 3, SOC620.
[384] FD24 Expenditure, pg.34 – footnote 24, SOC309.

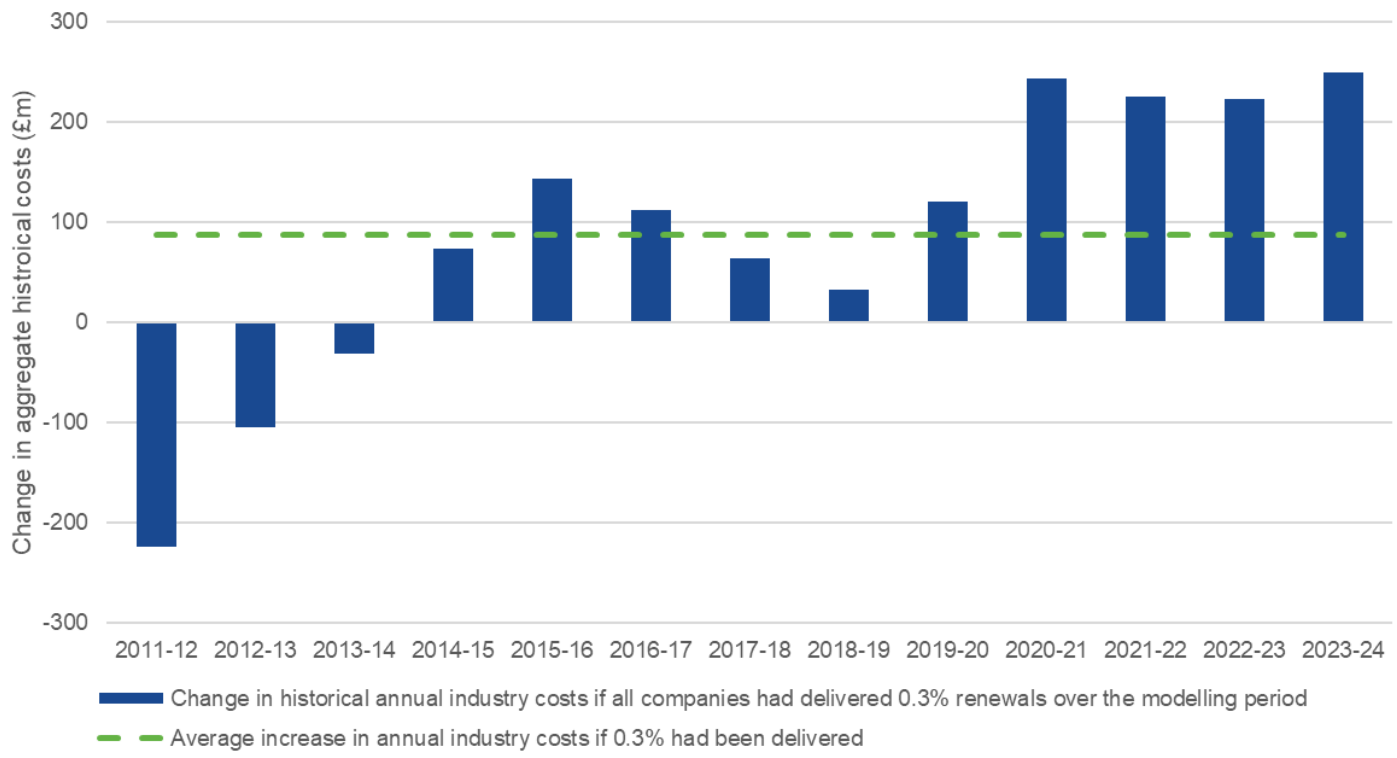
338. We do not think the exclusion of 2023/24 data or Ofwat's rationale for it is sound. Nor is it supported by evidence that objectively justifies such an approach. In the context of a method to estimate implicit allowances that is reliant on looking at historical renewal rates, a year's data should not be dismissed as not being "reflective of what base allowances deliver" simply because Ofwat considers those rates to be too low.

339. Furthermore, in a context where expenditure levels (and therefore renewal rates) in the last 5 years (including 2023/24) have the greatest impact on modelled post-UQ costs (see Appendix 1 Section 6), excluding the average renewal rate in the most recent year (2023/24) from the implicit allowance calculation at the same time as using expenditure incurred in that year to set modelled base costs is unjustifiable.

4.4.2.4 Accounting for differences between companies

340. Furthermore, Ofwat's estimation of a simple average of renewal rates across all companies does not take proper account of the differences between companies and the factors that may have influenced their choices about how to use base allowances in previous periods (see para. 4.4.2.1). To illustrate this point, we have considered the impact on historical costs if every company had delivered the level of activity that Ofwat concludes is implicitly funded by its models. In Figure 51 we demonstrate the change in historical costs if all companies had delivered a mains replacement rate of 0.3% per year over the entire modelling period, without reducing expenditure on other capital maintenance activities or on day-to-day operations.

FIGURE 32 - ESTIMATED IMPACT ON INDUSTRY LEVEL HISTORICAL EXPENDITURE IF A RENEWAL RATE OF 0.3% HAD BEEN DELIVERED



Source: NWL analysis of historical modelled costs if all companies had delivered 0.3% renewals rate. NWL SOC Databook.

341. Our analysis shows that while the industry actually spent more in the first three years of the period (i.e. 2011-12 to 2013-14) than in the hypothetical alternative scenario with a uniform renewal rate of 0.3% a year, in every other year the industry would need to have spent more than it actually did to deliver that renewal rate. Across the entire modelling period, we estimate additional annual expenditure of £87m a year would have been needed to deliver a mains renewal rate of 0.3% without cuts in expenditure elsewhere. This casts further doubt on Ofwat's assumption that its models implicitly fund a renewal rate of 0.3%.

4.4.2.5 Comparison to the PR19 estimation of implicit allowances for the growth cost adjustment

342. We note that Ofwat's approach to estimating the implicitly funded mains renewal rate at PR24 shares some similarities with the approach that it[385] (and the CMA[386]) took when estimating implicit allowances as part of the sector-wide symmetrical growth cost adjustment at PR19. However, there are important differences in the historical time periods over which Ofwat's base cost models were estimated at PR19 and PR24 which means that the PR19 growth cost adjustment approach cannot be directly applied to mains renewals at PR24.

343. At PR19, Ofwat's definition of base expenditure included the cost of reinforcing the water and wastewater networks to accommodate growth in the number of connected properties. The PR19 growth cost adjustment provided additional funding for companies that were forecast to have higher growth rates than the growth rate implicitly funded through base cost models and deducted allowances for companies that were forecast to have a lower growth rate than the implicitly funded rate.

344. The implicitly funded rate was estimated as the average growth rate across the industry over the entire period covered by Ofwat's base cost models (i.e. the eight years from 2011-12 to 2018-19). At the same time, the catch-up efficiency challenge was based on expenditure in the last five of those eight years (2014-15 to 2018-19).[387] This means that there was a large overlap between the periods used to estimate the implicitly funded growth rate and that used to determine the size of the catch-up efficiency challenge. That made the issue highlighted in Section 4.4.2.2 less of a concern. In any event, Ofwat's published PR19 growth cost adjustment model shows that the industry average historical growth rate in the last five years (0.74%) was very similar to the growth rate over the entire modelling period (0.70%) used by Ofwat in its implicit allowance calculations.[388] This means that the impact of using the average over the entire modelling period, rather than the average over the last five years, was relatively small.

345. In contrast, Ofwat's estimate of the implicitly funded mains renewal rate at PR24 is based on data over a much longer historical period (i.e. 12 years from 2011-12 to 2022-23), while its catch-up efficiency challenge is based on the most recent five years (2019-20 to 2023-24). This means that there is only four years of overlap between the two periods. Furthermore, as highlighted above, there is a large difference between the average renewal rates in the two periods (0.3% vs 0.15%), making the right choice of period an important determinant of the outcome.

[385] Ofwat, PR19 Final Determinations: Securing cost efficiency technical appendix (**FD19 Cost Efficiency**), December 2019, pg.22, SOC389.
[386] CMA FD19 Decision, paragraph 4.878. SOC334.
[387] See Ofwat, PR19 final determinations: Wholesale water catch-up efficiency challenge model 2 (**FD19 WW Catch-up Efficiency Model**), December 2019, SOC365; Ofwat, PR19 final determinations: Wholesale wastewater catch-up efficiency challenge model 2 (**FD19 WWW Catch-up Efficiency Model**), December 2019, SOC366.
[388] Ofwat, PR19 Final determinations: Base adjustments feeder model (**FD19 Base Adjustments Model**), December 2019, SOC552.

346. For these reasons, we do not consider that the approach taken in the PR19 growth cost adjustment to estimate the implicitly funded rate is suitable to be applied without modification to the PR24 mains renewal cost adjustment.

4.4.2.6 Other examples where this approach impacts on FD24 decisions

347. While we have not raised them as priority issues for the CMA to address in its redetermination, we believe that there are other aspects of Ofwat's PR24 final determinations that suffer from the same issue that we have raised in this section for mains renewals. Specifically, a) Ofwat's approach to estimating the implicit allowance for its sector-wide meter replacement cost adjustment; and b) its approach to estimating the sector-wide energy price adjustment both use historical data that cover the entire modelling period, whereas we believe the better approach would be to use data over the most recent five years to align with the period used for the catch-up adjustment.

348. We had raised this issue in our DDR and had asked Ofwat to use a consistent approach based on the last five years of data for all three cost adjustment calculations.[389] However, Ofwat chose not to do this.

349. We estimate that if Ofwat had used data relating to the last five years rather than the entire modelling period, it would have the following impacts on the size of the cost adjustments for Northumbrian Water (in addition to the impact on the mains renewal cost adjustment):

- a relatively small reduction in the size of the cost adjustment for meter replacement from £28.7m to £27.8m;[390] and
- a more significant reduction in the size of the energy cost adjustment from £83.8m to £42.4m.[391]

4.4.3 Alternative approaches to estimating the implicitly funded mains renewal rate

350. In order to consider whether there are better approaches to the calculation of the implicit allowance, and at the very least to provide a further cross-check to Ofwat's approach, we have analysed the implicitly funded mains renewal rate using two alternative approaches. The analysis and evidence that we present in Appendix 1 Section 6.2 with respect to both these approaches supports an implicitly funded renewal rate of no higher than 0.15%.

4.4.3.1 Approach 1: historical mains renewal rates over the last five years

351. Approach 1 uses historical mains renewal rates like Ofwat, but focuses on renewal rates delivered in the last five years (i.e. the same period as the UQ adjustment) (see Appendix 1 Section 6.2.1 Figure 16). We found that the renewal rate in the most recent five-year period across the industry is 0.15%.[392] This is significantly below the average renewal rate over the entire historical period across all companies. We also considered whether there are differences in historical renewal rates between companies depending on their relative positions in the distribution by modelled efficiency scores and found that the renewal rate in the most recent five-year period of the UQ company and the two companies immediately adjacent to it is even lower at 0.07%.

[389] NWL DDR, para. 363, SOC191.
[390] NWL analysis based on Ofwat's base cost adjustment feeder model for meter replacements: Ofwat, PR24 final determinations: CA99 Meter renewals cost adjustment model (**FD24 Meter Renewals CA Model**), December 2024, worksheet "Household Delivery", SOC493.
[391] NWL analysis based on Ofwat's energy price cost adjustment model: Ofwat, PR24 Final determinations: CA101 Energy cost adjustment model (**FD24 Energy Adjustment Model**), December 2024, SOC513.
[392] Appendix 1 Section 6.2.1 Figure 16.

4.4.3.2 Approach 2: Excluding historical expenditure from the models

352. Approach 2 involves estimating the difference in modelled AMP8 base costs (post-UQ) estimated by models that include and exclude estimates of historical costs attributable to mains renewal (calculated using actual reported renewal rates and Ofwat's PR24 unit costs) (see Appendix 1, Section 6.2.2, Figure 17). This approach was suggested by Ofwat as one of the methods that could be used to estimate implicit allowances in its PR24 Final Methodology decision.[393] This approach results in an estimated implicitly funded renewal rate of 0.09% for NWL.[394]

4.4.4 Implications for the size of the base cost adjustment

353. Based on the evidence presented above, we do not consider that 0.3% is a robust estimate of the implicitly funded mains renewal rate. Instead, the evidence demonstrates that it is no more than 0.15% a year.

354. Ofwat's calculation of our additional base cost adjustment for mains renewals is based on the cost of delivering target mains renewal rate of 0.43%, discounted by the implicitly funded base allowance for 0.3%. Ofwat has consequently only made an upward adjustment to cover 0.13% of the mains renewal activity.

355. If it is accepted by the CMA that the implicit allowance funds no more than 0.15% a year (which we consider is a reasonable and evidence-based assumption), the additional 0.28% of mains renewal activity that is required to meet the PCD-mandated level of mains renewal of 0.43% is not adequately funded by the combination of the base cost allowance and sector wide cost adjustment.

356. FD24, therefore, results in a base funding shortfall for us equivalent to 0.15% a year (i.e. 0.28% minus the 0.13% covered by the FD24 base cost adjustment). Using the unit cost per metre of mains renewed used by Ofwat in FD24 our base cost adjustment should be increased by £62m over AMP8, meaning a total base cost adjustment of £113.3m over AMP8.

4.4.5 Considerations for CMA

357. We welcome Ofwat's recognition that its base cost allowances are insufficient to fund a long-term sustainable rate of mains renewals and that there is a need for the level of renewal activity to increase in AMP8 compared to recent years. As we have set out previously (see Section 4.2) we consider this is consistent with the need for greater investment in capital maintenance activity across all our asset classes. We will aim to deliver an overall renewal rate of 0.43% (across all types of mains) in AMP8 in line with our PCD obligations.

358. However, that step up in activity must be adequately funded, and for the reasons we have demonstrated above, Ofwat's FD24 base cost adjustment is insufficient to fund this level of mains renewal activity. If this is not addressed we will have to make difficult choices that will, inevitably, not be in the best interests of our customers or the long term resilience of our assets – whether by squeezing our base allowance to fund mains renewal over other, competing priorities, or by not meeting our PCD targets, incurring penalties and failing to achieve our overarching aim of improving asset health.

359. While there may not be a single good way to estimate the implicitly funded renewal rate, we have set out multiple estimates that are derived using approaches that are conceptually superior to Ofwat's approach. These estimates

[393] FM24 Appendix 9 Expenditure, pg.121-122, SOC292.
[394] Appendix 1, Section 6.2.2, Figure 17

point to the implicitly funded renewal rate being no more than 0.15% at the industry level, with one of our approaches suggesting that the rate for Northumbrian Water could be even lower at 0.09%.

360. We request that the CMA redetermines the size of the base cost adjustment for mains renewals assuming an implicitly funded renewal rate of 0.15%. Using Ofwat's unit rate costs, this would provide us with an additional allowance of £62m, which is equivalent to the cost of delivering the additional mains renewal rate of 0.15% a year that is not funded from either the implicit base allowance or Ofwat's FD24 base cost adjustment.

4.5 POWER RESILIENCE AND CLIMATE CHANGE

361. In this section we provide an overview of our business plan enhancement case, and how this was assessed by Ofwat in FD24. We indicate how we would like the CMA to consider this issue as part of its redetermination.

4.5.1 Our BP24 proposals

362. In BP24, we set out our enhancement case NES32[395] for investment to adapt for increasing climate change risks at water and wastewater treatment works and pumping stations. It sets out our assessment of the need for investment, how we explored a broad range of options and why we identified the solutions we did, how we estimated our costs and tested that these were efficient, and how our proposals protected customers. It was supplemented in response to DD24 (**NES32A**)[396] with additional evidence on the need, options and efficiency of our costs.

363. In our enhancement case we set out the need for investment to protect 27 high criticality wastewater treatment works and 57 high criticality pumping stations from power outage associated with severe storm or wind events or repeat failures from the power distribution network operator (a £59.0m investment). We are protecting against a third-party power failure both in normal operating conditions and extreme weather.[397]

364. To assist the CMA with its redetermination, we have prepared Appendix 5 (Power Resilience and Climate Change) which describes and references the information in NES32 and NES32A to present a comprehensive view of our enhancement case. It presents additional evidence we have developed since FD24, such as: an extension of the period over which we analyse power and pollution data; an examination of the cost increases we are already experiencing because of climate-driven events which illustrate the real effects which extreme weather is already having across our operating area; and a case study on the impact of Storm Eowyn which occurred on 25 January 2025. We also introduce external work we have commissioned to provide further comfort on the robustness of our enhancement case against the relevant assessment criteria, including:

- an independent review of our Climate Resilience analysis by both Aqua[398] and Newcastle University.[399] This further review by engineering and academic specialists helps to draw out key features of the work conducted and give us confidence that it is robust;

[395] BP24 Appendix A3-18 Power Resilience NES32, SOC042.
[396] NES32A - NWL Response to Ofwat DD24, Supplementary Information for Power and Flooding Resilience (**NWL DDR Power Resilience NES32A**), August 2024, SOC203.
[397] BP24 Appendix A3-18 Power Resilience NES32, Table 1, SOC042.
[398] Aqua Consulting, RE: Climate Resilience Assessment Review (**Aqua Climate Change Review**), 07 March 2025, pg.1, SOC013.
[399] Newcastle University, Review of Mott McDonald's Climate Resilience Assessment of Northumbrian Water (**NU Climate Change Review**), 2025, SOC012.

- an independent review of our options appraisal process, and the options apprised, by Aqua.[400] This work specifically looks at the breadth of options considered in response to technical challenge from Ofwat around the use of mobile generators and provides technical assurance around the work we have delivered; and
- an independent review of our deliverability appraisal process by Aqua.[401] This analysis gives us reassurance about our ability to deliver the planned interventions.

4.5.2 Ofwat's PR24 assessment

365. At DD24 Ofwat rejected the enhancement proposals for flooding and power resilience expenditure made by eight companies (worth £188m in total) on the basis that most had not been able to adequately justify the need "particularly in relation to increasing climatic risks".[402] However, Ofwat did introduce a sector-wide adjustment – the 'climate change resilience uplift'. Ofwat said that:

> However, we acknowledge that the impacts of climate change are real, long standing and sector wide, and the lack of robust justification from companies does not remove the risk. We consider that even through companies generally fail to link a step change in climate change risk to measurable impacts on their assets and customer service levels, it is likely that these impacts are happening, for example given the recent frequency of storms and hot weather events. To address these impacts, enhancement funding may be necessary on top of the activity expected to be delivered through base allowances. This is seen as a precautionary measure given the risks of not intervening in a timely manner.[403]

366. The stated purpose of the uplift was to allow companies "to prioritise their biggest climate risks".[404] Ofwat expected companies to set out the schemes that they will deliver for the additional funding in their DD24 representations, including why they have been prioritised and clear details of the deliverables, in order for the funding to be retained at FD24. The value of the uplift was calculated based on 0.7% of modelled base allowances in each of water and wastewater – an uplift of over £300m across the industry. For us this amounted to an uplift of £18.3m. Ofwat explained that this 0.7% was based on the median of efficient company requests in these areas, after option and cost efficiency challenges.

367. In our DDR we disagreed with the principle of taking a sector-wide approach because it did not take account of the fact that companies have different risks from climate change and require different investments to tackle those risks.[405] We suggested that Ofwat should consider the information set out within company plans and set the appropriate level of funding on a company by company basis, having taken due consideration of the specific climate risks each company is facing.[406]

[400] Aqua Optioneering Report 2025, SOC005.
[401] Aqua Consultants, NWL PR24, Deliverability Review, Power Resilience Investment (**Aqua Power Resilience Deliverability 2025**), 12 March 2025, SOC007.
[402] DD24 Expenditure, pg.115, SOC296.
[403] DD24 Expenditure, pg.115, SOC296.
[404] DD24 Expenditure, pg.115, SOC296.
[405] NWL DDR, Section 6, SOC191.
[406] Similar representations were made by United Utilities and Wessex Water. Other companies made representations for a larger allowance. See FD24 Expenditure, pg.228-229, SOC309.

368. In FD24 Ofwat used a deep dive to assess any proposals that were more than 10% above the proposed climate change resilience uplift at DD24.[407] This meant that Ofwat did not assess our water proposals, but did assess our flooding and power enhancement case for climate change resilience in wastewater. On flooding, Ofwat said that:

> Northumbrian Water partially met the deep dive criteria for flooding resilience, based on addressing all high and medium flood risk sites, however the company does not provide sufficient evidence to justify that additional funding is required to address low risk sites.[408]

369. We are willing to accept the exclusion of low-risk flooding sites in the 2025-30 period, though these are likely to increase in risk over time, so we have not sought to challenge that conclusion as part of this redetermination.

370. On power resilience, Ofwat made an additional allowance for six of the 77 sites we had identified in our enhancement case as being in need of investment. In FD24, it said:

> Northumbrian Water's representation on power resilience did not provide sufficient and convincing evidence that it would be more impacted by storms than its regional neighbours. The representation also focuses on the provision of fixed generators whereas other companies are considering a wider range of solutions including lower cost mobile generation. We have reviewed Northumbrian Water's historic pollution records and identify six sites within its power resilience proposals that have a history of repeated pollution incidents caused by power outage. We therefore make additional allowance to address power resilience at these sites. We will hold the company to account for this additional allowance with a price control deliverable.[409]

371. In its enhancement model, Ofwat describes its deep dive assessment in more detail. This explains that:

> In its representation the company provides additional evidence, however the investment partially meets the need for enhancement criteria…. The new evidence the company submits via representation and subsequent query (OFW-REP-NES-074) is not sufficient and convincing to prove the company faces significantly higher risks than others. It shows of the 77 wastewater sites included in the NES proposal, 6 had more than 1 power outage related pollution incident over the 3-year period. The company has not amended its proposals to reflect this new Northern Power Grid (NPG) information or accounted for NPG future investment plans. The company does evidence a likely increase in frequency of high wind and rainfall events because of climate change, but other areas seem to be similarly impacted. It is unclear why Northumbrian Water would be significantly more impacted by storms than its regional neighbours (e.g. United Utilities and Yorkshire Water) and therefore why so much additional enhancement investment is needed over and above the allowed climate change uplift the other companies accepted. Therefore, we

[407] Ofwat, PR24 final determinations: Wastewater – Resilience; enhancement expenditure model (**FD24 Wastewater Resilience EE**), December 2024, sheet CC_NES_Power, SOC312.
[408] FD24 Expenditure, pg.229, SOC309.
[409] FD24 Expenditure, pg.229, SOC309.

apply a bespoke adjustment and only make an allowance for these 6 sites with repeated incidents that are more likely to benefit from the provision of fixed power generation backup. [410]

372. This means that Ofwat allowed £4.596m of the £59.04m requested for power resilience in BP24. This reflects the additional investment at six out of 77 sites, which equates to 7.8% of the total expenditure requested. In addition to this, Ofwat allowed £7.05m as a sector-wide adjustment for wastewater. Our total allowance for wastewater power resilience enhancement was £11.646m - leaving a shortfall of **£47.394m**.

4.5.3 Why should this be redetermined?

373. The evidence for a likely increase in the frequency of high wind events (which are most likely to cause power resilience issues) shows that this has been,[411] and will continue to be, more of a problem in the North East than in neighbouring areas (such as United Utilities and Yorkshire Water).[412] We are more affected by these storms because of the underlying asset health of the energy network in our area, as we describe in Appendix 5, Section 2. There is no evidence that those companies have the same level of risk as us from cascading infrastructure failures:

- United Utilities' Pollution Incident Reduction Plan for 2023[413] showed that only 4% of their pollution incidents are caused by power failures - compared to 27% for us.[414]
- Yorkshire Water does not provide this breakdown in its Pollution Incident Reduction Plan[415] and describes limited action to tackle power resilience. We assume that this is either because it has only a small impact (like United Utilities), or because Yorkshire has not considered tackling this source of pollution incidents yet.

374. Applying the same relative allowance to all companies, regardless of the actual risks, creates a serious risk of underfunding much needed resilience in those areas facing a greater level of risk.[416] As we show in Appendix 5, Section 2, this risk depends on both expected changes in climate and the underlying vulnerability of the regional energy networks to failures.

375. In our DDRs, we explained that it is very difficult to quantify the baseline risk position – simply because we cannot access the information held by Northern Powergrid (**NPg**), and NPg is unable to estimate when, where, and how frequently service failures will occur. NPg has told us that they are aware that their asset health of their electricity poles is worse than other areas of the country, which can lead to a greater level of longer duration power outages especially during storms – but it cannot quantify the impact on this. This means that we cannot show exactly what the risk of power failure is now, and what this will be in the future.

[410] FD24 Wastewater Resilience EE, sheet 'CC_NES_Power', SOC312. These six sites were confirmed in Ofwat, PR24 final determination: Inbound query OFW-FD-NES-006 (**FD24 NES-006 Response**), SOC465 as: Barton STW, Billingham STW, East Hartford SePS, Howdon STW, Hurworth Place SePS, and Sedgefield STW.
[411] Appendix 5, Section 2
[412] See Part A here: BP24 Appendix A8-01 Climate Resilience A, SOC061.; and Part B research here: NES53 - BP24, Appendix A8-02, Climate Resilience Phase B - Technical assessments by Mott MacDonald (**BP24 Appendix A8-02 Climate Resilience B**), October 2022, SOC062.
[413] United Utilities, Pollution Incident Reduction Plan: Our approach to environmental stewardship (**UU PIRP 2023**), 2023, pg.12, SOC370.
[414] NWG - Pollution Incident Reduction Plan (**NWG PIRP**), February 2022, pg.12, SOC281.
[415] Yorkshire Water, Pollution Incident Reduction Plan (PIRP) 2022-2025 (**YW PIRP 22-25**), August 2022, SOC486.
[416] NWL DDR, Section 6.2, SOC191.

376. The NIC recognised this issue in its Second National Infrastructure Assessment[417] and recommended to Government that it should require regulators to put in place a system for cross sector stress testing which addresses interdependencies and the risk of cascading failures. NIC referred to the Third UK Climate Change Risk Assessment (**CCRA3**) Technical Report, which said that:

> Fundamentally, [cascading failures] is an area where non-governmental action will not manage the risk in the absence of government intervention. Public bodies and private organisations that manage, operate and maintain infrastructure have to meet statutory requirements and performance standards for the services they provide, and climate change is one of the risk factors that they should account for in their decision making in order to fulfil their obligations. In the specific case of infrastructure networks, the presence of complex interdependencies coupled with uncertainty around climate change makes it challenging to fully understand and thus address the risks posed (information failures). Further, in dealing with cascading failures, which require some degree of system thinking, significant governance barriers exist, which affect not only the level of preparedness of the infrastructure network, but also the type of response to failures and disruptions. In fact, the interconnectivity between the infrastructure assets means that any poorly defined responsibilities, or lack of co-ordination between various operators, could undermine the ability to anticipate, react, and recover from cascading failures. Government can play a key role in adopting a system-based approach to planning for resilience by providing the information to enable this, and providing infrastructure operators with a regulatory framework that supports adaptation at network level rather than at the level of individual assets. [418]

377. In our DDRs, we explained that there was no independent or regulatory standard set for power resilience. In the case of power failures and consequential pollution incidents at pumping stations, there has been no coordinated approach or cross-Government collaboration between regulators. Ofgem has set standards for Distribution Network Operators (**DNO**s) that allow for short duration power outages and outages associated with extreme weather events and has not set expectations (or allowed funding) to meet the standards that would be required to avoid increasing pollution incidents. We said in our DDRs that we strongly supported setting consistent resilience standards, and particularly for considering the impact of cascading risks across systems and how this could be addressed most efficiently for customers and the environment. We engaged extensively with NPg who have advised us that its standards for power interruptions are less stringent than ours, meaning that pollution incidents and interruptions to supply can occur when DNOs are meeting their regulatory standards which have specific exclusions for exceptional weather events.

378. We also reminded Ofwat that although we did not have any method of quantifying the future risk – and we would have preferred to have been able to do so – this lack of quantitative analysis should not prevent any investment being made. When considering resilience investments in the PR19 redeterminations, the CMA said that:

> Ofwat appears to consider that without such quantified evidence, Northumbrian's proposal is effectively unsustainable. We disagree with this view. While quantitative analysis of the kind Ofwat has described is

[417] National Infrastructure Commission, The Second National Infrastructure Assessment (**NIC NIA 2**), October 2023, SOC371.
[418] UK Climate Risk, Third UK Climate Change Risk Assessment (CCRA3) Technical Report (**CCRA3 Technical Report**), pg.28, SOC487.

> often helpful and is widely used within the regulatory regime, we do not consider that its absence should result in an outright rejection of a proposed resilience scheme in all cases. Instead, this case falls to an exercise of judgement regarding the evaluation of the specific facts available, and their implications. This is consistent with the CMA's general approach to evidence assessment.[419]

379. In reaching its conclusion that the need for the Essex Resilience scheme was met, the CMA reflected on the significance of historical evidence regarding actual events:

> We consider that actual experience of 'near misses' represents strong evidence for a potential risk in this case, which would support the need for intervention. When assessing the operational resilience of a network, an ex-post assessment of areas of actual failure (or near-failure) appears a straight-forward and effective approach to identifying sources of risk within the network. This is particularly true when considering the operational context of the supply area being in the driest part of the country, which limits the number of remedial measures available to the company."
>
> "More generally, we would be concerned about an assessment framework which required customer harm to occur before accepting this as evidence of the need for additional intervention. Such a reactive approach would expose customers to unnecessary harms and does not reflect the way that a responsible company would be expected to operate.[420]

380. As we set out in Appendix 5, Section 2 we can point to a number of actual events where storms have led to power interruptions that have had significant impacts on our service and ability to supply: Storm Arwen in 2021; and Storm Eowyn in 2025 are just two examples.

381. We think Ofwat agreed with this argument in our representations, because it reopened the power resilience case after DD and looked at the history of power faults at water and wastewater sites over the last five years and the impact this had (we provided this information in NES32 and further, more detailed information in query OFW-REP-NES-074).[421] This led to its decision to allow investment at just six sites (in addition to the sector-wide allowance), saying that:

> Of the 77 wastewater sites included in the NES proposal, 6 had more than 1 power outage related pollution incident over the 3 year period [we think this is 2021 to 2023] we apply a bespoke adjustment and only make an allowance for these 6 sites with repeated incidents that are more likely to benefit from the provision of fixed power generation backup.[422]

382. We welcome Ofwat's approach in setting a resilience standard that should be met – that is, "no more than 1 power outage related pollution incident in a three-year period". Setting a standard like this can be helpful in determining where investment should be made - but it must be set at the right level in order to achieve the right outcomes, and investment must be funded to meet the standard.

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[419] CMA FD19 Decision, para. 5.358, SOC334.
[420] CMA FD19 Decision, paras. 5.360-5.361, SOC334.
[421] Ofwat, PR24 Representation Outbound Query Form: OFW-REP-NES-074, NES Response (**OFW-REP-NES-074 Response**), SOC582; NES - Historical Pollution data 2020-2023 for OFW-REP-NES-074 Response (**OFW-REP-NES-074 Pollution Incidents**), SOC586.
[422] FD24 Wastewater Resilience EE, sheet CC_NES_Power, SOC312.

383. However, the standard Ofwat set has very little impact in reducing pollution incidents. For example, during Storm Arwen, we had 51 pollution incidents related to power failures in a single day (26 November 2021).[423] This includes three of the sites allowed at FD (Barton STW, East Hartford Sewage Pumping Station (**SePS**), and Sedgefield STW). This would still leave a clear problem with pollution incidents (only 3 out of 51 would have been prevented). Of a total of 194 pollution incidents caused by power failures between 2020 and 2023, **just 18 would have been prevented** if we had power resilience at the six sites where funding was provided at FD24 (or 9%).

384. Part of the reason for this is because in determining the list of six sites, Ofwat applied this resilience standard only to the list of sites we included in our enhancement case NES32. However, we had already prioritised this list according to other factors such as: the criticality of the asset or site; the vulnerability of the waterbody it discharges to; the type of treatment process; and how close the asset is to one of our operational depots (where emergency standby equipment might be available).[424] Only the two highest priority scoring bands were taken forward for investment in 2025-30 in BP24.

385. This means that in practice, Ofwat's standard becomes "no more than 1 power outage related pollution incident in a three-year period" **and** "in the top two highest priority scoring bands". In our query OFW-FD-NES-006, we showed that there are 22 more sites that had more than 1 power outage related pollution incident in the three-year period.[425] Providing power resilience at these sites would have avoided a further 52 pollution incidents in that period.

386. We would like the CMA to consider the **standard that should be set** at PR24 – and whether this should be backward looking (based on the number of pollution incidents in the past, 28 sites), or forward looking (based on criticality and other factors, 77 sites). Ofwat's standard suggests that an average of just under 1.66 pollution incidents per STW or pumping station should be tolerated for the five years between 2025 and 2030 (that is, protection from a one in three-year storm for only the most critical sites), but we do not think this would be acceptable to the EA, the Government, or our customers. This is a much less robust target than requirements set elsewhere, such as for customers to be protected from a one in 50-year storm for sewer flooding; or a one in 500-year drought for water supplies. We think that factors such as the criticality of the site and the vulnerability of related water bodies should also be considered when determining priority sites.

4.5.3.1 Interdependencies and cascading infrastructure failures

387. We would also like the CMA to consider how interdependencies and cascading infrastructure failures should be addressed **across the system as a whole** – that is, should water customers pay the price for a lack of resilience in energy networks?

388. This wider consideration of interdependencies and cascading infrastructure failures will not make much difference for the 2025-30 period, where investment must be determined now. However, it may be useful to set principles or recommendations for setting resilience standards in future. In its updated report on resilience standards[426] (published in September 2024), the NIC recently recommended that the Government should develop a forward-

[423] BP24 Appendix A3-18 Resilience NES32, SOC042.
[424] This prioritisation approach was clearly set out in the enhancement case submitted to Ofwat: BP24 Appendix A3-18 Resilience NES32, pg.34, SOC042.
[425] FD24 NES-006 Response, SOC465.
[426] National Infrastructure Commission, Developing Resilience Standards (**NIC Resilience Standards**), 19 September 2024, SOC372.

looking asset health standard for water and wastewater considering climate change related deterioration by December 2025 – as well as meeting its previous recommendation for a system for cross sector stress tests to be put in place to address interdependencies and the risk of cascading failures. The report also recommended that Defra, Ofwat, the EA and DWI should collectively identify gaps where resilience standards would be appropriate; with the Cabinet Office supporting this by collating and publishing resilience standards for the energy and water sectors. The NIC gives a specific example of a water treatment works which does not have a resilient supply, where it might be more cost effective or less carbon intensive to build a new power line rather than expecting several critical national infrastructure facilities each to invest in back-up generation. The Independent Water Commission call for evidence says that it has "heard a lack of overarching resilience standards for infrastructure means companies do not always know what standards they should be aiming for" and calls for evidence on this point.

4.5.4 Considerations for the CMA

389. We would like the CMA to include an additional **£47.4m** in its redetermination to allow investment in power resilience for all of the wastewater sites we identified in our enhancement case NES32. Our evidence, as summarised in Appendix 5 shows why this investment is needed, and why this is good value for customers.

5 SETTING A STRETCHING BUT ACHIEVABLE SETTLEMENT

- In setting FD24 Ofwat, and now the CMA, is required to ensure that the settlement represents a 'fair bet', i.e. that an efficient company has a fair chance on an expected basis of achieving the determination and earning the allowed return set in the FD. In doing so, regulators must balance driving improvement from companies in efficiency and service delivery to customers whilst also ensuring the financeability of the settlement. This critical question of how achievable the regulatory settlement is featured centrally in the CMA's PR19 redeterminations.
- Ofwat's FD24 does not reflect a robust consideration of the risk in the settlement in the round. When the settlement is compared to current expenditure levels and service improvement rates FD24 is, once again, unlikely to be achievable for the average or median performer in the sector. The expectation of continued sector-wide underperformance against FD24 is an unsurprising conclusion when Ofwat's PR24 framework has not changed significantly from PR19 and where the 'notional company' that Ofwat uses as its benchmark for its FD24 bears no resemblance to any of the 17 companies now operating in the sector - even the best performers would not recognise it.
- We do not meet the characteristics of the notional company. We are a better performer and so can accommodate more of Ofwat's challenge than other companies, but the balance of the FD24 package is not right for us and needs to be addressed now to ensure that AMP8 is a 'fair bet' and to avoid further deterioration in the investability of the sector.
- We recognise that the CMA will not be able, within the limited time available for a redetermination, to redesign the regulatory framework for the sector - that job is better addressed by the Independent Water Commission. We therefore make a relatively small number of targeted requests for changes that would make the settlement more achievable whilst still ensuring that companies are incentivised to improve services for customers and the environment. These include:
  - **ensuring a more appropriate level of stretch on costs**: reducing the 'frontier shift' efficiency assumption from 1% to (a still very stretching) 0.8% per annum; funding the increased regulatory costs that we face as a 'pass through' item similar to other regulatory frameworks; reflecting our forecast costs for network reinforcement activity; and removing unjustified AMP 7 delivery penalties;
  - **restoring the flexibility of the totex framework:** we ask the CMA to amend the PCDs on our base cost allowances to enable us to prioritise investment to the area of greatest need (for water mains and our lead replacement programme); we still commit to delivering sensible volumes of 'what base buys' from these allowances and ensuring customers do not 'pay twice' (for our metering and water mains PCDs); and
  - **ensuring that the service incentive framework cannot deliver either expected losses or windfall gains:** by removing the 50-basis point deadband from the OAM we ask the CMA to ensure that we face a 'fair bet' in relation to the service incentive framework.

5.1 WHY WE NEED TO ENSURE A STRETCHING BUT ACHIEVABLE PACKAGE

390. In setting FD24 Ofwat, and now the CMA panel, is subject to the s2 WIA statutory duties (see Appendix 1 Section 2). This includes the primary duties to protect the interests of current and future customers (the Consumer Duty) and ensure that the company is able, in particular by securing a reasonable return on its capital, to finance the proper carrying out of its functions (the Financing Duty), as well as the secondary duty to promote efficiency in how we deliver our services (the Efficiency Duty).

391. The combination of these duties points towards price control settlements that drive stretching improvements in service delivery and efficiency for the benefit of customers whilst remaining achievable and enabling investors to earn a reasonable return. A settlement set too loosely could fail to protect customers and provide windfall gains to companies and their shareholders. A settlement set too tightly would mean that the notional company could face an expected loss from overspending its totex and service penalties for failure to meet targets, which would mean that it cannot earn its base return. Clearly the consequences for customers in the former situation are poor but if the latter situation were to occur then it would damage the financeability of the sector. This would ultimately make it more difficult for the sector to attract capital investment, correspondingly impacting the delivery of essential services. The best determination, in the context of the statutory duties, is stretching and drives improvement for customers and the environment but is one that a notionally efficient company can meet with a reasonable expectation of earning its WACC, thus ensuring the ongoing financeability of the sector.

392. This question of the appropriate level of 'stretch' in the package was a central issue for the CMA's PR19 redeterminations. The CMA ultimately decided that the PR19 FD package was too stretching and made a series of adjustments to increase companies' cost allowances and compensate investors for the additional risks they were taking. In its decision the CMA stated:

> In setting the allowed return, our duty is to consider whether investors in a notional company, acting efficiently, have a reasonable expectation of a return equal to its WACC. Our assessment is that those investors would also take into account structural asymmetry in the package of incentives when considering expected returns on investment.
>
> Overall, we conclude that expected returns on ODIs should reflect the balance of rewards and penalties. Accordingly, we would expect negative ODI-related returns on average. Therefore, for the expected return to be consistent with the cost of capital, we would expect a small premium to be required.[427]

393. In fact, as we have previously highlighted (see Section 3.3) the whole water sector, including the companies who challenged PR19 and benefitted from the additional resources provided by the CMA, have still failed to operate within the totex allowances and meet the service performance targets set. This raises a clear question as to whether the sector is underperforming as per the public discourse or whether, on reflection, the settlement set at PR19 was incorrectly calibrated or too stretching.

[427] CMA FD19 Decision, pg.1082, SOC334. In its PR19 determinations, the CMA concluded that the risk was asymmetric and granted a 0.25% cost of equity uplift to appellant companies, including Northumbrian Water.

394. Either way, it provides important context for this price review and the uncertainty will directly influence how attractive the sector is to new capital investment. This inherent challenge facing the PR24 settlement is further exacerbated by the increasing risk facing the sector (described in detail in Section 3.4), in particular due to the external regulatory and political environment and the huge step-change in the capital programme. It is critical that this imbalance in the settlement is addressed going forward and that the PR24 settlement does represent a 'fair bet'.

5.2 UNDERSTANDING THE BALANCE OF RISK IN THE PACKAGE

5.2.1 Ofwat's view of risk in FD19 and KPMG's alternative analysis

395. Ofwat produced risk analysis at DD24 and FD24 which it used to test whether it had set the appropriate balance of risk or 'stretch' in the package.[428] This used historical data at a sector level and statistical analysis to infer a range of possible outcomes for the notional company over the AMP8 period. In DD24 Ofwat estimated that the RoRE risk arising from operational risk, which combines outcomes and cost had a midpoint of -0.2% underperformance. Ofwat recognised at FD24 that its DD24 implied an expected loss for the average company in the sector of over 1.8% RoRE,[429] indicating material deficiencies in its approach to risk modelling. At FD24 Ofwat commissioned a review of its outcomes risk model by Grant Thornton and implemented its recommendations. Ofwat's revised risk analysis results are set out in Figure 33. This shows the sector's median expected performance on operational risk remains the same, despite significant changes in risk allocation.

FIGURE 33: OFWAT'S RISK ANALYSIS

	DD			FD		
Scenario	**Worst**	**Base**	**Best**	**Worst**	**Base**	**Best**
Operational	-4.0%	-0.2%	3.6%	-4.6%	-0.2%	4.2%
Financing	-0.5%	0.2%	0.9%	-0.8%	0.3%	1.5%
Total	-4.5%	0.0%	4.5%	-5.4%	0.1%	5.5%

Source: DD24 Risk and Return Appendix, pg.21, SOC592; FD24 Risk and Return Appendix, pg.10, SOC307.

396. KPMG independently sought to assess the balance of risk.[430] Consistent with some of the points we raised in our DDR, KPMG identifies a number of concerns with Ofwat's analysis.[431] In particular:

- Ofwat's risk analysis consistently takes the mid-point of several statistical ranges for different risk drivers rather than the p50 (for example, this is done for inflation risk, ODI risk and wholesale totex). This appears to misrepresent the results of Ofwat's own analysis in its conclusions. If the, more appropriate, p50 value is used then KPMG find that the Ofwat's base case central estimate at FD24 changes from +10bps to -79bps overall (on an additive basis);
- Ofwat fails to use the most recent, and more relevant, time period for its risk analysis into totex risk. Ofwat chooses to use the 2015-20 period rather than the 2020-24 period. The latter period is most relevant for its risk analysis and given greater weight in its cost assessment process, for example. We highlighted this point in our DDR too;[432] and

[428] Ofwat, PR24 Draft Determinations: Aligning risk and return appendix (**DD24 Risk and Return Appendix**), 11 July 2024, SOC592; FD24 Risk and Return Appendix, SOC307.
[429] Ofwat, PR24 final determinations: Aligning risk and return (**FD24 Risk and Return**), December 2024, pg.18, SOC306.
[430] KPMG, PR24 Final Determinations - risk analysis for a notional company (**KPMG FD24 Risk Analysis**), 24 January 2025, SOC573.
[431] KPMG FD24 Risk Analysis, SOC573; See Section 4.4.
[432] NWL DDR, SOC191; See Section 2.4.2.

- Ofwat's FD24 risk analysis assumes most of the risks to be normally distributed rather than reflecting the actual distributions of the underlying data.

397. KPMG goes on to 'decompose' the risk analysis into elements related to 'regulatory design' (i.e. the extent to which the regulatory framework design creates downside risk skew) and 'regulatory calibration' (i.e. the extent to which setting too stretching service targets or efficiency challenges drives asymmetric risk). In its analysis for a notional WaSC, KPMG finds that, in the base case, between 0-71-0.75% downside skew is driven by regulatory design and between 1.55-1.58% downside skew is driven by regulatory calibration.[433] This suggests that the majority of the downside risk is created by the setting of overly stretching targets and allowances.

398. KPMG's risk analysis is summarised and compared to Ofwat's FD24 risk analysis in Figure 34. Overall KPMG suggests that "the key differences between Ofwat's range and the notional WaSC … include a pronounced negative base-case median expected RoRE performance and a materially wider range on an additive basis".[434]

FIGURE 34: NOTIONAL WASC RISK RANGES: OFWAT FD24 COMPARED TO KPMG REPORT

	Ofwat FD24 risk ranges			KPMG notional WASC risk range		
Scenario	**Worst**	**Base**	**Best**	**Worst**	**Base**	**Best**
Totex	-2.83%	-0.00%	2.83%	-2.79%	-1.48%	0.07%
Retail	-0.30%	0.00%	0.30%	-1.21%	-0.20%	0.78%
ODIs + MeXes	-1.91%	-0,22%	1.48%	-1.55%	-0.49%	0.51%
Financing	-0.70	0.30%	1.30%	-1.92%	-0.08%	1.66%
Revenue & Other	-0.05%	-0.03%	0.00%	-0.08%	-0.03%	0.00%
RoRE (additive)	-5.79%	0.06%	5.90%	-7.56%	-2.27%	3.03%
RoRE (simulated)	NA	NA	NA	-4.95%	-2.33%	0.50%

Source: KPMG FD24 Risk Analysis, SOC573.

5.2.2 Our views on the balance of risk

399. Risk analysis is inherently challenging and can only ever provide an indication of the expected outturn performance of the sector. However, based principally on the limitations highlighted on Ofwat's RoRE risk analysis, we consider that KPMG's analysis is superior and much more likely to reflect the outturn performance of AMP8 under Ofwat's FD24 for the notional company.

400. We note that Ofwat has now set two price controls, at PR14 and PR19, where in a sector blessed with many companies and management teams the average company has failed to live within the cost allowances provided and faced service performance penalties. In both cases, Ofwat clearly believed at that time that this would not be the case. We believe that FD24 simply repeats previous mistakes. In both AMP6 and AMP7 the sector was able to offset these operational losses through financing outperformance, albeit for different reasons (see Section 3.3). During PR14 this was principally driven by the lack of debt indexation in a 'lower for longer' interest rate environment, which was addressed at PR19. In PR19 this has been driven by an unusual period of very high inflation – neither of which could have been predicted ex ante. Had this not occurred the situation would have been even more severe.

[433] KPMG FD24 Risk Analysis, Table 10, SOC573.
[434] KPMG FD24 Risk Analysis, pg.6, SOC573.

401. Fundamentally we believe that the key issues driving this position are inherent in core elements of Ofwat's price control methodologies and the level of 'stretch' that Ofwat requires of companies. For example:

- Ofwat's application of four separate 'upper quartile' catch-up efficiency challenges, combined with a 1% ongoing efficiency assumption, effectively means that all but one WaSC must face a 'catch-up' efficiency challenge and on average companies must find c.7%[435] of efficiencies against their current levels of base cost expenditure. Moreover, as we show in Figure 20 companies actually have to find significant efficiencies in their current run-rate capital maintenance expenditures as part of this even though we show replacement rates are already well below economic levels (see Figure 14).
- The rates of improvement required from Ofwat's PCL targets are still very stretching despite the changes Ofwat made between DD24 and FD24. When we compare the outturn improvement rates for the common PR19 service metrics[436] that the sector has achieved on average over the last five years (2017-18 to 2023-24) this showed an average improvement rate of 3.39% over the period. In contrast the level of improvement required from Ofwat's FD24 PCL targets by 2030 is 9.99%.[437] KPMG also find that the level of stretch implied by FD24's PCLs is unlikely to be achievable on average.[438]

402. Fundamentally, Ofwat's view of the 'notionally efficient' company bears no resemblance to any of the companies operating in the sector. There is too much focus on hypothetical models of company performance without calibrating them to real-world experience. Even the very best performers, in a sector with many comparable companies, do not resemble the notionally efficient company Ofwat now uses. That company operates at the UQ of efficiency across four different base cost benchmarks, is able to achieve stretching performance across a very large number of service performance targets at the same time and is geared at 55%. Not only is there not one company (out of 17) in the sector that achieves all of these benchmarks collectively there is also no company in the sector that achieves any of them individually.[439] Moreover, Ofwat often exacerbates this problem by modelling each element separately and not bringing them together effectively, for example in its consideration of risk.

5.3 HOW CAN THIS BE ADDRESSED IN THIS REDETERMINATION?

403. To address this issue properly will likely need a redesign of the regulatory framework for the sector. We recognise that in the limited time available for the CMA's redetermination that is not a realistic ask and we will raise these issues for consideration by the Independent Water Commission. However, that will not address the immediate challenge. This imbalance must be addressed now to ensure that AMP8 is a 'fair bet' and to avoid further deterioration in the investability of the sector as much as possible.

404. We therefore make a relatively small number of targeted requests to the CMA for changes that would make the settlement more achievable whilst still ensuring that companies are incentivised to improve services for customers and the environment. These include:

[435] NWL Other Databook 1
[436] Including leakage, water supply interruptions, internal sewer flooding, pollutions, PCC, mains repairs, sewer collapses, unplanned outage, CRI ad discharge compliance
[437] NWL Other Databook 2
[438] KPMG FD24 Risk Analysis, Table 5, SOC573.
[439] Headline PRT gearing fell from 78% to 50% in 23/24 but underlying regulatory gearing was 64% after taking account of the Havant Thicket Cost Adjustment Mechanism (See: Portsmouth Water Limited, Annual Report and Accounts 2024 (**PRT Annual Report 23-24**), SOC477)

- **ensuring a more appropriate level of stretch to our costs**: reducing the 'frontier shift' efficiency assumption from 1% to (a still very stretching) 0.8% per annum; funding the increased regulatory costs that we face as a 'pass through' item similar to other regulatory frameworks; reflecting our forecast costs for network reinforcement activity; and removing unjustified AMP 7 delivery penalties (see Section 5.4);
- **restoring the flexibility of the totex framework:** we ask the CMA to amend the PCDs on our base cost allowances to enable us to prioritise investment to the area of greatest need (for water mains and our lead replacement programme); we still commit to delivering sensible volumes of 'what base buys' from these allowances and ensuring customers do not 'pay twice' (for our metering and water mains PCDs) (see Section 5.5); and
- **ensuring that the service incentive framework cannot deliver either expected losses or windfall gains:** by removing the 50-basis point deadband from the OAM we ask the CMA to ensure that we face a 'fair bet' in relation to the service incentive framework (see Section 5.6).

405. These changes should reduce the risk of performance and cost targets at FD24 being overly stretching, allow the scope for greater efficiency and improved performance through more flexible incentives, and allow the correct funding for investments in household and business growth. Overall, these changes would offset some of the gap highlighted by KPMG in its AMP8 risk analysis.

406. KPMG sets out a material base case risk range downside for the notional company at -2.3% (-2.27-2.33% for the notional WaSC). [440] The three changes proposed would adjust this downside indicatively by c.1.1% RoRE and closer towards a central zero value, thereby offsetting some of the gap highlighted by KPMG in its AMP8 risk analysis.

FIGURE 35 - KEY SOC ADJUSTMENTS TO BALANCE RISK

SoC Change	RoRE uplift[441]	Comments
Ensuring the appropriate level of stretch in our costs (Section 5.4)	0.4%	Covers the five totex adjustments set out in this section.
Restoring the flexibility of the totex framework: PCDs (Section 5.5)	0.2%	Removes an assumed £62m overspend created by the inflexibility of the PCD for water mains.
Balanced service incentive framework: OAM (Section 5.6)	0.5%	Removes 0.5% deadband and addresses the -0.49% highlighted by KPMGs analysis on 'ODIs + MeXes'

Source: NWL SOC Databook

407. We chose these adjustments as risk mitigants. The totex adjustments requested in Section 5.4 are those required to balance the appropriate level of risk of cost stretch. The flexibility in PCDs and OAM adjustments are areas where we are not requesting additional totex, but rather a rebalancing of the existing downside risk.

408. We acknowledge that these adjustments are specific to ourselves, a better performing company. Other companies may have higher risks and alternative solutions to balance risk.

[440] KPMG FD24 Risk Analysis, Table 2, SOC573.
[441] Totex & PCD are post cost sharing

5.4 ENSURING THE APPROPRIATE LEVEL OF STRETCH IN OUR COSTS

5.4.1 Frontier shift

5.4.1.1 Overview of the issue

409. Ofwat defines frontier shift as follows:

> Frontier shift (or 'ongoing efficiency') is the rate of efficiency improvements that even the most efficient companies in the industry can achieve, from improvements in working practices and the introduction of new technology. It is intended to replicate the forces of competition which would incentivise companies to continually drive out efficiencies over time by reducing costs. Frontier shift efficiency improvements are in addition to any catch-up efficiency challenge […].[442]

410. In FD24 Ofwat included a 1% per year frontier shift assumption. This effectively requires water companies to reduce their costs by 1% per year, across base and enhancement costs, all else equal.

411. The use of a 1% assumption has become the default assumption used by economic regulators when setting price controls and this is acknowledged by Ofwat:

> CEPA found no evidence to suggest the scope for frontier shift during PR24 was substantially different from that which other UK regulators have set in recent decisions, which cluster around 1%. For example, Ofgem applied a 1% per year frontier shift efficiency challenge in RIIO-ED2, which was determined in late 2022.[443]

412. However, a 1% productivity improvement assumption is not consistent with the significant decline in productivity rates in the UK since the global financial crisis in 2008. This decline is acknowledged by Ofwat's advisors' expert report which highlights that productivity is much lower since this date, as shown in Figure 36.

FIGURE 36 - TOTAL FACTOR PRODUCTIVITY (TFP) GROSS OUTPUT PRODUCTIVITY ESTIMATES (AVERAGE ANNUAL GROWTH RATE) FROM 2023 EU KLEMS

Industry	1996-2008	2009-2019	1996-2019
Chemicals and chemical products	1.8%	2.5%	2.1%
Construction	-1.0%	-0.2%	-0.4%
Machinery and equipment n.e.c	1.9%	-0.8%	0.9%
Manufacture of furniture; jewellery, musical instruments, toys; repair and installation of machinery and equipment	1.4%	-0.2%	0.9%
Professional, Scientific, Technical, Administrative and Support Services Activities	-0.5%	-0.3%	-0.3%
Total manufacturing	1.6%	0.4%	1.1%
Transportation and storage	-0.2%	-0.8%	-0.3%
Unweighted average	**0.7%**	**0.1%**	**0.6%**
Unweighted average of 4 highest performing industries	**1.7%**	**0.5%**	**1.3%**

Source: Table 2.1 of CEPA frontier shift report for Ofwat at FD24[444]

[442] FD24 Expenditure, pg.260 - Section 4.1, SOC309.
[443] FD24 Expenditure, pg.262 - Section 4.1.1, SOC309.
[444] CEPA, PR24 Final Determinations: Frontier Shift (**CEPA PR24 Frontier Shift**), 11 December 2024, pg.11 - Table 2.1, SOC509.

413. This clearly shows that productivity crisis that has hit the UK economy, and this affects the water sector too. For example, may of the sectors which our supply chain depends upon have seen negative productivity growth since 2008, including construction, and machinery and equipment (as shown in Figure 36). There is no reason why the water sector would be able to deliver higher productivity growth than the rest of the UK economy through its own activity and its supply chain.

414. The 1% per year assumption could be reasonable (based on a long run trend) if the UK economy had returned to these levels. However, it has not. Therefore, it is not correct to set a productivity target for water companies that is unlikely to be achievable in practice. We included an ambitious 0.8% assumption in BP24[445] which already includes some expectation about reverting to the long-term trend. This was based on report from Economic Insight[446] which we jointly sponsored with other companies. This was the most ambitious target set in any of the companies' business plans and also reflects our strong position supporting innovation across the sector. The evidence presented in the Economic Insight report still stands.

415. Further to this evidence on total factor productivity, we note that frontier shift should also take into account quality improvements – and these expectations have been high, with for example targets set at PR19 for a 15% reduction in leakage to be delivered from base expenditure. In FD24, Ofwat sets stretching targets for companies to achieve UQ performance, and this should be reflected in frontier shift assumptions too.

5.4.1.2 Considerations for the CMA

416. We think that it is important that the CMA reviews this area with a fresh pair of eyes and focuses on the issue of the productivity slowdown since 2008, and what it is reasonable to assume this means for water company productivity growth during AMP8.

5.4.2 Removing unjustified AMP7 delivery penalties

417. FD24 has the effect of introducing "retrospective PCDs" – by clawing back allowances for activity it considers should have been delivered during previous AMPs but has not. For us, this approach is applied to meter replacements and investment to increase growth capacity at wastewater treatment works. This investment activity was not funded specifically in AMP7, and so these adjustments are not reasonable because they do not reflect the expenditure allowed in base activity. There was no expectation set at PR19 or anywhere else that we would be required to deliver this or that part of our base expenditure allowances would be made conditional on the delivery of that activity.

418. This results in an unjustified downward adjustment at FD24 of £14.0m to our allowance for wastewater treatment growth in AMP8, as well as reducing the meter renewals cost adjustment allowance at FD24 by £24.3m.

419. We ask the CMA to reverse these downward adjustments. In Section 5.4.2.1 we explain the treatment of wastewater growth at FD24 and our proposed change. For meter replacements, we explain this in Section 5.4.2.2.

5.4.2.1 FD24 enhancement allowances for wastewater treatment growth

420. In assessing BP24 proposed costs for wastewater treatment growth, Ofwat noted that most companies did not deliver the amount of additional STW capacity that they had forecast to deliver in their business plans for PR14 and

[445] BP24 Appendix A3 Costs, Section 3.6, SOC018.
[446] Economic Insight, Productivity and Frontier Shift at PR24, A report on behalf of a consortium of water companies (**Economic Insight Frontier Shift**), 28 April 2023, SOC475.

for PR19.[447] Ofwat considers that companies have been implicitly funded to deliver the level forecast in company business plans.[448]

421. However, the PR14 and PR19 price controls did not specifically fund these capacity upgrades and base cost allowances were not explicitly ring-fenced for this purpose. Nor were these capacity levels specified as a deliverable in those controls.

422. Ofwat made a downward adjustment to PR24 enhancement allowances to account for "past under delivery" and to address the risk that customers "pay twice for improvements".[449] This has led to a downward adjustment of £13.97m to our base allowance to the level of funding that Ofwat has assessed we require to deliver our AMP8 growth at STW enhancement programme.

423. That is, Ofwat:

- first, assessed our proposed costs as broadly efficient (allowing £52.2m in FD24 for our proposed growth projects, compared to £53.4m in BP24);
- second, compared the costs for wastewater treatment growth forecast in our BP19 (£111.4m) to the outturn cost in BP24 (£23.8m), a difference of £27.1m after cost sharing was applied. Ofwat repeated this analysis for AMP6, which showed an adjustment of £0.9m; and
- finally, calculated the average over the last two AMPs (£13.97m) and deducted this from the efficient expenditure allowance (£52.2m) to calculate a final totex allowance of £38.2m.

424. Although our BP19 indicated that this expenditure of £111.4m was likely, FD19 did not make any specific allowance for our forecast wastewater growth schemes which were dominated by Howdon STW at a cost of £91m. Instead FD19 just provided a general modelled amount within base allowances, which has no direct link to actual costs. The CMA's redetermination used the same approach.[450] Further to this, FD19 also reduced our allowance for water and wastewater growth together by a further £26.4m which the CMA modified to £39.4m[451] to reflect lower growth in the North-East. This means that the base allowance for growth was based on the average modelled costs for growth over time across the sector; with an adjustment made for lower growth in the North-East. Our business plan request for £111.4m was not expressly included in FD19 or the CMA redetermination as "allowed totex", nor was it used to calculate the amount of allowed totex.

425. As we describe in Appendix 1 Section 8.2, the investment at Howdon STW was delayed (efficiently) due to reductions in demand and additional efforts to reduce the flow to the works. As this growth investment was not funded in AMP7, it is not reasonable to compare this to BP19. A better comparison would be to the implicit allowance for wastewater growth in at FD19.

5.4.2.2 FD24 base allowance adjustments for smart metering

426. In FD24, Ofwat split metering costs between base and enhancement as follows:

[447] FD24 Expenditure, pg.244, SOC309.
[448] FD24 Expenditure, pg.244, SOC309.
[449] FD24 Expenditure, pg.247, SOC309.
[450] CMA FD19 Decision, para. 4.759, SOC334.
[451] CMA FD19 Decision, para. 4.787, SOC334.

- **Replacement of existing meters** is included in base costs. Ofwat calculated an implicit allowance from water base models and allowed an uplift to base costs in its sector-wide cost adjustment feeder model.[452] In doing so, Ofwat made an adjustment for "under delivery" in AMP7, which we do not agree with and discuss below.
- **New meters** and **upgrades to smart meters** are included in enhancement costs. Ofwat's model allowed us most of our forecast costs. We do not ask for a redetermination of these costs.

427. In FD24 Ofwat recognised that base costs (which reflect historical costs) would not necessarily cover all forecast meter replacements in AMP8. For example, Ofwat calculated that the base cost models had an implicit allowance for 86,874 meter replacements for us compared to our business plan forecast of 480,997 meters.[453] Ofwat made an adjustment to provide an additional base cost uplift to fund these additional meter replacements.

428. However, Ofwat only funded 198,195 meter replacements with an additional base cost uplift of £24.3m (not the difference between 480,997 and 86,874 = 394,123). The reason for this difference is because Ofwat applied an adjustment for "under delivery" in AMP7. Under this approach, Ofwat calculated the difference between the forecast for AMP7 in our PR19 business plan (299,915) and the actual number that would be delivered (103,987). Ofwat then assumed that this "under delivery" (some 195,928 meter replacements) would be delivered in AMP8 for no additional funding. [454]

429. Ofwat explains the reason for this approach in DD24:

> To ensure that customers do not pay twice for meter replacement, we hold companies to account for the delivery of forecast meter replacements included in PR19 business plans. Under-delivery is calculated as the difference between PR19 forecast meter replacements and the sum of delivered and forecast replacements over the 2020-25 period. Any undelivered replacements have been added to our view of 'what base buys' to arrive at our view of the implicit allowance (i.e. 'what base buys' plus undelivered meter replacements over the 2020-25 period).[455]

430. For AMP7, there was no expectation set at PR19 that this volume of meters needed to be delivered. Nor were there any other regulatory expectations set for the number of meters that needed to be delivered in AMP7, until DD24. This is a "retrospective" requirement applied at FD24.

431. In addition to this, customers have **not** already paid for meter replacements from base expenditure in AMP7. At PR19 Ofwat allowed enhancement expenditure for new meters and upgrades to smart meters, but no funding for replacement of existing meters. These were assumed to be included in base expenditure, though the number of replacement meters was not a cost driver and was not taken into account by Ofwat in any of the base models. The forecast of 299,915 meter replacements was based on a forecast in our PR19 business plan which was not reflected in base funding at PR19 in any way.

[452] FD24 Meter Renewals CA Model, worksheet "Household Delivery", SOC493.
[453] FD24 Meter Renewals CA Model, worksheet "Household Delivery", SOC493.
[454] FD24 Meter Renewals CA Model, worksheet "Household Delivery", SOC493.
[455] DD24 Expenditure, pg.39, SOC296.

432. Ofwat has not provided any estimate of what would have been included in AMP7 base models. Using the same method that Ofwat used to calculate the implicit allowance for AMP8 in its metering cost adjustment model, we estimate that this would be 85,393 meter replacements for AMP7.[456] We delivered more than this in practice (103,987).

433. Since customers have not paid for these meter replacements in AMP7, it is not reasonable to expect these to be delivered in AMP8 for free. This has led to a downward adjustment of £24.88m to our base allowance, compared to the base uplift that would have otherwise been calculated – and this means that we are not sufficiently funded to deliver the meter replacement volumes required in AMP8 by the PCD.

434. In addition to this, the PCD set at FD24 sets a requirement to deliver the full 480,997 household meter replacements forecast in our business plan. As we explain above, only 198,195 of these meter replacements were funded through the additional base cost uplift. This reduces the flexibility within base expenditure and means that we could not respond to other risks. This PCD should only include the meter replacements funded through the additional base costs uplift.

5.4.2.3 Ofwat's FD24 approach – retrospective adjustments

435. Ofwat introduced the totex and outcomes framework at PR14.[457] This deliberately sought to move away from the post-privatisation approach that had been prescriptive about outputs and how companies were required to deliver them.

436. One important feature of that regime is that it moved away from a focus on interventions and outputs that were defined by Ofwat to placing responsibility, and control, in the hands of the companies. Totex allowances under the price control were not hypothecated (or ring-fenced) for specific activities. Instead, companies signed up to PCs with strong financial incentives that drove performance improvements in areas that mattered to customers and the environment. Companies were free to decide how to spend their allowances in order to deliver against those commitments, and in return, took on more responsibility for meeting their performance commitments and wider obligations.

437. The switch in the regulatory framework supported the removal of the perceived "capex bias" which Ofwat considered increased flexibility for companies and value for money for consumers.[458] Ofwat also found that:

> The outcomes regime did have a significant impact on the way companies were managed and significantly heightened their focus on customers. Many companies told us that the incentives in the outcomes framework helped them align their business operations more closely around the priorities of customers.[459]

438. Ofwat retained the totex and outcomes framework at PR19.[460] In FD19 Ofwat reiterated one of the key principles of the framework:

[456] This can be calculated by extending the formulae in column I of the "household delivery" sheet of FD24 Meter Renewals CA Model, SOC493.
[457] See Appendix 1 Section 4, Figure 10 Row 5.
[458] See Appendix 1 Section 4, Figure 10 Row 19.
[459] Ofwat, PR14 Review (**PR14 Review 2022**), January 2022, pg.3-4, SOC434.
[460] See Appendix 1 Section 4, Figure 10 Row 10.

> We consider that under our regulatory framework of totex and outcomes, companies have flexibility to defer or bring forward investment as appropriate and efficient.[461]

439. In FD24 Ofwat explained that it has continued this broad approach:

> Our regulatory regime gives companies flexibility as to how they invest their base expenditure allowances to deliver good outcomes for customers and the environment.[462]

440. This flexibility for companies to effectively and efficiently manage their base expenditure allowance is crucial to ensuring an optimised approach to asset risk management and the delivery of appropriate levels of capital maintenance – when and where it is needed. This means that base expenditure plans change over time to meet needs and risks as they arise.

441. Ofwat's approach at FD24 moves away from the totex and outcomes approach it has used since PR14, and links specific forecast outcomes set out in BP19 to required deliverables. It is not clear that this is a conscious decision to depart from these principles – this was not highlighted or consulted on at the PR24 framework or methodology stages.

442. By introducing retrospective adjustments, Ofwat's FD24 also introduces uncertainty about what companies will be held to account for in the future. In setting out its expectations of what companies can and should achieve from their base allowance funding Ofwat states:

> Companies must deliver **sufficient asset renewals and refurbishments** with base expenditure allowances to maintain long-term capability of assets…. we expect companies to continue to **maintain and improve** the long-term capability of assets and to meet existing permit and statutory obligations with base expenditure allowances.[463] (emphasis added)

443. However, it is not clear what level of asset renewals and refurbishments Ofwat will consider to be "sufficient" – or if that changes over time, how that might be reflected in future price controls.

444. Ofwat goes on to say:

> we will only consider providing additional allowances for asset renewals and refurbishment that is above and beyond what companies should be delivering with PR24 base expenditure allowances (i.e. what base buys). We will also take into account any under-delivery of capital maintenance in previous periods. **Particularly if companies have allowed asset condition to deteriorate over time**. This avoids customers paying twice for capital maintenance works.[464] (emphasis added)

445. This effectively introduces another requirement, i.e. for companies to ensure that the condition of its assets do not deteriorate over time. An absolute and blanket obligation to not allow asset condition to deteriorate over time is not necessarily consistent either with good asset management practice or with the totex and outcomes approach. As

[461] FD19 Cost Efficiency, pg.149, SOC389.
[462] FD24 Expenditure, pg.109, SOC309.
[463] FD24 Expenditure, pg.19 and 89, SOC309.
[464] FD24 Expenditure, pg.93, SOC309

we demonstrate in Section 4.2 it is also not consistent with the levels of funding provided by the price control settlement and therefore may not be deliverable. Instead, the focus should be on ensuring that the overall 'asset risk' for the company shouldn't be allowed to deteriorate – an approach which takes into consideration health and criticality of the asset base – as well as condition. This principle is consistent with the NARMs approach taken in the energy sector.[465] However, delivering this would require a different approach to cost assessment which considers forward-looking asset investment needs.

446. Equally, companies may be able to deliver the outcomes for customers and the environment without undertaking capex-intensive asset replacement (e.g. through operational measures). In an outcomes-focussed regulatory framework, what should matter is outcomes for customers and the environment and the long-term risk to those outcomes. The condition of assets is only one contributing factor to that, and it seems wrong for Ofwat to retrospectively create obligations around that.

447. It is not clear which assets are covered by this "no deterioration" obligation. As such companies face a real risk that Ofwat will enforce this requirement in an arbitrary manner at future price controls, as it has done with mains renewals at PR24 for some other companies and in other areas of its work.

448. These retrospective downward adjustments for perceived AMP7 under-delivery are particularly unjustified given that we have overspent our base expenditure allowance for AMP7 to-date by £206m (12% of cumulative base expenditure allowances) (see Section 4.2.3.2).[466] There is no sense in which customers would "pay twice" in the absence of these adjustments.

5.4.2.4 FD24 cost assessment does not take account of these potential new obligations

449. As set out above, Ofwat's statements create new obligations for companies to meet during AMP8 and future periods. While there is considerable uncertainty about the precise scope of these new obligations, we are concerned that Ofwat's cost assessment process has made no serious attempt at estimating the impact of these obligations on companies' costs or whether base cost allowances, after taking account of adjustments, are sufficient to fund the activities required to meet these obligations.

450. Ofwat's statements seem to suggest that it considers that base expenditure allowances are sufficient to fund the maintenance of the long-term capability of assets. There does not appear to be a sound basis for this claim. Ofwat has not considered what it should cost the efficient company to maintain the long-term capability of its assets, and it is not sufficient to simply assert that its base cost allowances are sufficient. Ofwat's base cost models do not take account of drivers of long-term asset capability, and apart from a few targeted cost adjustments, it has not made a comprehensive attempt at estimating the costs associated with that obligation.

5.4.2.5 Considerations for the CMA

451. We request the CMA to remove the £13.97m penalty that Ofwat applied its view of our efficient costs for wastewater growth at FD24, restoring this to £52.2m.

[465] See Appendix 1 Section 4, Figure 10 Row 13.
[466] WCPR Data 23-24, tabs Cumulative Totex Wholesale plus retail less enhancements, SOC444: Cumulative Wholesale totex less enhancement, See NWL SOC Databook, Figure 12.

452. We request the CMA to include an additional £24.88m (compared to FD24) in the meter renewals base cost adjustment to reflect the additional 195,928 meter replacements that are not funded at FD24 due to Ofwat's application of the AMP7 delivery penalty. We further ask the CMA to modify the PCD to reflect this expectation of meter replacements delivered from the base cost adjustment, rather than from base expenditure.

453. For the reasons set out above, we do not agree with Ofwat's FD24 assertion that base expenditure allowances are sufficient to improve the long-term capability of assets or that they are sufficient to prevent deterioration in asset condition over time. Ofwat's base cost assessment methodology simply does not consider the efficient cost of meeting these obligations, other than in the limited case of water mains. If left unchallenged, we are concerned that Ofwat might decide to hold us to account for these unfunded obligations in relation to our wider asset base as part of its consideration of 'what base buys' in future funding decisions. While we accept that the CMA cannot fetter Ofwat's reasonable discretion in future decisions, we request that the CMA, through this redetermination, makes it clear that PR24 base expenditure allowances do not necessarily fund blanket obligations to improve the long-term capability of our asset base or to prevent asset deterioration, except where such obligations are specifically funded following a reasonable cost assessment process that takes account of the efficient cost of meeting those obligations.

5.4.3 Cost pass-through for increased regulatory costs

454. We expect to see an increase in regulatory costs in future. Ofwat has acknowledged two of these in its FD24 – on water abstraction charges and wastewater permit costs, it says:

> We also agree there is some uncertainty about future environmental regulation and permit costs and therefore how much companies will pay in 2025-30. Due to the limited control companies have over the level of these charges we consider it appropriate to allow further protection for companies and customers with enhanced 25:25 cost sharing rates. This will allow companies to recover 75% of any costs in excess of PR24 cost allowances or allow customers to recover 75% of the amount by which costs are lower than PR24 allowances. We consider this provides companies with appropriate protection in respect of efficiently incurred costs, while retaining some incentive for companies to fully engage with the Environment Agency over changes in wastewater discharge consent charges.[467]

455. Ofwat also introduced a Storm Overflows Uncertainty Mechanism at DD24, which reflects the uncertainty for delivery of storm overflows and investigations. On the need for investigations, Ofwat says:

> For storm overflow investigations, given the uncertainty over the number of storm overflow investigations that may be required from the SOAF2 guidance, the uncertainty mechanism will provide additional funding subject to companies having delivered all of their existing investigations and spent all existing funding for investigations. Additional funding will be provided on the same average cost per storm overflow investigation rate as funded in PR24, although we reserve the right to use companies' outturn costs to determine the funding for additional storm overflow investigations that are not covered by the allowances

[467] FM24 Appendix 9 Expenditure, pg.69, SOC292.

> for the existing investigation programmes, if outturn unit costs are significantly lower than assumed as part of PR24.[468]

456. In BP24, we also reflected on the likely increase in costs from monitoring pollution incidents – where further investigation and reporting requirements would require an increase in staffing. We estimate that we have now spent more than the £13.5m included in BP24 for these activities (this enhancement case was rejected at DD24 and FD24).

457. Increasing regulatory requirements for investigations and reporting can be an effective way to make sure that investments are planned and delivered efficiently – and reported transparently. However, the principle of "cost pass-through" for regulatory costs should be applied to increases in costs, as is it in other sectors.

458. We do not challenge the FD24 approach on abstraction charges, wastewater permit costs, storm overflows uncertainty, or pollution monitoring (though we welcome Ofwat's reassurances about flexibility in these areas). However, we ask the CMA to revisit the FD24 decision not to include cost pass-through for Ofwat's licence fees, particularly because the fees in February 2025 do now represent a sustained increase in costs.

5.4.3.1 Ofwat licence fees increase

459. Ofwat is funded through the licence fees paid by all water companies.[469] Although this is not explicitly reported in the APR as a separate line, it is part of the 'other base operating expenditure' line and therefore there is an implicit allowance for this in base modelled costs. We have assumed the implicit allowance is the average of the last 5 years.

460. In considering the treatment of its licence fee in the PR24 base expenditure allowance Ofwat considered our challenge that licence fee costs should be assessed as part of unmodelled base costs with either 100% pass-through to customers or a higher cost-sharing rate.[470] Ofwat, however, disagreed:

> We disagree and will not change the treatment of licence fee costs at PR24. Licence fees are a small proportion of total costs, and do not vary much year-on-year. They also largely vary based on company scale, which is a key driver in our base cost models. It is therefore appropriate to include licence fees in modelled base costs. We do not pass through any other costs 100% to customers and so would seem odd that the only costs we would pass through would be our licence fees. We also consider that water companies can influence our costs through engagement on our regulatory approach and our forward programme consultations.[471]

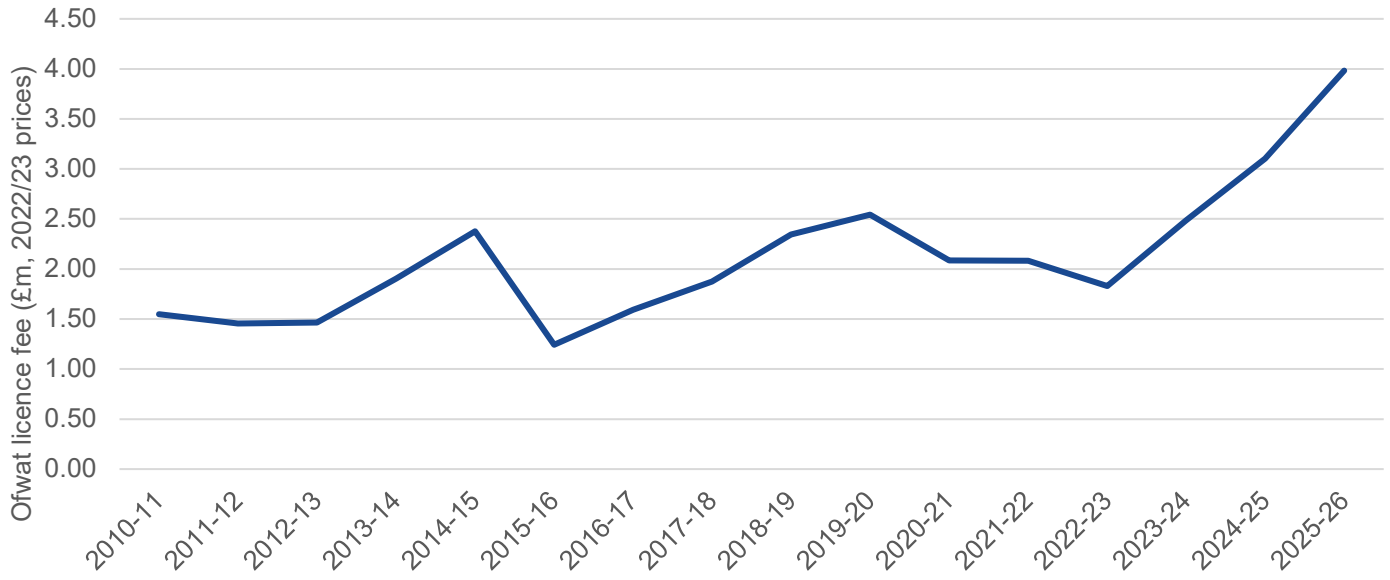
461. In contrast to Ofwat, Ofgem allowed a 100% licence fee pass through in its determinations.[472]

462. Shortly after it published FD24 Ofwat informed us that there is a large increase (41%) in 2024-25 compared to the average of the last 5 years.[473] An increase in licence fee during price reviews is to be expected and is reasonable

[468] FM24 Appendix 9 Expenditure, pg.344, SOC292.
[469] The obligation to pay these fees is set out in Licence Condition N: NWL Licence 12.02.2024, pg.116, SOC256.
[470] NES - Northumbrian Water response to the Ofwat proposal to modify the regulation fee cap in Condition N of water company licences (**NWL Response to Fee Cap Modification**), July 2022, SOC288.
[471] FM24 Appendix 9 Expenditure, pg.12, SOC292.
[472] Ofgem, Licence Fee Cost Recovery Principles (**Ofgem Licence Fee Recovery**), June 2021, para. 2.14, SOC436.
[473] Ofwat, Ofwat's forward programme 2025-2026 - draft consultation (**Ofwat Forward 25-26 Draft**), January 2025, SOC378.

– but after PR14 and PR19 were finished the licence fee decreased again due to lower work volume. This trend is shown in Figure 37 where we can see the peaks for PR14 and PR19 (in 2014-15 and 2019-20).

FIGURE 37 - OFWAT LICENCE FEE FOR NES



Source: NWL licence fee paid to Ofwat in 2022/23 prices over time.[474] NWL SOC Databook.

463. However, Ofwat has proposed a 25% increase in its budget from £56.1m[475] in 2024-25 to £72m[476] in 2025-26 (or £51.8m to £64.8m in 2022/23 prices). It is 101% higher than in 2022-23 (£32.3m).[477] That is a sharp increase which we would not expect based on historical trends and which we do not consider that represents a cost that 'do(es) not vary much year-on-year'.

464. To estimate Ofwat's licence fee for 2025-26, we calculated a unit cost based on Ofwat draft core budget and total number of households. We then applied this unit cost to our number of households to get an implied fee for us. We did this for every year from 2017-18 and compared the annual implied fee with the actual fee that we paid to Ofwat. On average, the actual fee has been £0.13m lower than the implied one. Our final estimate is the implied fee for 2025-26 minus the average difference, which is £4.02m. This results in £1.81m increase per year, or £9.1m for AMP8.

465. Ofwat stated in the draft forward program 2025-26:

> Our Core Ofwat budget set out above which was agreed as part of the spending review 2025 is subject to any further increases agreed with HM Treasury. The increase in our budget from 2024-25 to 2025-26 also reflects our request for additional funding, which HMT approved, to focus on building resources to help drive transformation in company performance, addressing long term infrastructure delivery, the huge step

[474] Licence fee for 2024-25 is from Ofwat's invoice. Licence fee for 2025-26 is an estimate based on Ofwat's draft core budget, the unit cost (Ofwat budget per property) and NWL's property number.
[475] Ofwat, Ofwat's forward programme 2024-2025 (**Ofwat Forward 24-25**), March 2024, pg.17, SOC377.
[476] Ofwat Forward 25-26 Draft, pg.19, SOC378.
[477] Ofwat, Ofwat's forward programme 2022-2023 (**Ofwat Forward 22-23**), 30 March 2022, pg.16, SOC375.

> up in investment and major projects in PR24, as well as delivering a significant boost to Ofwat's enforcement capacity.[478]

466. This suggests that the increase in costs to meet these fees will be permanent across AMP8. This is a material increase and is outside management control.

467. We have made annual representations to Ofwat setting out the reasons we believe the licence fee increases are excessive and challenged Ofwat on its failure to reduce regulatory burdens.[479] We note that the Ofwat 24/25 draft budget increased from the proposed £51m to the final budget of £56.1m,[480] so our representations were to no avail.

468. The Ofwat 25/26 budget has more than doubled in real terms since 2005 and remains a clear outlier when compared to average water bills (up 34% in real terms) and average earnings (9% higher)[481] over the same period. In contrast, Defra and CC Water have seen their budgets reduce considerably in real terms over the same period demonstrating that efficiencies can be found if effort and focus is applied to doing so.

5.4.3.2 Consideration for CMA

469. We request that the CMA provide an additional allowance of **£9.1m** for AMP8 to cover the projected increase in Ofwat's licence fee.

5.4.3.3 Note on other licence fee increases

470. On 12 March 2025 we have received notice of a consultation by the EA on its intention to impose a 'water industry levy' on the sector using its new powers under the Water (Special Measures) Act which received Royal Assent on 24 February 2025.[482] The consultation on the EA's "cost recovery of our existing enforcement functions and duties" is intended to commence in late March. The scale of the costs that might be passed on to customers are currently unknown.

471. There are also ongoing discussions with the EA regarding the replacement of a significant abstraction licence which have just revealed that the cost of the new licence may be significantly higher than the existing licence. At this stage we do not have sufficient clarity on the timing or cost impacts to support a formal submission to the CMA in the context of this redetermination, but it is expected to lead to increased costs during AMP8.

5.4.4 Network reinforcement

472. In BP24 we forecast £12.5m for network reinforcement in the water network based on our outturn costs from 2020/21, 2021/22, and 2022/23.[483] The Ofwat PR24 methodology included this within base expenditure, with no separate allowance:

> We intend to… include network reinforcement costs in the base cost models due to substantial interactions with capital maintenance expenditure and a close relationship with base cost drivers (e.g. scale and

[478] Ofwat Forward 25-26 Draft, pg.19, SOC378.
[479] See NES - NWL response to Ofwat draft forward programme 23-24 (**NWL Response to Forward Programme 23-24**), February 2024, SOC286.
[480] Ofwat, Ofwat's forward programme 2024-2025 - draft consultation (**Ofwat Forward 24-25 Draft**), January 2024, pg.18, SOC376; Ofwat Forward 24-25, pg.17, SOC377.
[481] NES - NWL response to Ofwat draft forward programme 25-26 (**NWL Response to Forward Programme 25-26**), 28 February 2025, SOC597.
[482] EA, Letter to Regulatory Directors on Water Industry Levy Consultation (Phase 1 WSMA Cost Recovery) (**EA Letter on Water Industry Levy 03.25**), 12 March 2025, SOC557.
[483] BP24 Tables 10.23, tab DS2e, SOC110.

> density). Arup were also unable to develop robust standalone models for network reinforcement. We will consider cost adjustment claims from companies that expect to deliver a higher amount of network reinforcement work than is funded through the base cost models.[484]

473. We expected to incur higher costs than our £12.5m forecast in AMP8, and we should have said this in BP24 – but unfortunately, we did not. In particular, new developments in the Chelmsford area (9,579 new homes have been proposed)[485] require upgrades to the Boreham network including a new service reservoir to support continuity of supplies (£15.0m), upgrades at the booster pumping station (£2.0m), and £14.3m for new network mains – an additional **£31.2m**.[486] If we do not carry out these upgrades there would be low pressure and potential loss of supplies.

474. Ofwat's approach in the past has been to include "lumpy" expenditure such as network reinforcement costs within base expenditure and it followed the same approach in the PR24 methodology. Our network reinforcement costs would not meet the criteria for a cost adjustment claim under the Ofwat methodology because:

- this is not a special factor that relates to our unique circumstances – all companies are facing growth in the number of households, and it requires occasional atypical investment. Ofwat required companies to demonstrate that "a) there is compelling evidence that the company has unique circumstances that warrant a separate cost adjustment; and b) there is compelling evidence that the company faces higher efficient costs in the round compared to its peers (considering, where relevant, circumstances that drive higher costs for other companies that the company does not face";[487]
- Ofwat made it clear that "the cost adjustment claim process should not be used to bypass the cost models";[488] and
- Ofwat's methodology said it would take account of the quality of CACs within the QAA.[489] This meant that CACs that did not meet the criteria would be penalised.

475. So, we did not submit a CAC for these additional costs. Instead, we used a forecast based on historic costs (which was almost exactly the implicit allowance in Ofwat's calculation at FD24).

476. In DD24, Ofwat continued to include network reinforcement expenditure within modelled base costs.[490] No company had submitted a CAC for network reinforcement, with Thames Water withdrawing an early claim. Portsmouth Water had argued that network reinforcement should be assessed separately because it depended on network capacity, which it considered is not captured well in Ofwat's models. Ofwat said in response:

> We continue to consider that network reinforcement expenditure should be included in the scope of modelled base costs due to substantial interactions with capital maintenance expenditure and a close

[484] FM24 Appendix 9 Expenditure, pg.14, SOC292.
[485] Chelmsford Local Plan, Pre-Submission (Regulation 19) Document: Our Planning Strategy 2022 to 2041 (**Chelmsford Pre-Submission Reg 19**), February 2025, pg.425, SOC625: projects over 9,000 properties built around Chelmsford over 2025-30.
[486] ESW, Boreham Booster Pipeline, Value Split (**Boreham Booster Value Split**), March 2025, SOC599 – note, Boreham Booster Value Split, SOC599 is in 2024/25 prices, but the value of £31.2m is deflated to 2022/23 prices.
[487] FM24 Appendix 9 Expenditure, pg.157, SOC292.
[488] FM24 Appendix 9 Expenditure, pg.32, SOC292.
[489] FM24 Appendix 9 Expenditure, pg.33, SOC292.
[490] Ofwat, PR24 Draft Determinations: Expenditure allowances - Base cost modelling decision appendix (**DD24 Expenditure - Base Cost**), 11 July 2024, pg.8, SOC297.

> relationship with base cost drivers (e.g. scale and density). Portsmouth Water could have submitted a cost adjustment claim if it expected to deliver a higher amount of network reinforcement work than is funded through the base cost models. For example, if it expects to experience higher population growth than most companies in the sector, and the network reinforcement costs associated with that high growth are material.[491]

477. In FD24, Ofwat included a separate adjustment for economic growth, anticipating increases in population which facilitated new developments (that is, network reinforcement). Ofwat said that:

> We received claims for six companies for an increase in network reinforcement spend over and above the allowance included within base expenditure allowances. To accommodate growth across the network, we are providing a sector adjustment of £0.7 billion for companies to undertake additional network reinforcement. We will claw back this expenditure if it is not used on network reinforcement.[492]

478. Ofwat made this adjustment for all companies based on their forecast of network reinforcement costs submitted with their DDRs, taking into account the implicit allowance from base models and a cost efficiency challenge. This resulted in a £0.12m allowance for Northumbrian Water. Ofwat did not inform companies before FD24 that it planned to do this. In FD24, Ofwat says:

> We include historical network reinforcement expenditure in the scope of modelled base costs. We invited companies to submit cost adjustment claims if they expected to deliver more network reinforcement than is funded through the base cost models.[493]

479. However, we cannot find any evidence of this in the documents published at DD24, and this seems to be just the general methodology statement about cost adjustment claims. If Ofwat had consulted on its approach, we would have explained that we expected higher network reinforcement costs than shown in our DDR submissions and would have asked for the appropriate adjustment. We accept that we should have included these costs in our business plan and DDR submission.

FIGURE 38: FD24 NETWORK REINFORCEMENT ALLOWANCES

Water company	Implicit allowance at FD (£m)	Additional allowance at FD (£m)
ANH	40.83	11.72
WSH	6.44	6.91
HDD	0.58	0.00
NES	**12.37**	**0.12**
SVE	39.53	61.34
SWB	3.73	9.87
SRN	3.84	21.71
TMS	45.85	113.44
NWT	24.04	53.29
WSX	3.61	4.39
YKY	22.67	14.47

[491] DD24 Expenditure – Base Cost, pg.8, SOC297.
[492] FD24 Expenditure, pg.4, SOC309.
[493] FD24 Expenditure, pg.56, SOC309.

Water company	Implicit allowance at FD (£m)	Additional allowance at FD (£m)
AFW	19.17	8.71
BRL	5.51	0.00
PRT	1.81	2.38
SEW	18.99	32.15
SSC	6.42	4.88
SES	0.83	0.00
Total	**256.24**	**345.37**

Source: Ofwat, PR24 final determinations: CA148 Network reinforcement cost adjustment model (**FD24 Network Reinforcement Model**), December 2024, SOC320. NWL SOC Databook.

480. Our updated forecast looks at individual projects we expect to undertake during 2025 to 2030, and we now have much more certainty about what these schemes will be than when we created BP24 in summer 2023. This forecast is as follows.

FIGURE 39 - FORECAST COSTS FOR NETWORK REINFORCEMENT

£m	2025/26	2026/27	2027/28	2028/29	2029/30
North East	3.114	2.752	2.401	2.795	2.519
Essex & Suffolk	2.323	1.516	1.175	1.507	1.185
Boreham Booster	10.412	10.412	10.412	-	-
Total	15.849	14.680	13.988	4.302	3.704

Source: NWL forecasts (2022/23 prices). Detail provided in NWL SOC Databook.

481. These forecast costs of £52.5m are much higher than our BP24 forecast (£12.5m) and the implicit allowance under Ofwat's FD24 (£12.4m), mostly driven by the Boreham booster scheme. We do not expect to be able to charge new developers for these costs, which would be classed as network reinforcement rather than requisitions. At the time of the business plan, the working assumption had been that at least some of this expenditure could be recovered from developers.

482. Under Ofwat's FD24 approach these costs would have been allowed subject to a PCD that will claw back these allowances if they are not used on network reinforcement. Ofwat notes that the PCD was introduced "in response to additional network reinforcement cost adjustment claims received in draft determination responses".[494]

483. We note that Ofwat describes queries in FD24 to understand the evidence and planned developments underpinning our proposed need for investment.[495] We did not receive these queries so we do not know exactly what was requested, but we can provide more evidence on the specific projects if required.

484. Ofwat applied no adjustment for past delivery or efficiency for our costs, but we understand that it might have done so if this updated forecast of costs had been provided and used. As our base and enhancement costs for water are both efficient under Ofwat's assessment we do not think there is a need for further efficiency assessments (that is, this could be treated as a shallow dive).

[494] FD24 Expenditure, pg.27-62 - Section 2.2, SOC309.
[495] FD24 Expenditure, pg.58, SOC309.

5.4.4.1 Considerations for the CMA

485. We ask the CMA to apply the cost adjustment process Ofwat used at FD24 to increase our allowance for network reinforcement from £0.12m to **£40.1m**[496] to reflect the updated forecasts for water network reinforcement (particularly the costs of the Boreham booster scheme). This is calculated in the same way as the Ofwat FD adjustment, as £52.5m forecast minus £12.4m implicit allowance.

486. We accept that this omission was our error, and that we should have included these costs in BP24 and in DDR. Nevertheless, this error should now be corrected to reflect these efficient costs.

487. As Ofwat recognises in FD24, this will help to support economic growth and help to facilitate the Government's target to build 1.5 million new homes over the next five years.[497]

5.5 RESTORING THE FLEXIBILITY IN THE TOTEX FRAMEWORK

488. At PR24 Ofwat has formally introduced the concept of PCDs to enhance the scope of customer protection linked to company plans and funding decisions regarding activity in AMP8. We support the principle of protecting customers, and we proposed PCDs in our business plan for most of our enhancement cases.

489. However, as set out in this section, the use of PCDs in the context of base expenditure allowances creates significant concerns for our ability to adopt an optimised and flexible approach to the management and maintenance of our assets. The base PCDs at FD24 effectively "ring fence" 38% of our implicit base capital expenditure allowances to deliver specific outputs, limiting our flexibility to target this expenditure at the areas of highest risk. This is less efficient and reduces our ability to manage wider risks.

490. In Section 4.4 and Section 5.4.2.2 we explain why the base cost adjustment allowances at FD24 do not sufficiently fund these activities. Funding these activities would significantly improve this position and reduce this pressure on base expenditure.

491. However, PCDs – particularly those set for base expenditure - reduce flexibility to deliver in an efficient way. In Section 5.5.2, we propose more flexibility in the targeting of the PCD for mains renewal, as this could deliver better outcomes than restricting this to the mains with the worst asset condition.

492. In Section 5.5.3, we propose that instead of setting specific targets for each component of our lead replacement programme (that is, replacing internal supply pipes, external supply pipes, and communication pipes), the PCD should allow flexibility to over-deliver on some elements and under-deliver on others. As lead pipe replacement depends on customers and other stakeholders identifying pipes, this allows us flexibility to respond to all lead pipes we identify (rather than being restricted by constraints in the PCD). We also propose that PCDs should allow over delivery in this area, to allow flexibility to accelerate this programme to meet DWI requirements and ambition.

5.5.1 The impact of PCDs on flexibility

493. Ofwat formally introduced the concept of PCDs in PR24 as a means to hold companies to account for delivering during AMP8. The PCDs make an explicit and direct link between price control allowances and the delivery of

[496] Calculated as £55.1m total forecast, minus the £12.4m implicit allowance.
[497] FD24 Expenditure, pg.4, SOC309.

outputs or outcomes that are funded by those allowances. If the outputs specified by the PCDs are not delivered, Ofwat will reduce allowances at the end of the period through PCD non-delivery payments at unit rates specified in advance. Some PCDs also have a timely delivery incentive attached to them, with companies receiving on-time delivery rewards and paying late delivery penalties if there is a delay.

494. This means that allowances linked to PCDs are effectively conditional upon the company meeting certain requirements, including delivering in line with the delivery profile set out by Ofwat. Ofwat has applied customer protection measures and performance commitments in past price controls (particularly PR19) that have a broadly similar effect to PCDs.

495. Ofwat's general approach (with some exceptions) is to apply PCDs for "material investments which are not protected by a gated process", with materiality defined by a threshold of 1% of the companies relevant totex.[498] This means that Ofwat has applied PCDs to most of our enhancement activities. We support the principle of customer protection through PCDs, and although we do still have some concerns with the specification and detail of some of those PCDs, we do not seek to challenge any other PCDs in this redetermination.

496. However, Ofwat has also set PCDs that relate to specific activities intended to be funded through base expenditure allowances, including activities related to asset risk management (see Figure 40). This is not consistent with Ofwat's statement that the PR24 "regulatory regime gives companies flexibility as to how they invest their base expenditure allowances to deliver good outcomes for customers and the environment".[499]

497. Base costs are "routine, year-on-year costs, which companies incur in the normal running of the business to provide a base level of service to customers and maintain the long-term capability of assets".[500] Base cost allowances have typically not been ring-fenced for particular activities or purposes. Instead, companies have had the flexibility to target their expenditure in line with their respective strategies, and in response to the real-world scenarios they face. Ofwat's use of PCDs in connection with the base allowance greatly reduces that flexibility during AMP8.

498. In FD24 approximately 38% of our FD24 implicit allowances for base capital expenditure (including infrastructure renewals expenditure expensed in year) for the wholesale water service is now effectively ring-fenced for activity in three areas: mains renewals, metering and network reinforcement.[501] On average across the sector, base PCDs in these areas capture 34% of the base capex allowance (see Figure 41).

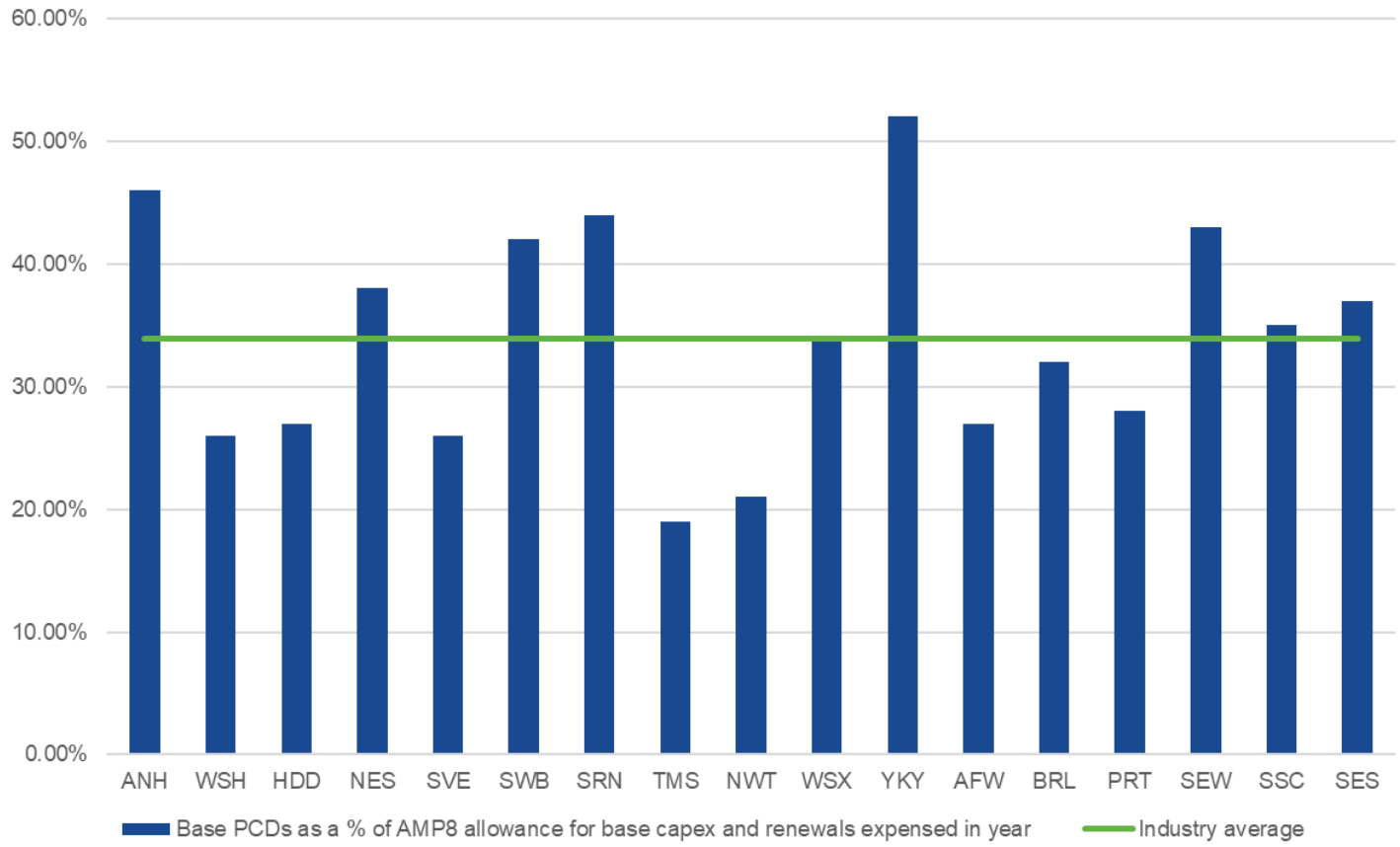
FIGURE 40 - NORTHUMBRIAN WATER PCDS FUNDED THROUGH BASE COST ALLOWANCES

PCD	Allowance ring-fenced for the PCD
Mains Renewals	£170.24m
Meter Replacement	£64.35m
Network reinforcement	£12.23m
Total	£246.81m

Source: NWL analysis of Ofwat's base PCDs model[502] and Supply and Demand PCDs model[503]. NWL SOC Databook.

[498] Ofwat, PR24 final determinations: Price control deliverables appendix (**FD24 Price Control Deliverables**), February 2025, pg.36, SOC310.
[499] FD24 Expenditure, pg.109, SOC309.
[500] Ofwat PR24 Base Cost Assessment 2021, pg.2, SOC369
[501] Ofwat has grouped the meter replacement PCD along with other meter-related PCDs into a broader category of PCDs labelled as "Water enhancement – Supply and Demand PCDs". See FD24 Price Control Deliverables, pg.149, SOC310. However, the PCD for meter replacement is expected to be funded through base expenditure allowances, and so we have referred to it in this SoC as a "base PCD".
[502] FD24 Base PCDs, SOC323.
[503] Ofwat, PR24 final determinations: CA107 Water Supply and Demand Balance PCDs (**FD24 Supply and Demand Balance PCDs**), January 2025, SOC324.

FIGURE 41 - PERCENTAGE SHARE OF AMP8 BASE CAPEX ALLOWANCE RING-FENCED FOR BASE PCDS (MAINS RENEWALS, METERING AND NETWORK REINFORCEMENT)

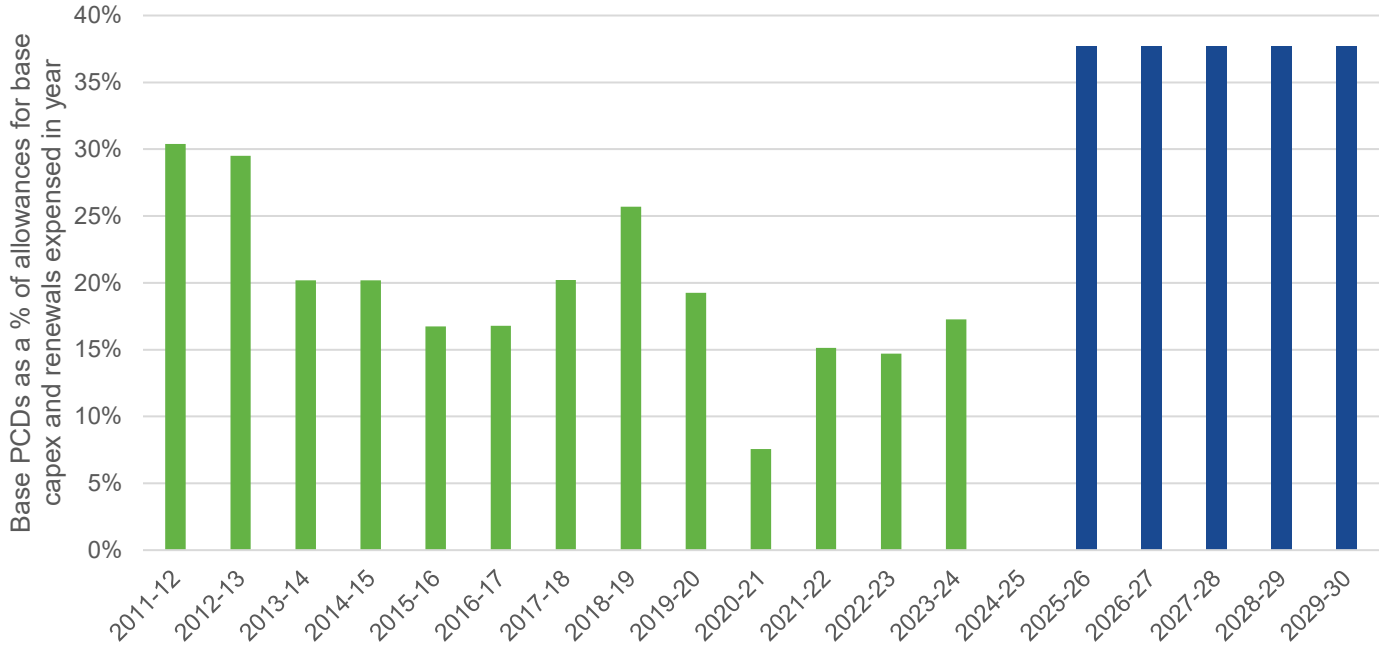


Source: NWL analysis of AMP8 capex allowance from Ofwat's FD Opex capex split model[504], base PCDs model[505], supply and demand balance PCDs model[506]. NWL SOC Databook.

499. This does not reflect the relative contribution that these 'protected' asset classes make to long-term risk to customer outcomes and the environment. For example, our resilience framework shows that the criticality of civil structures and service reservoirs is higher than that for water mains or meters.[507] However, as a result of the need to comply with the requirements of the PCDs expenditure on these three areas will now take up a much higher share of our base capex allowance than they have in previous years so reducing the funding available to address all other capital maintenance requirements. Figure 42 shows the historical share of base expenditure that we have spent on these areas, compared to the volumes we will need to undertake as per FD24.

[504] Ofwat, PR24 final determinations: CA22 Opex capex split model (**FD24 Opex Capex Split Model**), December 2024, SOC495.
[505] FD24 Base PCDs, SOC323.
[506] FD24 Supply and Demand Balance PCDs, SOC324.
[507] BP24 Appendix A3-21 Asset Health, sections 4.1.1 and 4.1.2, SOC045

FIGURE 42 - NORTHUMBRIAN WATER'S HISTORICAL SHARE OF BASE CAPEX ALLOWANCE SPENT ON MAINS RENEWALS, METERING AND NETWORK REINFORCEMENT VS AMP8 COMMITMENT



Source: NWL analysis of historical base capex allowance and actual spend on renewal activities and network reinforcement. NWL SOC Databook.

500. The ring-fencing of base cost allowances for mains renewals, metering and network reinforcement reduces our ability to prioritise base expenditure on areas that need investment during AMP8 and makes it harder to deliver the long-term outcomes that customers need. Given the concerns we have already identified regarding the unsustainably low level of funding for capital maintenance (see Section 4.2.1), the addition of the PCDs will mean even more pressure on an already tight base expenditure allowance. That is, if we must spend more in these areas, our operational risk in other areas will increase as we must spend less.

501. In practice, without additional funding to achieve an additional performance output, we would need to redirect investment from other parts of our asset management plan, so reducing operational resilience (by increased risk of failure) in other parts of our asset base. Increases in risk will impact on others – for example, reductions in funding for water treatment could increase water quality risks; reductions in funding for large consequence failures could increase the risk of large mains bursts or other safety issues. The level of risk in our operations will increase, and our initial assessment is that this risk is not acceptable.

502. In addition to this, an optimised base expenditure plan can choose the options with the maximum benefits and lowest costs to customers – for example, water efficiency can be delivered through meters, leakage reductions, and changes in customer behaviour (and including other programmes such as lead replacement can support us in identifying the most efficient outcomes). This is particularly relevant to interventions on water mains too, as disconnected programmes are likely to create large disruption (street works) and additional costs from multi-permitting requirements. Introducing a requirement for a set output, at a set point in time, reduces the opportunities for optimising the plan. This means that this approach is less efficient.

503. This approach of expecting companies to deliver a certain volume of activity on specified asset types is not in line with good asset management practice. Good asset managers will consider the risks to customers and the environment across the breadth of their assets and focus resource on where it is needed most. Any approach that unduly restricts our flexibility to optimise and effectively manage our asset risk is likely to deliver worse outcomes for customers, both in the short and longer term.

504. We consider that the changes we propose to cost allowances for mains renewal (Section 4.4) and meter replacements (Section 5.4.2.2) should address these issues in practice, if not in principle. However, there are two areas where a lack of flexibility in the structure of the PCDs themselves have an unintended impact on flexibility, which leads to inefficiency – the requirement for the mains renewal PCD to target only condition grades 4 and 5; and the inflexibility in substituting between categories for the lead replacement PCD.

5.5.2 Flexibility in the mains renewal PCD

505. Ofwat set three components to its mains renewals PCD at FD24:

- The "**base wholesale water model funded renewals**" component. This is based on Ofwat's estimate that the wholesale water base models already include an implicit allowance that allows companies to replace 0.3% of water mains per year.
- The "**base asset health adjustment renewals**" component. This is based on the efficient delivery of a further 0.13% of water mains per year, for which Ofwat allowed an uplift to base expenditure of £51.3m.[508]
- The "**enhancement leakage renewals**" component. This is based on the "mains renewals leakage allowance" set at FD24 in a separate leakage enhancement model and requires an additional 0.004% of mains replaced per year.[509]

506. In Section 4.4, we explain why the balance between these first two components is not correct and proposed that the "base wholesale water model funded renewals" component should be set to replace 0.15% of water mains per year (as this more accurately reflects the implicit allowance from base expenditure models). The "base asset health adjustment renewals" component would then be set to replace the remaining 0.28% of water mains per year, so summing to the same total as in FD24.

507. However, we also have one concern on flexibility with the PCD itself. We propose changes to the "base asset health adjustment renewals" component to allow more flexibility to target mains more efficiently.

5.5.2.1 Overview of the issue

508. FD24 set a "base asset health adjustment renewals" PCD to replace an additional 0.13% a year of mains that are in the lowest condition grades (i.e. condition grades 4 and 5).[510] This PCD will return the funding linked to this deliverable to customers if we do not deliver that level of activity.

[508] FD24 Renewal Rates, "base adjustment" sheet, SOC315.
[509] Ofwat, PR24 final determinations: CA34 Water leakage enhancement expenditure model (**FD24 Leakage Enhancement Model**), December 2024, "allowance" sheet, SOC494; and FD24 Base PCDs, worksheet "NES", SOC323.
[510] FD24 Price Control Deliverables, Section 3.1.1, SOC310.

509. The condition of mains is an important driver of risk, but focusing only on mains that are in the lowest condition as defined by Ofwat is likely to be more expensive and less effective at reducing bursts and leakage than a less prescriptive approach (which delivers the same replacement rate).

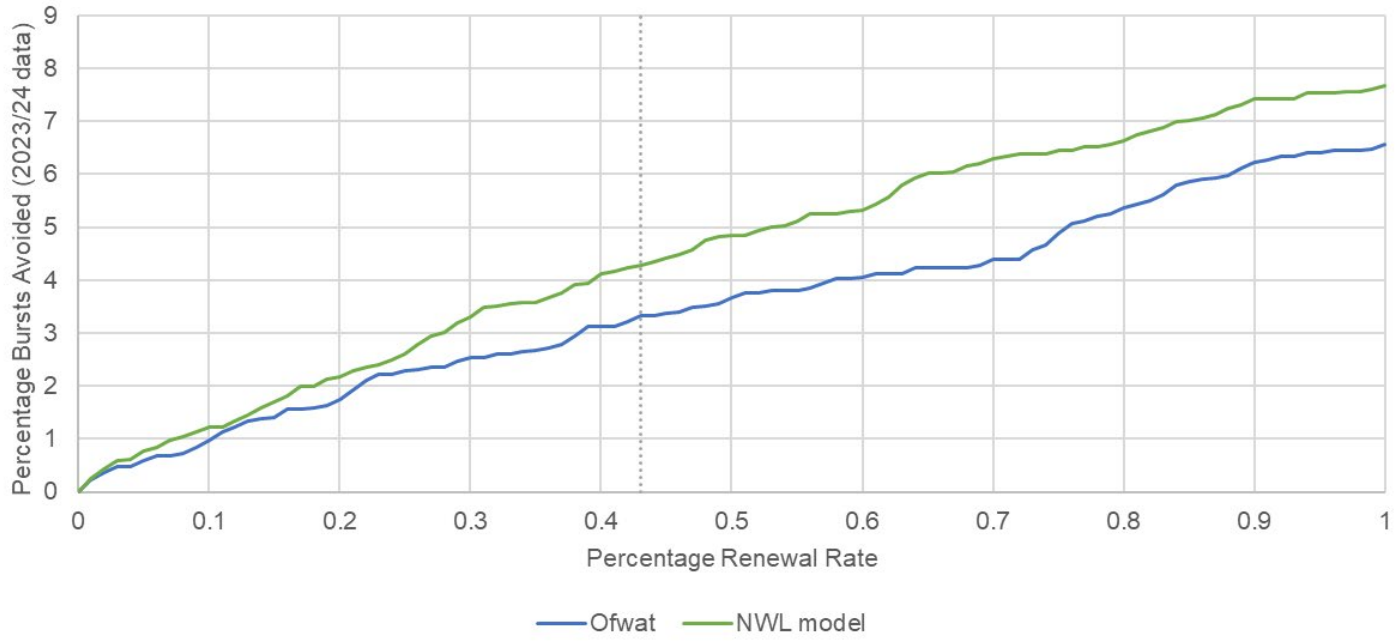
510. The pipe condition grades as defined by Ofwat[511] do not necessarily reflect the actual condition of the mains and failure risk, because:

- Ofwat's definition only looks at the last 5 years of history and is not necessarily representative of the long-term performance of the pipes. Our own models contain 18 years of historical data for mains. We expect these to be more informative in predicting asset performance and failure risk because of the richer and longer-time period of data that they hold;
- Ofwat's definitions do not take into account different deterioration rates. For example, some materials have much steeper deterioration curves than other materials and prioritising these materials, even at a lower condition grade, could reduce bursts over a long period compared to slower deteriorating assets. Deterioration rates can also vary for other reasons, such as ground conditions. Our asset models do capture these factors; and
- Ofwat's definitions are vulnerable to misleading results. For example, a small number of failures on a short length of main could meet the definition of the lowest condition grade, even if that is not representative of the long-term performance risk associated with that main.

511. We have modelled the impact of targeting our main renewal activity in line with the PCD requirements and compared that against a more optimal strategy based on our own risk modelling (see Figure 43 below).

[511] Ofwat, PR24 Final Methodology: Submission table guidance - section 3: Costs (wholesale) – water (**FM24 Data Table Guidance Section 3**), August 2023, pg.120, SOC508.

FIGURE 43 - MAINS BURSTS AVOIDED FROM DELIVERING OFWAT'S PCD COMPARED TO A REPLACEMENT STRATEGY BASED ON OUR MODELS



Source: Comparison of cumulative benefits of pipe replacement using Ofwat's vs NWL's prioritization. NWL SOC Databook.

512. Our analysis suggests that delivering an overall renewal rate of 0.43% a year targeted on the highest risk mains based on our own risk modelling could reduce bursts by 28% more than delivering Ofwat's PCD (i.e. 0.3% a year across all mains funded through base expenditure and an additional 0.13% focused on mains in condition grades 4 and 5).

513. Bursts are not the only benefit that should be targeted from mains renewal schemes. For example, iron mains are prone to corrosion and can lead to issues with appearance contacts which can be avoided through their replacement. We should also consider these potential benefits when selecting mains renewal schemes.

514. Furthermore, Ofwat has specified that in order for the asset health adjustment PCD to be met, we would need to replace pipes that were identified by us as condition grades 4 and 5 at the time of DD24.[512] Replacement of any pipes that have turned into condition grade 4 or 5 during AMP8 due to deterioration would not count towards meeting the asset health adjustment PCD, even if it is more efficient and beneficial to target those pipes for replacement. Again, this does not appear a sensible restriction in the context of good asset management practice, or an outcomes-based approach to regulation.

515. We explained this proposal in our DDR,[513] but Ofwat does not explain if it considered this in its FD24 decisions.

[512] FD24 Price Control Deliverables, pg.25, SOC310.
[513] NWL DDR, pg.94 - para. 366, SOC191.

5.5.2.2 Consideration for the CMA

516. We request the CMA remove the condition set in FD24 that the additional "base asset health adjustment renewals" component can only be used to target replacement of mains that were identified by us as condition grade 4 and 5 at the time of DD24. We also ask the CMA to reflect the changes in Section 4.4 in the mains renewal PCD, by updating the km of mains in the "base wholesale water model funded renewals" and "base asset health adjustment renewals" categories.

5.5.3 Flexibility in the lead replacement PCD

517. Lead replacement programmes seek to identify where lead pipes are still being used as supply pipes and communication pipes – and then replace these. We target this activity on specific groups of customers, including vulnerable customers (such as replacing these for schools) and specific geographic areas (where there is, for example, a high concentration of older properties). This relies on identifying customers with lead pipes, either through finding households who volunteer or actively targeting households, and the expected volumes are based on predictions about the number of remaining pipes – we cannot know exactly how many there are, until these are identified.

518. The PCD that Ofwat set at FD24 does not allow for either additional activity, or flexibility between the different components of lead replacements. Instead, this requires the delivery of specific amounts of each activity in three categories:

- Internal supply pipes;
- External supply pipes; and
- Communication pipes.

519. Any under delivery in one of these three categories would mean that funding is clawed back from the PCD (even if this were offset by additional activity in another category). This does not reflect the challenges of forecasting exactly which lead pipes will be uncovered, and so is likely to lead to some funding being returned to customers.

520. At DDR, recognising the significant level of ambition in our lead replacement programme,[514] we said that we were not convinced that we could deliver a higher option than our business plan because the supply chain is not sufficient to deliver this work and will take time to increase. However, the DWI had expressed concerns about the sector's ambition on this before 2030. We wanted flexibility in case more ambition was possible:

> However, this might change before 2030 and more ambition might be possible. Ofwat should reflect the DWI's concerns by setting a symmetric PCD which allows additional funding if more lead schemes are delivered in the 2025-30 period (at the PCD unit rates). This would allow lead replacement to accelerate more quickly if this were possible. We have already shown that customers support and would be willing to pay for a higher level of investment here, if possible, and DWI have said that this will need to increase

[514] In our DDR, we described our lead replacement programme as the most ambitious in the sector: NWL DDR, pg.147, SOC191. This is no longer true, as allowances for other companies increased at FD24.

substantially in future to meet long-term targets (we also described this in our long-term delivery strategy).[515]

521. Ofwat's PCD does not reflect these concerns about flexibility.

5.5.3.1 Considerations for the CMA

522. We ask the CMA to consider two changes to the Ofwat PCD which would help to drive flexibility and more effective delivery of our lead programme:

- a change to this PCD to allow substitution between the different components of communication pipes, internal and external supply pipes. It seems likely that we will find a different distribution between these components when we discover lead pipes in practice. It would be sensible to allow for the possibility that we do more of one type of activity and less of another, rather than restricting our activity once we have met the individual quotas for different types of lead pipes; and
- a change to this PCD to create a symmetric incentive that allows a higher level of delivery with additional funding if more lead schemes are delivered in the 2025-30 period (at the PCD unit rates), as we proposed in our DDR. This reflects the DWIs concerns about the potential for increasing ambition in-period. We do not see a downside for customers in doing this, as these lead replacements will need to happen in future periods anyway; and there are greater benefits in replacing these earlier (and customers support an accelerated profile). If it is possible to do more on lead replacement, we should therefore do so.

5.6 ENSURING THAT THE SERVICE INCENTIVE FRAMEWORK CANNOT DELIVER EITHER EXPECTED LOSSES OR WINDFALL GAINS

5.6.1 Outturn Adjustment Mechanism

523. In this section we set out:

- the background to the introduction of the OAM, including its timing (see Section 5.6.1.1);
- Ofwat's rationale for the inclusion of a deadband (see Section 5.6.1.2);
- the impact of the deadband on the risk mitigation properties of the OAM (see Section 5.6.1.3);
- the limited benefit of the deadband in addressing the specific concerns raised by companies in response to the OAM (see Section 5.6.1.4);
- reflections on the balance of risk in the outcomes package (see Section 5.6.1.5); and
- considerations for the CMA in making its redetermination (see Section 5.6.1.6).

5.6.1.1 Background

524. Following the receipt of representations on DD24, in October 2024 Ofwat issued a stand-alone consultation on the introduction of an OAM (**OAM Consultation**).[516] This was in response to feedback from companies that the outcomes package set out by Ofwat at DD24 was not balanced and could lead to large underperformance payments across the sector.

[515] NWL DDR, pg.147, SOC191.
[516] Ofwat, PR24: Consultation on outturn adjustment mechanism (**Ofwat PR24 Outturn Adjustment**), 15 October 2024, SOC373.

525. Ofwat said in the OAM Consultation that it was considering changes to its DD24 position on outcomes, and that its aim was to "set an outcomes package that is balanced, such that an efficient company can be expected to earn net payments close to zero for a typical five-year period".[517] However, it recognised that even with those changes, there remains a risk that the outturn returns from outcomes for the sector is skewed upwards or downwards.[518]

526. Given this residual risk, Ofwat proposed to introduce the OAM. The main aim of the OAM (as set out in the OAM Consultation) in its original form was to "set incentives so that the impact of outcomes on the base allowed return at the median is zero", and the intended effect of the mechanism was to "ensure that, across the sector, there is a spread of out- and under-performance against the base allowed return, minimising the risk of systematic upside or downside skew in the calibration of the outcomes package".[519]

527. Under the OAM Consultation, Ofwat explained that it proposed to make an end-of-period adjustment to the return on regulatory equity for all companies.[520] The size of this adjustment would be the same for all companies and would be determined as the difference between zero and the outturn RoRE from ODI payments for the median company. This adjustment would effectively reset the outturn RoRE for the median company to be zero and would ensure that all companies above the median would earn a positive RoRE from ODIs and all companies below the median would earn a negative RoRE from ODIs. Ofwat said it considered that it would make the adjustment by reference to the median company as "the benchmarks for outcomes are set with reference to the median company".[521]

528. In FD24, taking account of feedback received from stakeholders, Ofwat decided to apply a modified version of the OAM. The most significant modification is the inclusion of a deadband of +/-50 basis points before the OAM is triggered. Ofwat said that the OAM is "intended to trigger in the rare circumstance that there is a significant shift away from the anticipated sector level returns. If the median performance of the sector passes an equity return trigger threshold of +/-50 basis points, we will apply an adjustment to all companies calculated as the difference between the median OAM benchmark and the trigger threshold."[522] That is, the reset is not to zero, but to the +/-50 basis points deadband.

529. Ofwat made other changes to the design of its proposed OAM in response to feedback received, in particular moving to an in-period adjustment rather than an end of period adjustment. [523] We agree with those changes and our concerns with the OAM are limited to the application of the deadband.

5.6.1.2 Ofwat's rationale for the addition of a deadband

530. In FD24 Ofwat provided some context for its decision to apply a deadband. It said that it had sought to adapt the mechanism so that "efficient companies should be able to earn the base return, while mitigating any downsides of the option included in our consultation".[524]

[517] Ofwat PR24 Outturn Adjustment, pg.6-7, SOC373.
[518] Ofwat PR24 Outturn Adjustment, pg.7, SOC373.
[519] Ofwat PR24 Outturn Adjustment, pg.2, SOC373.
[520] Details of the OAM mechanism that Ofwat proposed are set out at Ofwat PR24 Outturn Adjustment, SOC373.
[521] Ofwat PR24 Outturn Adjustment, pg.2, SOC373.
[522] FD24 Risk and Return, pg.21, SOC306.
[523] Changed from end of period to in period, separated water & wastewater and used average of the middle three or four companies. Further details are set out in FD24 Risk and Return Appendix, pg.15 onwards, SOC307.
[524] FD24 Risk and Return Appendix, pg.16, SOC307.

531. Ofwat noted that it had received a mixed response to the OAM, with 18 respondents agreeing with introduction of a mechanism[525] and five respondents saying that the mechanism should not be adopted.[526] We were supportive of the introduction of the OAM for PR24, given the asymmetry in the ODI package set out at DD24. Ofwat said that the concerns expressed in responses included:

- the mechanism would increase "the challenge for poor performing companies to raise necessary levels of finance (because half the companies would always be in penalty under the mechanism, irrespective of performance)";
- the risk of "diluting incentives that could lead to poorer performance"; and
- the mechanism "may reduce incentives for companies to collaborate to share best practice as the mechanism would more strongly incentivise companies to outperform their peers".[527]

532. Ofwat said that three companies suggested that the OAM adjustment "should only be made as a failsafe", while other responses noted that "ideally the mechanism should not operate".[528] Ofwat said that it had revised the mechanism to introduce a deadband in recognition of these points "so that it would be triggered only when there is a clear difference in outturn returns across the sector than expected" and that this is consistent with the "intention proposed by some responses of the operation of the OAM as a failsafe mechanism".[529]

5.6.1.3 The deadband significantly weakens the risk protections from the OAM

533. The addition of a deadband is a significant weakening of the risk protection that Ofwat intends the OAM to provide. Ofwat's stated purpose for the introduction of the OAM was to manage the risk of a residual bias (upside or downside) in the calibration of the PR24 outcomes package and to mitigate the "risk of systematic upside or downside skew in the calibration of the outcomes package".[530] Without a deadband, the OAM would have avoided a skewed outturn by adjusting every company's returns such that the median performing company earns zero returns from ODIs, with better-performing companies earning positive returns and the rest earning negative returns.[531]

534. The addition of a deadband at FD24 means that the OAM offers significantly less protection against the risk of a systematic upside or downside skew in the calibration of the outcomes package than originally intended by Ofwat. In particular:

- an OAM adjustment would only be made if the median performance is outside the deadband, i.e. below -0.5% or above 0.5% RoRE. No adjustment will be made if the median performance is within this deadband. This means that there could be a sizeable upward or downward outturn skew of up to 50 basis points of RoRE before the OAM is triggered. This is potentially worth up to ~£15m per year for us (or £75m across the AMP8 period) from the impact of the deadband;

[525] NWL was supportive, with recommendations for improvement: Northumbrian Water Limited, Northumbrian response to the PR24 consultation on the outturn adjustment mechanism (**NWL Response to PR24 OAM**), 04 November 2024, SOC491.
[526] FD24 Risk and Return Appendix, pg.12, SOC307.
[527] FD24 Risk and Return Appendix, pg.13, SOC307.
[528] FD24 Risk and Return Appendix, pg.13, SOC307.
[529] FD24 Risk and Return Appendix, pg.16, SOC307.
[530] Ofwat PR24 Outturn Adjustment, pg.2, SOC373.
[531] In FD24 Ofwat changed its definition of the median for the purposes of the OAM so that it is the average of the middle three or middle four companies.

- even when an adjustment is made, the size of the adjustment would be determined as the difference between the outturn median and the relevant trigger threshold (i.e. +/-50 basis points). This means that the OAM will only adjust returns to the extent needed to bring the median performance to the level of the threshold (which could be -50 basis points or +50 basis points). This means that even when an OAM adjustment is triggered, there would remain an upward or downward outturn skew of up to 50 basis points of RoRE; and
- the deadband and adjustment is intended to be applied within period on an annual basis. This means that any downside or upside skew in the overall outcomes package could be allowed to persist over the entire AMP.

535. Ofwat says that its expectation is that the OAM with the deadband:

> would trigger infrequently, and in a limited number of circumstances. If it had been in place it would not have triggered in the 2015-20 period and it would have triggered once for the wastewater service and twice for the water service in 2020-24. [532]

536. This statement highlights an inherent tension in the way Ofwat has decided to apply the OAM. On the one hand, the OAM is being introduced to mitigate the risk that the outcomes package is systematically biased upwards or downwards. At the same time, Ofwat has revised the design (by introducing the deadband) so that OAM is not triggered unless there is a relatively large outturn skew in either direction.

537. We recognise that there is a difference between ensuring that the outcomes package is balanced in expectation (at the time of setting the price control) and ensuring that the outturn performance across the sector is balanced in each year. It is entirely possible that an outcomes package that is balanced in expectation could see more than half the companies earn a reward or penalty in any year. That said, if we were to see outturn imbalances of up to 50 basis points a year at the median, that would strongly suggest that the outcomes package was not balanced to start with.

538. If the OAM had been applied during AMP7 without the deadband, we estimate that the OAM would have resulted in an upward adjustment in every year of AMP7 across both water and wastewater controls and would have gone some way towards building confidence amongst investors and customers that the regulatory regime is well-calibrated and is encouraging performance improvements. We show our analysis in Section 5.6.1.5 below.

5.6.1.4 The deadband does not address the concerns raised about the OAM

539. Ofwat said that it had revised its proposed OAM, including by adding a deadband, in order to mitigate "any downsides of the option included in our consultation". [533] We do not believe that the deadband mitigates the concerns raised by respondents to Ofwat's OAM consultation (as summarised by Ofwat).

540. One of the concerns acknowledged in Ofwat's FD24 is that the mechanism would increase "the challenge for poor performing companies to raise necessary levels of finance (because half the companies would always be in penalty

[532] FD24 Risk and Return Appendix, pg.17, SOC307.
[533] FD24 Risk and Return Appendix, pg.16, SOC307.

under the mechanism, irrespective of performance)".[534] While the application of a deadband means that there are plausible scenarios in which fewer than half of the companies face penalties (post-OAM), these scenarios only materialise in the event that the median company has earned positive returns from ODIs. As set out further below (see Section 5.6.1.5) there is little evidence to support a view that this outcome is likely – indeed our analysis suggests the opposite. In all other circumstances, at least half (and potentially more than half) of the companies in the industry will earn negative returns from ODIs even with the deadband in place. As such, the deadband does not address the financing challenge.

541. We do not agree with concerns that the OAM could dilute incentives that could lead to poorer performance. Instead, the OAM (when it is triggered) is likely to harness the power of comparative competition between companies to drive performance improvements. The competitive pressure created by the OAM provides strong incentives for companies to improve performance by outperforming their peers as rewards and penalties are calibrated with respect to the performance of the median company (or companies). This competitive pressure would be diluted by the application of a deadband as any adjustment would apply less frequently.

542. Another concern listed by Ofwat is that the mechanism "may reduce incentives for companies to collaborate to share best practice as the mechanism would more strongly incentivise companies to outperform their peers".[535] As set out above, we agree that the OAM would strongly incentivise companies to improve their performance relative to other companies. Indeed, comparative competition is a relatively well-established feature of Ofwat's regulatory framework with companies already facing strong incentives to outperform their peers, e.g. on costs through Ofwat's benchmarking models, and on ODI payments under certain PCs (e.g. C-MeX). Despite this, Ofwat has not put forward any evidence to support the argument that comparative competition reduces incentives for companies to collaborate and share best practice – or that the deadband would make any contribution to mitigating this.

543. Finally, Ofwat refers to the preference expressed by a small number of companies for the OAM to act as a failsafe mechanism, and that the use of a deadband is consistent with this view of the OAM. [536] We believe the deadband makes the OAM less effective as a failsafe mechanism because it allows a significant outturn bias (in either direction) to materialise without being triggered.

5.6.1.5 The balance of risk in the outcomes package

544. Ofwat's own analysis concludes that, even after all changes made between draft and final determinations are taken into account, the FD24 outcomes package is likely to be biased downwards in expectation, finding that "the expected payment from the outcomes package is -0.20% appointee RoRE for the median efficient company".[537] This estimate uses the PR24 PCL as the "anchor point", i.e. the assumed expected performance of the median company.

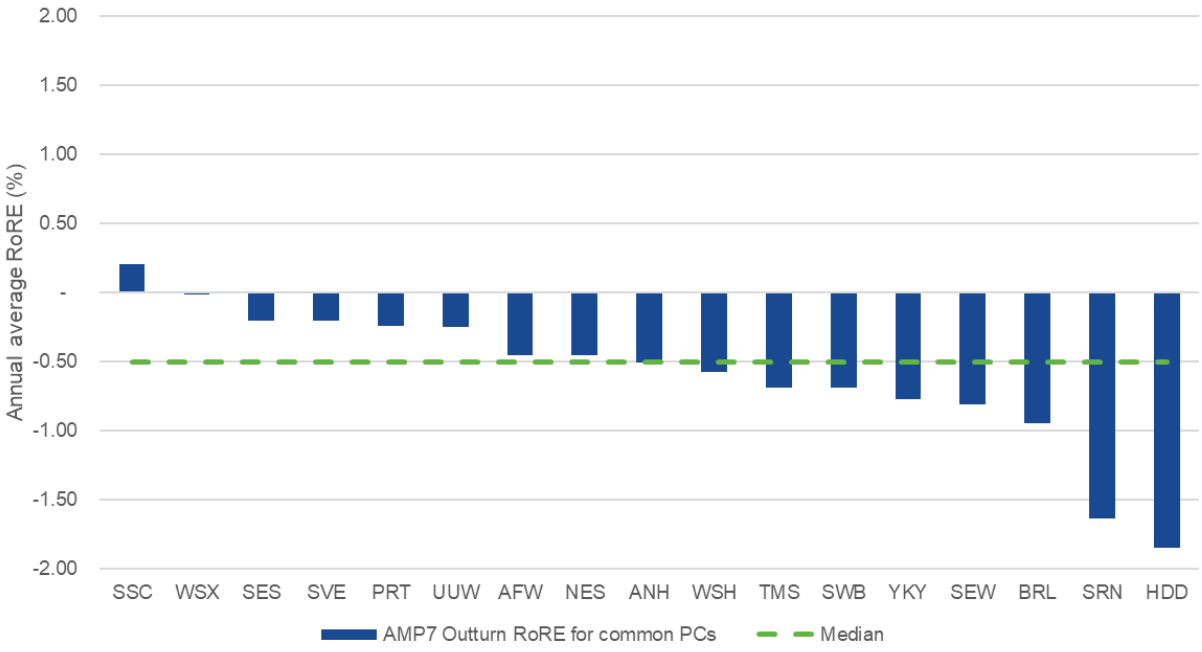
545. Ofwat then tested the sensitivity of its RoRE estimates by using different anchor points. Three out of four scenarios tested resulted in negative expected payments from the outcomes package. Ofwat highlights one of those

[534] FD24 Risk and Return Appendix, pg.13, SOC307.
[535] FD24 Risk and Return Appendix, pg.13, SOC307.
[536] FD24 Risk and Return Appendix, pg.13, SOC307.
[537] Ofwat, PR24 final determinations: Outcomes approach to risk modelling appendix (**FD24 Outcomes Approach to Risk Modelling**), December 2024, pg.2, SOC468.

scenarios, i.e. the one that used PR24 business plan projections as the anchor point, taken along with its baseline scenario as providing a reasonable range for "what might happen at PR24".[538] Under this scenario, the expected payment from the outcomes package is negative 18 basis points for the median company, which is broadly similar to Ofwat's base estimate.[539]

546. As set out in Figure 44, data from the first four years of AMP7 show that industry-wide performance on common PCs has seen a significant downside skew, with the median company facing underperformance payments of 50 basis points per year in RoRE terms.

FIGURE 44 - AMP7 PERFORMANCE TO-DATE ON COMMON PCS (2020-2024)

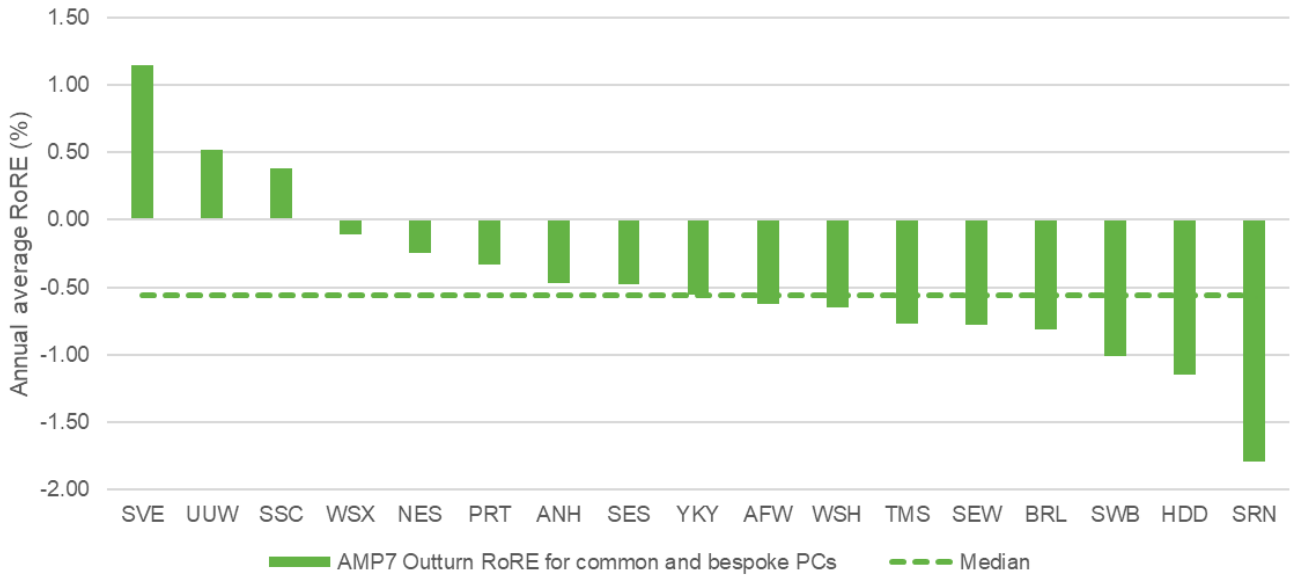


Source: NWL analysis of Ofwat data on ODI payments. NWL SOC Databook.

547. A similar picture emerges if we were to include bespoke PCs in the analysis (see Figure 45). While a small number of companies have earned positive returns in aggregate, the picture across the sector remains skewed to the downside, with the median company facing underperformance payments of 56 basis points in RoRE terms.

[538] FD24 Outcomes Approach to Risk Modelling, pg.21, SOC468.
[539] FD24 Outcomes Approach to Risk Modelling, pg.22, SOC468.

FIGURE 45 - AMP7 PERFORMANCE TO-DATE ON COMMON AND BESPOKE PCS (2020-2024)



Source: NWL analysis of Ofwat data on ODI payments. NWL SOC Databook.

548. This outturn performance during AMP7 contrasts markedly with Ofwat's expectation at the time of setting PR19 price controls, where Ofwat said that it had set an outcomes package that allows "an efficient company to achieve its performance commitments on average".[540] In response to the CMA's PR19 provisional finding that the average company in the industry could expect a loss of between 10 and 20 basis points in RoRE terms from ODIs, Ofwat said "the CMA's expectation that ODI performance will be asymmetrically skewed downwards is incorrect and misunderstands the nature of risk around performance in the sector. As explained in this document, we do not expect negative ODI payments for an efficient company".[541]

549. We acknowledge that it is difficult for Ofwat to set an outcomes package that is balanced. However, the AMP7 experience suggests that forward-looking risk analyses are inherently vulnerable to uncertainty, and it is sensible to consider a range of plausible scenarios and assumptions before reaching a view on the overall balance.

550. For PR24, Ofwat's risk analysis considers a scenario that uses companies' "forecasts" or projections of performance set out in their business plans. Under this scenario, Ofwat finds that there could be an expected negative return from ODIs of 18 basis points in RoRE terms. In developing this scenario, Ofwat made adjustments to a small number (9%) of company projections to correct for what it believed could be optimism or pessimism bias built into company forecasts, following its own credibility checks by comparing the forecasts against recent out-turn performance during AMP7.[542]

551. We agree that it is reasonable for Ofwat to have considered whether company projections of performance as set out in business plans could suffer from bias. We believe there are good reasons to doubt whether these projections

[540] Ofwat, PR19 Final determinations: Overall level of stretch across costs, outcomes and allowed return on capital appendix (**FD19 Stretch Appendix**), December 2019, pg.25, SOC435.
[541] Ofwat, Reference of the PR19 final determinations: Risk and return – response to CMA provisional findings (**Ofwat PR19 Response Risk and Return**), 15 October 2024, SOC374.
[542] FD24 Outcomes Approach to Risk Modelling, pg.21, SOC468.

can be seen as reasonable forecasts of expected performance. Ofwat's business plan assessment process is a key driver for this.

552. At PR24, Ofwat's Business Plan assessment included a QAA, which considered the extent to which companies proposed stretching and ambitious performance levels during AMP8 (see Section 2.6.6). Companies that proposed stretching performance levels were eligible for material financial rewards of up to 30 basis points in RoRE terms. On the other hand, companies that were assessed as lacking in ambition could receive financial penalties of up to 30 basis points in RoRE terms.[543] In DD24 Ofwat found that most (10) companies had shown "sector leading" or "reasonable" levels of ambition in its proposals, and a further three had shown "sufficient" levels of ambition.[544] At FD24 Ofwat assessed updated proposals from the remaining companies and found that they had either fully or partially met its conditions for proposing ambitious performance levels for AMP8.[545]

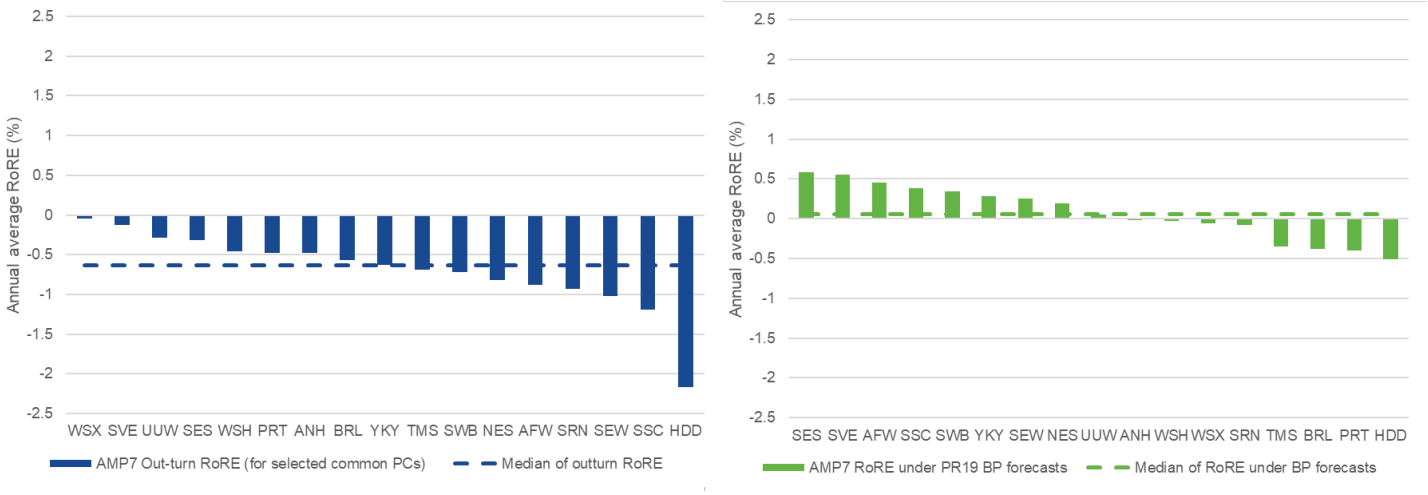
553. The application of the QAA means that companies were under strong financial incentives to put forward performance projections that might be perceived by Ofwat being ambitious and stretching. Given this context, we do not think it is reasonable to see projections submitted in business plans as central (or P50) forecasts of performance.

554. At PR19, Ofwat's assessment of company business plans also involved an assessment of the extent to which companies had proposed stretching performance commitments. Companies that were seen to have done well against its assessment were fast-tracked and received financial rewards.[546] As with the QAA at PR24, there are good reasons to believe that Ofwat's approach at the time encouraged companies to put forward optimistic forecasts of performance.

555. Figure 46 shows a comparison between the outturn performance in RoRE terms in the first four years of AMP7 and the performance that would have been achieved in those years if companies had performed in line with their PR19 business plan projections.[547]

[543] See description of the QAA in FD24 QAA Summary, SOC305.
[544] Ofwat, PR24 Draft Determinations: Quality and ambition assessment summary (**DD24 QAA Summary**), 11 July 2024, pg.13, SOC469.
[545] FD24 QAA Summary, pg.11-17, SOC305.
[546] See description of the PR19 business plan assessment process in Ofwat, PR19 initial assessment of plans: Overview of company categorisation (**PR19 Initial Assessment of Plans – Company Categorisation**), January 2019, SOC470.
[547] This chart includes selected PCs with common PCLs for which data on company forecasts were available from published sources: leakage, pollution incidents, internal sewer flooding, per capita consumption, and water supply interruptions.

FIGURE 46 - AMP7 OUTTURN PERFORMANCE VS BUSINESS PLAN PROJECTIONS

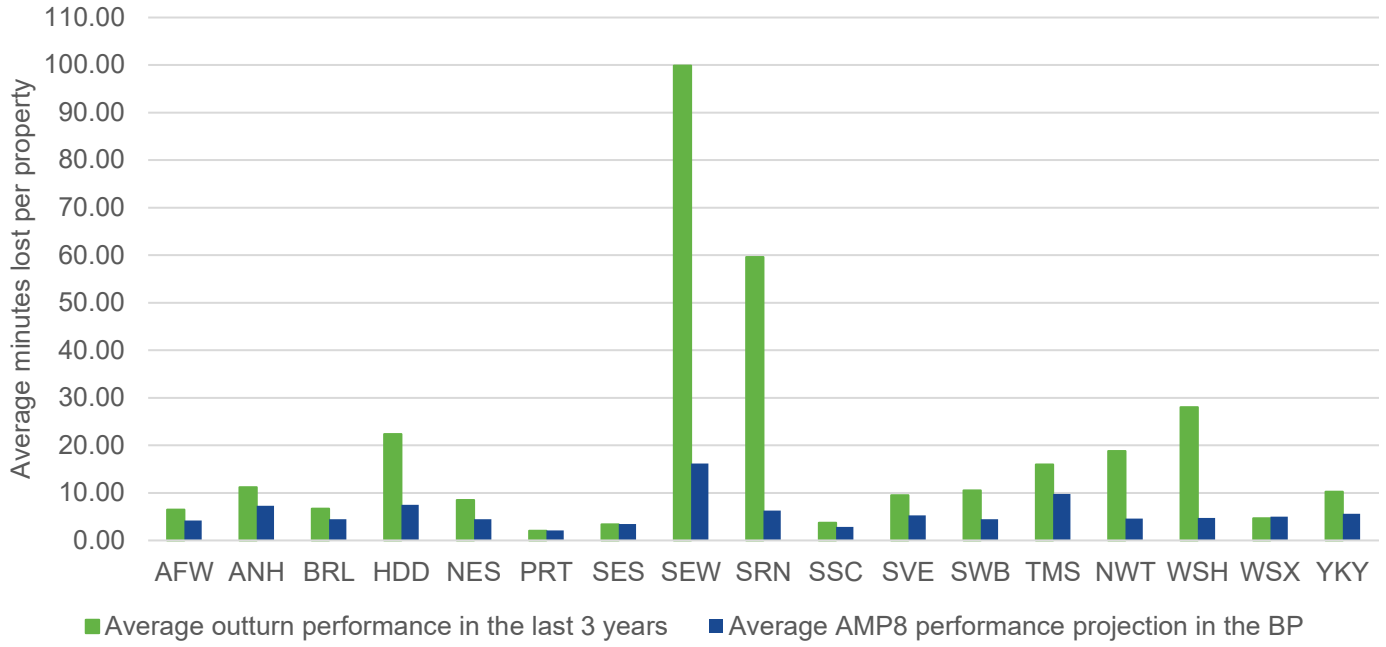


Source: NWL analysis of published company business plans for PR19 and Ofwat data on ODI payments. NWL SOC Databook.

556. These charts show clearly that companies have not been able to deliver performance in line with the projection set out in their business plans. For the PCs that we considered, our analysis suggests that if companies had done so, the median company would have earned a positive reward of 5 basis points a year in RoRE terms. In reality, the median company faces a penalty of 63 basis points a year in RoRE terms in the first four years of AMP7, a difference of 68 basis points.

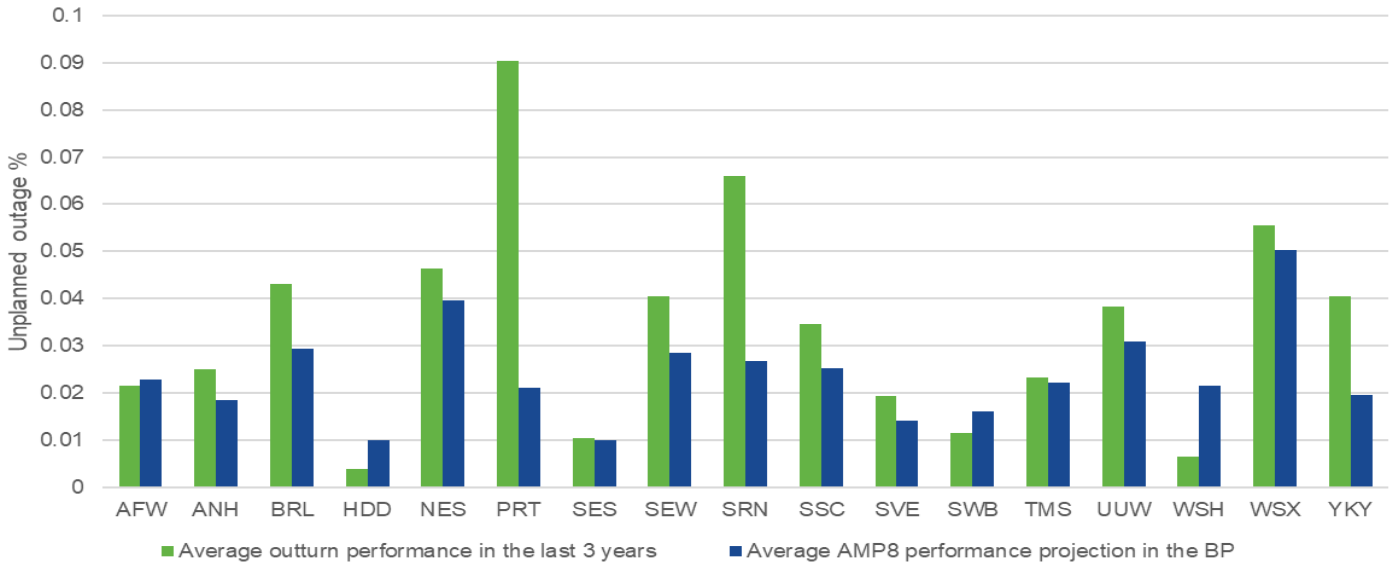
557. For PR24, while Ofwat did undertake some credibility checks on business plan projections, it does not explain what these checks are. We do not think that Ofwat's finding that only 9% of company forecasts are affected by an optimism or pessimism bias is credible, based on the evidence. As an illustration, for two selected PCs (i.e. water supply interruptions and compliance risk index) we present below charts comparing the recent performance of companies (i.e. average over the last three years) with the average annual performance projected over AMP8 in the respective company business plans.

FIGURE 47: WATER SUPPLY INTERRUPTIONS: RECENT COMPANY PERFORMANCE VS PR24 BUSINESS PLAN PROJECTIONS



Source: NWL analysis of published company business plans for PR19 and Ofwat data on ODI payments. NWL SOC Databook.

FIGURE 48: UNPLANNED OUTAGES: RECENT COMPANY PERFORMANCE VS PR24 BUSINESS PLAN PROJECTIONS



Source: NWL analysis of published company business plans for PR19 and Ofwat data on ODI payments. NWL SOC Databook.

558. These illustrations show that many companies' projected AMP8 performance would require very substantial improvements compared to the outturn performance in the last three years (2021/22 to 2023/24). While we might expect some performance improvements over time, the scale of improvement needed calls into question whether these projections are achievable in practice.

559. Ofwat's approach to assessing outcomes risk during AMP8 takes insufficient account of trends in historical company performance for each PC. Analysis of historical trends in individual company and industry-wide performance, and projections based on extrapolation of those trends could provide a valuable additional perspective to Ofwat's risk analysis.

560. We carried out our own analysis of publicly available data on industry-wide historical performance on a number of PCs to develop projections for performance and compared these against the PCLs that Ofwat has set for AMP8 to produce estimates of the overall balance of risk from ODIs.

561. The first step in our analysis was to generate projections of performance for each PC for a hypothetical median performing company based on actual historical data on performance across the sector.

- We first collected information on historical performance on a number of PCs for which historical data on company performance were readily available and comparable across the industry.
- For each PC, we regressed the natural logarithm of a relevant metric of performance against time, using a panel dataset of companies' annual performance in the period to 2023/24.[548]
- We derived the projected performance for a hypothetical median performing company by applying to the modelled performance derived from the relevant model a "median performance challenge". This challenge, analogous to the efficiency challenge applied by Ofwat in its cost assessment modelling for base costs, is defined as the median across companies of the average of the ratio of outturn to modelled performance over the more recent five-years, 2019/20 to 2023/24.[549]
- We then compared the projected performance for the hypothetical median performing company in each year of AMP8 against the applicable AMP8 PCLs for each company in the industry to calculate the ODI payment that would be payable by that company.[550]

562. The next step in our analysis was to compute the RoRE impact of this projected performance for the hypothetical median performing company.

- We converted the annual ODI payment calculated for each PC and each company into an annual average RoRE impact for each company.
- We then aggregated the annual RoRE impact by company across all PCs included within our analysis, and then calculated the annual average RoRE impact over AMP8.
- We then calculated the median of the annual average RoRE impact across the companies in the sector.

563. We carried out our analysis by grouping PCs into different "scopes" to reflect analytical differences in the approach used generate performance projections. The PCs included in each scope are listed in Figure 49 below and Figure 50 shows the results of our analysis.

[548] Except for Discharge permit compliance and Compliance risk index, where we used the metric of performance without taking its natural logarithm.
[549] We use the industry median to compute the efficiency challenge for consistency with Ofwat's approach to setting PCLs and the OAM.
[550] Not all the common PCs included in our analysis have common PCLs.

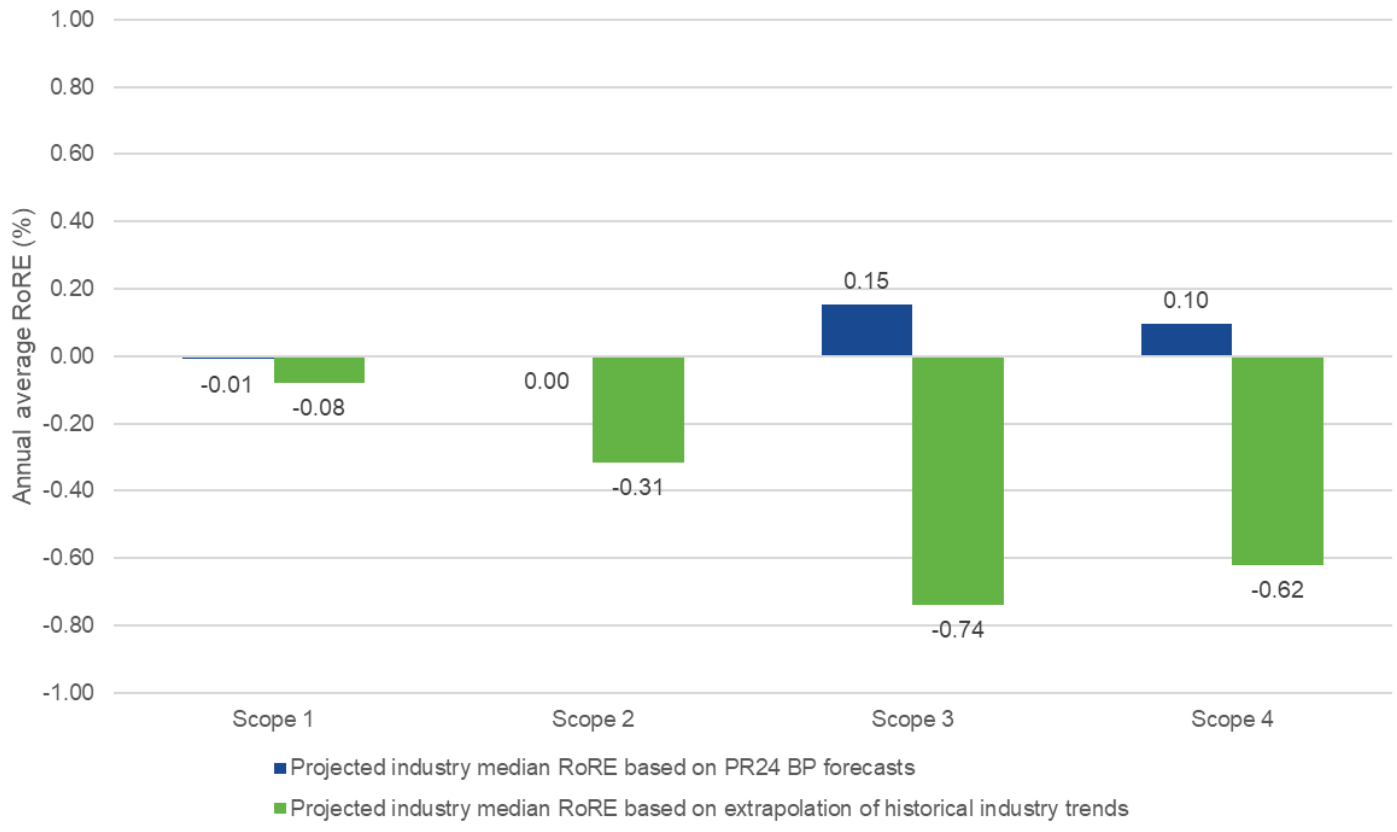
FIGURE 49: GROUPING OF PCS FOR OUR PROJECTIONS OF AMP8 ODI PERFORMANCE

Scope 1	Scope 2	Scope 3	Scope 4
This scope covers PCs for which projections were developed using the default approach described above	Additionally includes PCs for which we had to make targeted transformations on the performance metric	Additionally includes PCs for which projections used company-specific performance in a base year	This covers PCs that were common at AMP7 and are being continued in AMP8
Water quality contacts	Compliance risk index	Leakage	Compliance risk index
Water supply interruptions	Bathing water quality	Per capita consumption	Water supply interruptions
Mains repairs	Discharge permit compliance	Business demand	Mains repairs
Unplanned outages	External sewer flooding	Operational GHG (Water)	Unplanned outages
Internal sewer flooding		Operational GHG (Wastewater)	Internal sewer flooding
Pollution incidents			Pollution incidents
Sewer collapses			Sewer collapses
			Discharge permit compliance
			Leakage
			Per capital consumption

Source: NWL Analysis

564. Figure 50 compares the projections of aggregate RoRE impact using historical performance trends for the hypothetical median performing company for each of the PC scopes listed above against the RoRE impact (calculated in the same way) that would result if companies performed in line with their business plan projections.

FIGURE 50 - RORE IMPACTS FOR THE HYPOTHETICAL MEDIAN PERFORMING COMPANY UNDER DIFFERENT METHODS FOR PROJECTING FUTURE PERFORMANCE



Source: NWL analysis of historical performance and PR24 business plan forecasts. NWL SOC Databook.

565. Our analysis based on projections of historical trends suggests that the hypothetical median efficient company could face significant downside annual average RoRE impacts. The biggest negative impacts arise under scopes

3 and 4, which are most representative of the AMP8 ODI package as a whole as they have the widest coverage of PCs under our analysis. These impacts are materially larger than the impacts projected by Ofwat as part of its own ODI risk analysis. Equally importantly, these impacts are much worse than the RoRE impacts that would arise if companies performed in line with their business plan projections.

CONCLUSIONS

566. Ofwat's analysis suggests that the outcomes package is biased to the downside, with the median company expected to face penalties of 20 basis points in RoRE terms per year over AMP8. We have sought to bring a different perspective to the analysis of outcomes risk by looking at additional evidence that Ofwat may not have considered, including evidence on the suitability of business plan forecasts for risk analysis and evidence from historical trends in company performance.

567. Our analysis using this additional evidence suggests that Ofwat's risk analysis is likely to have underestimated the extent of the downward bias in the outcomes package, and that the size of the downward bias could be even larger than 20 basis points a year, this is also consistent with KPMGs risk analysis work (see Section 5.2).

5.6.1.6 Considerations for the CMA

568. Given the inherent uncertainty in the analysis of risk and the experience from AMP7, we think the OAM has a critical role to play in providing risk protection for companies and customers alike to ensure that the settlement represents a 'fair bet' in relation to the incentive package. While the mechanism could benefit from further refinement (potentially for PR29), particularly in its consideration of interactions between industry median performance on outcomes and performance against totex allowances, we support the mechanism in principle.[551] As an automatic and self-correcting mechanism to remove any bias in outturn performance, it can help build investor confidence in the regulatory regime.

569. However, the addition of the deadband of +/-50 basis points significantly weakens the protection offered by the OAM. As set out above, both Ofwat's and our analysis indicate that the median company can expect to face a penalty of 20 basis points or more in every year of AMP8. The OAM with this deadband will provide no protection against this outcome.

570. As set out earlier, we acknowledge that even if Ofwat were to have set an outcomes package that is fair and balanced in expectation, it is possible that the median company under- or outperforms and earns a negative or positive RoRE (before the application of the OAM). This means that, in principle, the application of a deadband may not be inconsistent with the aim of setting a balanced package in expectation.

571. However, the size of the deadband in Ofwat's final determinations i.e. +/-50 basis points, would allow significant underperformance (or outperformance) across the sector in a way that is not necessarily consistent with a balanced package in expectation terms.

572. We request that the CMA removes the deadband altogether to ensure that the symmetry of the ODI package is ensured and so that the 'fair bet' principle is maintained.

[551] For instance, if the sector as a whole improves performance by outperforming the ODI targets, the OAM could take away any financial rewards that the companies may have received through the ODI.

6 THE ALLOWED RETURN ON CAPITAL

- Under the regulatory framework Ofwat are required to set an allowed return on equity and debt capital that is sufficient to provide current and potential providers of capital with an expected return that compensates them for the risk of investing in regulated water assets.
- We are concerned that Ofwat's allowed return on equity (**Allowed-RoE**) is materially below the market cost of equity (**Market-CoE**) impeding the ability that the sector to raise the equity capital required for the large investment programme, thereby delaying or reducing the benefits of that programme for customers.
- Whilst companies were effectively required to use Ofwat's allowed return estimates under its QAA incentive, with significant penalties applied to those companies who did not, no company we are aware of confirmed that Ofwat's view was reasonable, and we consistently raised concerns. Alongside others, we provided alternative return estimates at both the business plan and at the DDR stages. These were always close to the midpoint of the range of estimates requested and sought to follow as closely as possible the CMA's previous PR19 methodology.
- As PR24 progressed we saw significant movements in interest rates and a significant narrowing in the difference between the Allowed-RoE and the observable returns on gilts and corporate bonds. Our board and shareholders found this to be perverse and particularly problematic in a context where the enormous investment programme in BP24 meant c.£400m of new equity investment would be needed. We, and other companies, provided substantial evidence to Ofwat on this point but it was not persuaded.
- Risk in the sector has been increasing. In 2024 Moody's, closely followed by other independent rating agencies downgraded the UK regulatory regime from Aa to A having previously downgraded it from Aaa to Aa in 2018. Lenders have been seeking a premium to lend to UK water utilities, forcing Ofwat to set its allowance for the cost of new debt above iBoxx benchmarks, increasing costs to customers. Both short-term betas and analysis of the relationship between capex and beta suggest that the forward-looking beta at PR24 may be above the unconditional beta estimated using historical data.
- We asked Kairos, supported by Professors Alan Gregory and Richard Harris to undertake a further independent evidence-based assessment of the appropriate Allowed-RoE for PR24. Kairos finds a CoE range derived using the capital asset pricing model (**CAPM-CoE**) of 5.5-5.9% and recommends an Allowed-RoE of 5.9%-6.2%. This compares to Ofwat's Allowed-RoE of 5.1%.
- We have carefully considered Ofwat's final allowance for the cost of debt. Whilst we have some concerns with the methodology, we do not seek to materially challenge the allowances for the cost of embedded and new debt over the PR24 period. However, we request that the CMA updates the 'placeholder' value for the cost of new debt for the latest market data and reconsiders the evidence from KPMG that we submitted on additional debt costs in our DDR. Updating for market data and KPMG's evidence on additional debt costs increases the total allowed cost of debt from 3.15% to 3.37% in real-CPIH terms.
- Overall, this results in a proposed allowed return on capital of 4.45%-4.59%, compared to Ofwat's 3.97%.
- We request that the CMA consider our evidence and reset the allowed return.

6.1 INTRODUCTION

573. In this Section we set out our concerns with the allowed return on capital in FD24. In particular we:

- provide some background information that sets the context for our concerns with Ofwat's approach and FD24 decision (see Section 6.2);
- provide an overview of the Kairos analysis of Ofwat's FD24 (see Section 6.3); and
- summarise our suggested estimation of the cost of capital components (see Section 6.4).

574. This is supported by a more detailed consideration of the issues relating to the estimation of the cost of equity and the setting of the point estimate in Appendix 1 Section 7. That Appendix also outlines some suggestions with respect to potential updates on the cost of debt and correction of an error in the retail margin adjustment (see Appendix 1 Section 7.3).

6.2 BACKGROUND AND CONTEXT

575. Under the regulatory framework for water companies in the UK, Ofwat is required to set an allowed return on equity and debt capital that is sufficient to provide current and potential providers of capital with an expected return that compensates them for the risk of investing in regulated water assets (see Appendix 1, Section 2).

576. We are concerned that Ofwat's Allowed-RoE is materially below the Market-CoE and will act as an impediment to the ability that the sector has to raise the equity capital required for the large investment programme at PR24, thereby delaying or reducing the benefits of that programme for customers and the environment.

577. We raised these concerns consistently throughout the PR24 process,[552] including in response to Ofwat's earliest consultations on the methodology it intended to adopt for PR24.[553] This consultation began less than a year after the CMA's PR19 redetermination and immediately deviated significantly from the approach taken by the CMA.[554] Whilst companies were effectively required to use Ofwat's allowed return estimates under Ofwat's QAA incentive (see Section 2.6.6), with significant penalties applied to those companies who did not, no company we are aware of accepted and confirmed that Ofwat's view was reasonable. Almost all companies suggested a more appropriate alternative. We did so at both the business plan and at the DDR stage and worked hard to explain those differences, including on customer bills. Our suggested alternative estimates were always conservative and close to the midpoint of the range of estimates requested across the companies and sought to follow as close as possible to the CMA's previous PR19 methodology.

578. As PR24 progressed we saw significant movements in interest rates. This led us to see a significant narrowing in the difference between the Allowed-RoE and the observable returns on gilts and corporate bonds. Our board and our shareholders found this to be perverse and particularly problematic in a context where the enormous investment programme in BP24 meant c.£400m of new equity investment would be needed in the business. We, and other companies, provided substantial evidence to Ofwat about our concerns with its approach but Ofwat was not persuaded by that evidence. Ofwat appeared at times more focussed on finding reasons to exclude that evidence

[552] E.g. NES - Northumbrian Water Response to PR24 and Beyond: Risk & Return Discussion Paper (**NWL Response to PR24 Risk and Return**), February 2022, SOC541; NES - Response to Ofwat's PR24 Methodology Consultation (**NWL Response to DM24**), 07 September 2022, SOC547.
[553] Ofwat, PR24 and beyond: Discussion paper on risk and return (**PR24 Risk Consultation**), 09 December 2021, SOC393.
[554] CMA FD19 Decision, Section 9 Cost of Capital, SOC334.

from its work rather than being open minded and curious, with the use of Multi-factor models (**MFM**s) being one example of this.[555]

579. The sector faces challenging conditions, which increase the risk to investors (see Section 3.3 and 3.4). These risks are playing out in practice. Thames Water has been seeking to undertake significant financial restructuring to avoid Special Administration, which it considers is, at least in part, a result of Ofwat's regulatory regime. In 2024 Moody's, closely followed by other independent rating agencies downgraded the UK regulatory regime from Aa to A[556] having previously downgraded it from Aaa to Aa in 2018[557] (the regulatory regime for UK energy networks has remained at Aaa). These things, in combination, have meant that lenders have been seeking a premium to lend to UK water utilities, forcing Ofwat to set its allowance for the cost of new debt above iBoxx benchmarks, increasing costs to customers.

6.3 OVERVIEW OF THE KAIROS ANALYSIS OF FD24

580. We asked Kairos, supported by Professors Alan Gregory and Richard Harris to undertake a further independent evidence-based assessment of the appropriate Allowed-RoE for PR24.[558] Kairos finds a CAPM-CoE of 5.5-5.9% and recommends an Allowed-RoE of 5.9%-6.2%. This compares to Ofwat's mid-point CAPM-CoE of 4.8% and Allowed-RoE of 5.1%.[559]

581. **Downward biased CAPM-CoE:** Ofwat uses the CAPM as its primary tool for estimating the cost of equity (**CoE**), Kairos finds that Ofwat's approach disregards critical evidence or places undue weight on certain sources of evidence for each parameter within the CAPM, which results in downwardly biased parameter estimates and a downwardly biased estimate for the CAPM-CoE. In particular:

582. **Risk-free-rate (RFR):** Ofwat relies solely on index-linked gilt (**ILG**) yields to estimate the RFR, in a material departure from the precedent set by the CMA at PR19 of placing weight on both ILGs and AAA-rated corporate bonds.[560] In doing so, Ofwat disregards evidence of a convenience yield that depresses ILG yields beneath the true RFR, and evidence that yields on the safest 'AAA' class of corporate bonds are materially above those on equivalent ILGs, which demonstrates a difference between risk-free lending and borrowing rates that would result in a true RFR above that of ILG yields. It also disregards the introduction of a forward uplift to account for market-based quotes forecasting the evolution of yields on proxy instruments over PR24. In doing so, Ofwat's RFR estimate is 0.8% and 1.1% below the RFR over the regulatory investment horizon.[561] We note that approximately 0.3% of this differential is methodology and 0.6% is market movements since Ofwat did its analysis.

583. **Beta:** Ofwat's unlevered beta is 0.283, compared to the unlevered beta set by the CMA at PR19[562] of 0.29 and the unlevered betas estimated by Kairos of 0.319 to 0.337.[563] It is surprising that Ofwat is comfortable with the

[555] Ofwat rejected MFMs, primarily because it considered that the CAPM was superior for charge control purposes. See FD24 Allowed Return Appendix, pg.70-76, SOC308.
[556] Moodys 11.2024 NWL Outlook, SOC347.
[557] Moody's Ratings, Regulated Water Utilities – UK: Regulator's proposals undermine the stability and predictability of the regime (**Moodys 05.2018**), 22 May 2018, SOC348.
[558] Kairos Economics: Setting the Allowed Return on Equity for PR24 (**Kairos PR24 Allowed Return 2025**), March 2025, SOC001.
[559] FD24 Allowed Return Appendix, pg.84-85, SOC308.
[560] CMA FD19 Decision, paras. 9.264-9.265, SOC334.
[561] Kairos' RFR range is 2.3-2.6%, real CPIH, compared to Ofwat's 1.52% figure.
[562] CMA FD19 Decision, pg.1099, SOC334.
[563] Kairos PR24 Allowed Return 2025, Section 4.4, SOC001.

implication of its beta being below the CMA's at PR19 which suggests that the systematic risk of water has reduced at PR24, given inter alia: i) the regulatory and political environment; ii) the scale of investment programme that we face; and iii) Ofwat's acknowledgement (via a 30bp iBoxx uplift) that the water sector's debt is now riskier than the market benchmark used at PR19.[564] Ofwat's depressed beta is primarily due to: i) Ofwat placing no weight at all on the estimated betas of Pennon, despite it now being a pure-play listed water company since 2020 and evidence that its beta had not been distorted by its other (non-water related) activities previously; and ii) Ofwat making no adjustment to its beta calculations for the highly material downward effects of the Covid-19 lockdowns on estimated betas of listed water companies (the CMA found a material downward effect on betas from the Covid-19 pandemic at PR19 and placed less weight on betas that used data from the Covid period – which was c.10months at the time).[565] Both short-term betas and analysis of the relationship between capex and beta suggest that the forward-looking beta at PR24 may be above the unconditional beta estimated using historical data.

584. **Total market return (TMR):** Ofwat's ex ante estimate under its Fama-French approach relies on an interpretation of the trailing 'dividend yield', which results in its overall TMR estimate being 9bp below the long-run average. In addition, whilst both Ofwat and Kairos rely on the primary assumption that the TMR is more stable than the equity risk premium (**ERP**), under the assumption that the CAPM expected market return is not invariant to interest rates, the TMR at PR24 may be above the TMR at PR19, owing to the significant increase in the RFR between the two periods.

585. **Insufficient adjustment from CAPM-CoE to Allowed-RoE:** Both Ofwat and Kairos consider a range of evidence when moving from the CAPM-CoE to selecting a point estimate for the Allowed-RoE. It is evident from a full assessment of the evidence that should be considered when selecting a point estimate that Ofwat takes an extremely partial view of its CAPM-CoE, disregards or misconstrues critical evidence provided by cross-checks that highlight the downward bias in its CAPM-CoE and fails to recognise the uncertainty in its estimate. In particular:

a. **Systematically biased CAPM parameters:** Ofwat's failure to give regard or due weight to certain sources of evidence in its CAPM-CoE across RFR, Beta and TMR, is all in a single direction – downwards. This is evident from: i) Figure 22 in Appendix 1 Section 7.2.3.1 which demonstrates graphically how Ofwat's CAPM-CoE compares to a range of permutations of the CAPM-CoE; ii) Kairos' probability distribution analysis (see Appendix 1 Section 7.2.4.2) which shows that Ofwat's CAPM-CoE mid-point is at the 31st percentile;[566] and iii) Ofwat's mid-point CAPM-CoE of 4.8% and Allowed-RoE of 5.1% both being outside of Kairos' CAPM-CoE range. Therefore, whilst Ofwat purports to have aimed up by 27bp[567] Ofwat has clearly not aimed-up at all. Instead, it has only very partially corrected a downwardly biased mid-point CAPM-CoE of 4.8%.

b. **Uncertainty in CAPM parameter estimates:** it is well understood that the CAPM parameters are estimated with significant uncertainty[568] (indeed Kairos finds a standard error on its CAPM-CoE to be 1.2%)

[564] For a fuller description see Section 3.4.
[565] CMA FD19 Decision, para. 9.493, SOC334.
[566] Kairos PR24 Allowed Return 2025, para. 8)c, SOC001.
[567] Ofwat, PR24 final determinations: RR01 Allowed return model (**FD24 Allowed Return Model**), December 2024, sheet InpC - cell F15, SOC317.
[568] See, for example, UK Regulators Network, UKRN guidance for regulators on the methodology for setting the cost of capital (**UKRN 2023 Guidance**), 23 March 2023, pg.26, SOC392.

and that there is therefore a risk of setting the Allowed-RoE above or below the Market-CoE accidentally. We consider that the consumer welfare implications of setting the Allowed-RoE too low are greater and more wide-reaching than the consumer welfare implications of setting it too high.[569] It is therefore best practice to err on the side of caution and aim-up above the mid-point to reduce the risk of setting the Allowed-RoE too low, particularly where there is a large amount of investment required. Kairos estimates that aiming-up by 50bp is required to achieve the 67th percentile, which if targeted results in the risk of accidently setting the Allowed-RoE too high vs too low to be 67:33. Ofwat fails to consider or model the substantial degree of estimation uncertainty in its CAPM parameter estimates. It therefore has no basis upon which to assess how much it wants to reduce the risk of setting the Allowed-RoE too low, due to parameter uncertainty, by aiming-up.

c. **MFMs:** The CAPM is one model that can be used to estimate the CoE. However, it has known flaws in the form of omitted variables and underestimating the CoE for low beta stocks (like utilities). Academics and investment practitioners have therefore long-since used MFMs either as a primary tool or as a means of triangulating the CAPM-CoE.[570] MFMs estimate the CoE's for UK water stocks at 6.1-6.6% (mid-point 6.3%) [571] but Ofwat disregards this evidence in its entirety for unsound reasons.[572]

d. **Differences in debt-to-equity premia:** Ofwat's Allowed-RoE provides a premium above its estimate for the cost of new debt of 1.36%, compared to 4.5% by the CMA at PR19.[573] This highlights that Ofwat's Allowed-RoE is not sufficient to provide equity holders with a reasonable return, when compared with expected returns on related available debt-based investments.

e. **Market-to-Asset Ratios (MARs):** Ofwat concludes that its CAPM-CoE estimate (mid-point 4.8%) is appropriate based on findings from its MARs analysis, where it estimates an implied CoE of 4.3-6.3% (mid-point 5.3%).[574] This is because Ofwat's implied CoE is based upon an unrealistically low assumption for future growth of relevant RCVs of 0-2%. In fact, an updated analysis based on a reasonable (albeit in our view still prudent) assumption for RCV growth results in an implied CoE range of 5.2-6.8% (mid-point 6.0%), highlighting the downward bias in Ofwat's CAPM-CoE.[575]

586. Addressing the issues above results in an increase of the CAPM-CoE estimate from 4.58% - 5.07% to 5.5% - 5.9% in real-CPIH terms. In terms of the degree of aiming-up, we note that the CMA aimed-up by 25bp at PR19, where the investment programme and in turn the risks of setting the Allowed-RoE too low were smaller than they are at PR24. Nevertheless, following precedent and adding 25bp results in an Allowed-RoE at the top of the Kairos CAPM-CoE range of c.5.9%. However, as set out above, the CAPM model is estimated with considerable uncertainty and has known flaws. Aiming-up by c.50bp to 6.2% achieves the 67th percentile of the CAPM-CoE probability distribution and is broadly in line with the mid-points of the CoE derived from MFMs (6.3%) and MARs (6.0%). There is therefore

[569] UK Regulators Network, Estimating the cost of capital for implementation of price controls by UK Regulators: An update on Mason, Miles and Wright (**UKRN 2018 CoE Study**), June 2018, pg.70-72, SOC400.
[570] Kairos PR24 Allowed Return 2025, paras. 211-214, SOC001.
[571] Kairos PR24 Allowed Return 2025, Table 16, paras 222 and 263)b., SOC001.
[572] Ofwat's reasons are set out at FD24 Allowed Return Appendix, pg.71-76, SOC308.
[573] Calculation based on CMA FD19 Decision, Table 9-37, SOC334.
[574] FD24 Allowed Return Appendix, pg.69 and Table 16, SOC308.
[575] Kairos PR24 Allowed Return 2025, para. 231 and Table 17, SOC001.

compelling evidence to set the Allowed-RoE 50bp above the mid-point of the Kairos CAPM-CoE range at 6.2%. Consequently, we are asking the CMA to re-set the Allowed-RoE to at least 5.9% in real-CPIH terms, consistent with the PR19 aiming-up amount but we note the weight of evidence for a larger uplift at PR24.

587. Such a substantial underestimate of the Allowed-RoE, is particularly problematic at PR24, given the extremely large investment programme that is planned and Ofwat's own assumption that we need to raise £1bn of new equity during PR24, for the notional company to maintain a Baa1/BBB+ credit rating.[576] At the level of Allowed-RoE set for PR24, it is unlikely that a notionally financed company would be able to attract the level of equity investment required to meet Ofwat's assumption and its financeability assessment. Without the equity injection assumed, we calculate that the rating for the notionally financed company would fall to Baa2/BBB, and potentially further in future AMPs.[577] Therefore, Ofwat's conclusion that the notionally financed company meets its financeability test is not sound. Moreover, Ofwat's entire financial package is internally inconsistent: it cannot rely on the equity that its financeability assessment hinges upon being forthcoming; and its assumed rating for its cost of debt analysis is not consistent with the rating that would actually be achievable by the notional company.

588. We have carefully considered Ofwat's final allowance for the cost of debt. Whilst we have some concerns with the methodology, we do not seek to materially challenge the allowances for the cost of embedded and new debt over the PR24 period. However, we request that the CMA updates the 'placeholder' value for the cost of new debt for the latest market data and reconsiders the evidence from KPMG that we submitted on additional debt costs in our DDR.[578] Updating for market data and KPMG's evidence on additional debt costs increases the total allowed cost of debt from 3.15% to 3.37% in real-CPIH terms.[579]

589. Taking the approach we have outlined to the redetermination of the Allowed-RoE and amendments to the cost of debt allowance results in a proposed allowed return on capital of 4.45%-4.59%, compared to Ofwat's 3.97%.

590. To further assist the CMA in understanding our position on the Allowed-RoE compared to Ofwat's approach at PR24 and the CMA at PR19, Figure 51 explains at a high-level the approaches adopted across each parameter.

FIGURE 51: SUMMARY OF OFWAT VS CMA AT PR19 VS NWL SOC POSITION ACROSS EACH COE PARAMETER

	Ofwat	CMA PR19	NWL SoC
	1.52%	**-1.63% to -1.05%** **Point estimate: -1.34%**	**2.3-2.6%** **Point estimate: 2.45%**
RFR	Sole weight on the 20-year ILG yield using Sept '24 data No weight on AAA corporate bond yields - nominal AAA yields deflated using swap-based inflation are in line with gilt yields	Range bound by 20-year ILG yield and AAA-rated corporate bond yields, deflated using forecast inflation, using Dec '20 data [580] Estimate set at mid-point of the range between ILGs and AAAs: consistent with Brennon CAPM model: and	Range bound by 20-year ILG yield and Kairos' modelled wedge between AAAs and gilts, controlling for tenor, using Jan '25 data 14bp forward uplift applied. Whilst we recognise the CMA didn't apply a forward uplift at PR19, we consider that regardless of the strength of the predictive properties, the forward-rate is the market price faced by an investor for managing the risk of the RFR

[576] FD24 NWL Financial Model, SOC322.
[577] Appendix 1, Section 7, Figure 23
[578] NES88B - NWL Response to Ofwat DD24, KPMG Estimating Cost of New Debt and Additional Borrowing Costs for PR24 (**NWL DDR KPMG CoND**), August 2024, SOC224.
[579] See Appendix 1, Section 7, Figure 28
[580] CMA FD19 Decision, Table 9-2 and paras. 9.263-9.264, SOC334.

	Ofwat	CMA PR19	NWL SoC
	No adjustment for convenience yield - UK evidence is only for short tenors No forward uplift given poor predictive properties	allows for the existence of convenience yield in ILGs[581] No forward uplift, given poor predictive properties[582]	change over PR24, which absent indexation (and transferring that risk to consumers) should be priced into the allowed return Mid-point of range taken: consistent with Brennon CAPM model; and allows for the existence of convenience yield in ILGs Nb: a strict roll-forward of the CMA's FD19 approach results in 2.6% using Jan' 25 data[583]
TMR	**6.68-6.98%**	**6.81%**	**6.92%**
	Estimated directly using long-run ex post and long-run ex ante approaches applied to the Dimson Marsh and Staunton (**DMS**) 2024 dataset TMR is more stable than the ERP but even if the ERP is estimated and added to the RFR, RFR is not historically high, so would not change the number	Estimated directly using long-run ex post and long-run ex ante approaches, using DMS 2020, except for the Fama French ex ante approach, which used the Barclays dataset, rather than DMS. [584] Nb: the 2020 DMS publication didn't have the same granularity as the 2024 publication TMR is more stable than the ERP but this shouldn't be taken as assuming the negative relationship between ERP and the RFR is precisely 1:1[585]	Estimated directly using long-run ex post and long-run ex ante approaches, from the 2024 DMS dataset with the range based on long-run ex post approaches Supportive of the position that TMR should be estimated directly using long-run data. But note alternative view of stable ERP and that under this view, the higher RFR since PR19 may support a higher TMR than PR19
Beta	**Unlevered beta of 0.27-0.30**	**Unlevered beta of 0.29[586]**	**Unlevered beta range of 0.319-0.337, with a mid-point of 0.328**
	Betas estimated for SVT and UU, no weight on Pennon, as distorted by Viridor waste management division pre-2020 5 and 10 year windows, with daily sampling frequencies No adjustment for the effects of Covid-19	Betas estimated for SVT and UU[587] 2, 5 and 10 year windows at a range of sampling frequencies were estimated[588] The inclusion of (what was at the time c.10 months) of data from the Covid-19 period materially reduces beta and is likely to be rare, hence less weight was placed on estimates that included the Covid-19 period[589]	Betas estimated for SVT, UU and Pennon, given that Kairos finds the spin-off of Viridor has no statistically significant effect on the Pennon beta Primary approach should be a c10 year window at daily sampling frequencies Covid-19 lockdowns have a material and statistically significant downward effect on beta. The CMA de-weighted the period at PR19. Our advisers have undertaken econometric analysis that estimates the beta, if the Covid-19 lockdowns are assumed to repeat with negligible frequency over the regulatory investment horizon Estimates of the effects of larger capital programmes on beta supports forward-

[581] CMA FD19 Decision, Table 9-2 and paras. 9.263-9.264, SOC334.
[582] CMA FD19 Decision, para. 9.234, SOC334.
[583] As set out in Kairos PR24 Allowed Return 2025, SOC001, a strict roll-forward of CMA at PR19 uses forecast inflation, which given the current difference between inflation swaps and forecasts results in a higher AAA yield than the Kairos approach, which is offset by the CMA's decision not to apply a forward uplift at PR19.
[584] CMA FD19 Decision, paras. 9.393-9.394 and Table 9-37, SOC334.
[585] CMA FD19 Decision, para. 9.387, SOC334.
[586] CMA FD19 Decision, Table 9-37, SOC334.
[587] CMA FD19 Decision, para. 9.479, SOC334.
[588] CMA FD19 Decision, para. 9.479, SOC334.
[589] CMA FD19 Decision, Table 9-16 and para. 9.493, SOC334.

	Ofwat	CMA PR19	NWL SoC
			looking betas being closer to the upper end of the Kairos range 0.29 from CMA PR19 should be a floor, given the change in risk at PR24 and the updated econometric evidence in the Kairos report
	27bp aiming-up above the mid-point	**25bp aiming-up above the mid-point**	**25-50bp aiming-up above the mid-point**
Aiming-up	Large investment programme and poor investor sentiment towards the water sector	Address the risk to investment in the sector of setting the Allowed-RoE too low and to account for asymmetry in the package[590]	Large investment programme (larger than PR19), the risks of deterring that investment if the Allowed-RoE is set too low, 50bp above the mid-point required to achieve the 67th percentile of the CAPM-CoE probability distribution, cross checks from MARs (mid-point 6.0%), MFMs (mid-point 6.35%) and debt vs equity premia and asymmetry in the package[591]

Source: NWL and Kairos analysis; references set out in Figure.

6.4 CONSIDERATIONS FOR THE CMA

591. Re-setting the Allowed-RoE to the recommended estimate from Kairos and adjusting for the market updates to debt, additional debt costs and the RMA error results in an allowed return of 4.45%-4.59%. The component elements are set out in Figure 52, compared to Ofwat's FD24.

FIGURE 52 - COST OF CAPITAL COMPONENTS – OFWAT FD24 & NWL SOC

Real, CPIH	**Ofwat FD24[592]**	**NWL SoC**
RFR	1.48%	2.3%-2.6%
TMR	6.83%	6.86%-6.97%
Unlevered Beta	0.282	0.319-0.337
Cost of Equity pre aiming up[593]	**4.81%**	**5.5%-5.9%**
'Aiming up'	0.29%	0.25%-0.50%
Return on Equity	**5.10%**	**5.9%-6.2%**
Cost of embedded debt	2.77%	2.77%
Cost of new debt	3.74%	4.15%
Proportion of embedded debt	76%	74.7%
Issuance and liquidity costs	0.15%	0.25%
Overall cost of debt	**3.15%**	**3.37%**
Appointee WACC	**4.03%**	**4.51-4.66%**
Retail margin adjustment	(0.06%)	(0.055%)
Wholesale WACC	3.97%	4.45-4.59%

Source: FD24 Allowed Return Model, sheet InpC, SOC317; NWL SOC Databook.

592. We ask the CMA to redetermine the allowed return accordingly. Correcting the allowed return to 4.45-4.59% and recalibrating the Totex as outlined in our SoC will result in the notional company being in line with Baa1/BBB+ (see Appendix 1, Section 7.2.6).

[590] CMA FD19 Decision, paras. 9.1402-9.1404, SOC334.
[591] NB: should the deadband on the OAM be removed we recognise that ODI asymmetry would no longer be a reason for aiming-up but consider that the need to aim-up to attract new investment and because the MARs and MFM cross-checks support numbers at the higher end of the range, remains.
[592] There are some small component variations between the Ofwat values in FD24 Allowed Return Appendix, SOC308 and FD24 Allowed Return Model, SOC317. We have used the FD24 Allowed Return Model, values InpC, SOC317 in this analysis.
[593] This is not calculated using the lowest / highest value for each component, but rather as the lowest / highest plausible combination in the round.

7 NEW INFORMATION, CHANGES TO REQUIREMENTS AND UNAMBIGUOUS ERRORS

593. We anticipate that as a matter of course the CMA will utilise latest data, such as the 2024/25 outturn information, when carrying out the redetermination.[594] We will provide that to the CMA once it is available and will endeavour to keep the CMA appropriately informed of other new, relevant, information throughout the process. In the context of preparation of the SoC we have considered what matters could be brought to the CMA's attention at this stage – regardless of whether the impact is positive or negative on our overall allowance. With that in mind, we have identified the following:

- new and updated information: see Figure 53 and Appendix 1 Section 8;
- new and updated requirements: see Figure 54 and Appendix 1 Section 9; and
- unambiguous errors in FD24: see Figure 55 and Appendix 1 Section 10.

FIGURE 53 - REQUESTS TO REFLECT NEW AND UPDATED INFORMATION IN THE REDETERMINATION

Issue and Background	Latest information	Request to CMA
Water Business rates – see Appendix 1 Section 8.1		
Ensuring the allowance for business rates reflects the latest information on the rateable value (**RV**) from the VOA. • BP24 was based on a forecast valuation of £211m. • FD24 was based on a forecast valuation of £150m. • Any difference will be addressed through the PR24 correction mechanism at the end of PR29, subject to 10:10 cost sharing rates	• VOA initial draft list valuation of £187m issued on 4.2.25 • VOA 2026 Revaluation for the 3 years 26/27 to 28/29 had a rateable value of £91.3m (£68.6m exc. Kielder) vs Ofwat FD24 value of £60.8m. • For 29/30, Ofwat assumed RV uplift to £67.7m; NWL's 2029 VOA RV forecast of £116.3m.	Reflect the latest view from VOA in the redetermination of AMP8 allowances. Will manage cashflow impacts and reduce volatility
Howdon WWTW growth – see Appendix 1 Section 8.2		
Addressing the need for investment in growth at Howdon WTW through a Notified Item • Howdon WWTW included in BP19 as £91m scheme to support capacity expansion. No specific allowance made for scheme at FD19. • Scheme not delivered in AMP7 as immediate need for intervention mitigated. • Howdon WWTW not included as enhancement scheme in BP24 on the assumption that it would be delivered from AMP7 implicit base allowance. • Addressed as supplement to growth enhancement case at DDR, identifying substantially increased costs estimate (up to £329m) and requested inclusion in the large scheme gated process • FD24 did not include scheme in large gated process on basis that FD19 allowance not spent and scheme is not sufficiently developed.	• Since BP24 the likelihood that investment will be needed in AMP89 has increased to mitigate risk of permit breaches. • Cost and scope are anticipated to be material but remain uncertain.	Mitigate the need and uncertainty by nominating this scheme under the large schemes gated process, or by introducing a separate Notified Item.

[594] CMA Guidance, para. 3.10.

594. During PR24, the statutory requirements changed significantly and frequently, including at a late stage in the PR24 process. We wrote to Ofwat in September 2023[595] to highlight this uncertainty about statutory requirements and provided additional data tables with BP24[596] to set out possible scenarios (at Ofwat's request). We shared a further update with Ofwat in May 2024 and published this in July 2024.[597] We noted that statutory requirements could continue to change even after FD24, and this is outside our control.

595. Figure 54 identifies changes to statutory requirements that happened after Ofwat's final deadline for pre-FD24 updates. These could not be taken into account for FD24 but should be considered for a redetermination.

FIGURE 54 - REQUESTS TO REFLECT NEW AND UPDATED REQUIREMENTS IN THE REDETERMINATION

Issue and Background	Latest information	Request to CMA
Phosphorus removal (P-Removal) schemes – see Appendix 1 Section 9.1		
Allowance uplift to reflect EA's changed policy position with respect to use of catchment nutrient balancing (**CNB**) schemes • £28m requested in BP24 for CNB schemes to address P-Removal in seven catchments and allowed in FD24. • As of 13 December 2024, EA minded to require end of pipe solutions at 28 WTWs rather than our CNB schemes. • Increases overall cost to deliver WINEP requirements for AMP8. • Impact on partner organisations that have recruited to support CNB activities.	• Total estimated cost of end-of-pipe solutions at 28 WTWs is £104.7m (£96 more than BP24 CNB proposals). • Can mitigate impact on partner organisations and support broader ecological objectives by retaining certain aspects of the original CNB schemes at an additional cost of £14m (includes £10.5m of transition expenditure allowed for 2024/25 of which £2m was spent by December 2024).	Update totex allowance to £104.7m to reflect increased cost of the end of pipe solutions. Allow an additional £14m to deliver the identified CNB schemes.
IED – see Appendix 1 Section 9.2 and Appendix 6		
New enhancement cost allowance to reflect updated scope of IED requirements and anticipated costs • BP24 did not contain any IED enhancement expenditure as scope and costs were not changed from CMA FD19 £12m allowance. • Schedule 5 Notice (confirmed May 2024) introduced additional IED compliance requirement at Howdon WWTW.	• Preferred solution has been selected and costed: additional cost of £25.4m to manage return liquors.	Include an enhancement cost allowance of £24.5m for the additional IED compliance activity. Apply a 25:25 cost sharing mechanism, consistent with CMA FD19 Decision.
Updates for changes to delivery timelines – see Appendix 1 Section 9.3		
Suffolk Water Supplies: Appendix 1 Section 9.3.1 Reflect financial impact of changes to delivery timelines for Suffolk Water Supplies in light of changes to planning approach • BP24 assumed TPCA was the best planning strategy for Lowestoft and Suffolk Strategic Network schemes but further assessment has confirmed a combined Development Consent Order (**DCO**) is optimal and more robust. Longer preparation time and higher costs offset by efficiency in planning application compulsory	• Expenditure will be delayed so allowance for AMP8 and AMP9 needs adjusting. • PCD needs to reflect new delivery date of March 2033	Change the totex allowance for AMP8 from £118.03m to £41.27m, with the remaining allowance assumed for AMP9. Update the PCD set by Ofwat to reflect the new delivery date of March 2033.

[595] NES66 - Ofwat Letter on PR24 Cost Uncertainty (**BP24 Ofwat Letter on PR24 Cost**), 19 September 2023, SOC074.
[596] NES_BPT_04 - BP24, Alternative Plans for WINEP (**BP24 Tables – WINEP**), October 2023, SOC113.
[597] BP24 Update 07.24, SOC138.

Issue and Background	Latest information	Request to CMA
land purchase process, which has higher cost implications. • Requires WRMP and FD24 to be updated to reflect latest delivery dates and revised cost allowance for AMP8.		
Bacton Desalination bulk supply pipeline: Appendix 1 Section 9.3.2 Reflect Anglian Water's updated timing for the Bacton Desalination plant. • DDR request for £4.15m funding for detailed investigation and design for a potential pipeline to enable a bulk supply rejected at FD24. • May be an alternative to other more expensive supply schemes in the region currently going through the large scheme gated process. • Rejected due to uncertainty regarding the Anglian Water scheme.	• Anglian Water's Bacton Desalination Plant now confirmed as a RAPID Strategic Resource Option. • Likely to need to be delivered earlier than anticipated.	Allow £4.15m for the investigation and design work so that the feasibility of the scheme can be assessed in a timely manner.

596. We raised three errors in models with Ofwat after FD24, through the query process. Ofwat replied to each of these queries to acknowledge that these were errors but confirmed that it intended to make only the correction for the storm overflows error as part of the blind year process. As set out in Figure 55 and Appendix 1 Section 9 Ofwat rejected the request to correct the other errors. We consider it reasonable that these unambiguous, accepted, errors should be corrected as part of this redetermination. We have not identified any other errors in our review of the FD24 models.

FIGURE 55 - CORRECTING UNAMBIGUOUS ERRORS IN FD24

Issue and Background	Error	Request to CMA
Model CA55 storm overflows cost allowances – see Appendix 1 Section 10.1		
• Error in Model CA55 identified by Ofwat in FD24 changes log. • Reduces totex allowance by £31.03m.	• Incorrect formula in column AS of 'total allowances' sheet uses input for HDD rather than NES. • Ofwat has agreed this will be corrected in the blind year reconciliation.	Use correct input in models for CMA redetermination. Will generate correct output to address Error 1 in Model CA110.
Model CA110 enhancement company efficiency challenge – see Appendix 1 Section 10.2		
Error 1: Impact of CA55 error • Storm overflows totex allowance used as an input in Model CA110. • Error in Model CA55 has knock-on impact in Model CA110. • Error increases capped shallow dive efficiency challenge from 5.4% to 7.7%.	• Model CA110 'wastewater enhancement' sheet, cell G10 contains the Model CA55 storm overflows cost allowance. • This is incorrect due to the error identified above and results in an efficiency challenge that is higher than it should be	Correct the error to Model CA55 and include the revised allowance in Model CA110. Will reduce the capped shallow dive efficiency challenge from 7.7% to 5.4% (unrounded).
Error 2: Erroneous input • For continuous river water quality monitoring (**CWQM**) (column B) Ofwat has used an input number from the original BP24 Model CA20 rather than the updated Model CA20 tables provided on 25 January 2024. • The updated number reflected updated WINEP guidance and Ofwat confirmed it would be used at FD24.	• CWQM references an assessed value of £124.79m rather than the updated assessed allowance of £55.448m from Model CA20 'allowance' sheet, cell C17. • We identified the error within days of receipt of FD24 and provided details of the necessary correction on 6 January 2025. • Ofwat has acknowledged error but declined to correct it on the basis that it	Correct this error by either: • Correcting the erroneous input value and re-running the Ofwat models; or • adding the additional £3.589m to the totex enhancement allowances (all of which have the same cost sharing rates,

Issue and Background	Error	Request to CMA
• Error incorrectly increases level of capped shallow dive efficiency challenge and reduces allowances by £3.589m	does not meet the criteria to be unambiguous: it is not direct to detect or straightforward to correct. • Correcting the error will reduce the capped shallow dive efficiency challenge from 5.4% to 0.09%. Ofwat rounded these to the nearest whole percentage. So, this should be rounded to 0.00%.	so there are no further calculations to make).
Model CA68 septic tanks – see Appendix 1 Section 10.3		
• As a result of a formula error the model does not count any population equivalent for septic tanks delivered in 23/24 and 24/25. • The error impacts on the median model costs, such that allowances are overstated for all companies except us. • The error understates our efficient costs by £2.187m. • Correcting the error increases our allowance for efficient costs from £22.051m to £24.238m.	• Formula error in the F_Inputs_adjusted sheet, column R and S, row 94. • Excludes 0.103 from the total 0.738 for PE served (in 000s), leaving only 0.635 to go through to modelled costs. • Ofwat acknowledged the error but has said it would not correct it on the basis that it does not meet the criteria to be unambiguous: it is not unambiguous that an error was made, and it is not straightforward to correct.	Correct this error by allowing our efficient costs of £24.328m for septic tanks.