

By email to waterPR24references@cma.gov.uk

Water UK's response to the Competition and Markets Authority's working paper on base costs modelling

We welcome the opportunity to comment on the Competition and Markets Authority's [working paper on base costs modelling](#) as part of its redetermination of the 2024 price review (PR24) for five water companies. We respond as the trade association for water companies in England, Wales, Northern Ireland and Scotland.

Summary

We are concerned that the Competition and Markets Authority's proposed approach to setting base expenditure allowances risks entrenching serious underfunding for the five water companies subject to the redeterminations. Underfunding water company plans, particularly for capital maintenance, could lead to more leaks, more sewage spills and more supply outages than would otherwise occur for the more than 7 million households served by the water companies subject to the redeterminations.

Without challenge, the proposed approach could have far-reaching implications for the entire water sector should similar approaches be applied at the next price review. To illustrate the scale of the investment risk, the Competition and Markets Authority has indicated that as much as £3 billion¹ will be cut from the whole sector's investment programme if the Competition and Markets Authority's decisions are applied to all water companies in England and Wales. As the UK and Welsh Governments reform the regulation of the water sector, we believe they should set out clearly that new approaches will not automatically take the Competition and Markets Authority's approach as its starting point and should represent a clear break from the past.

We are also deeply concerned that the Competition and Markets Authority proposes to entirely rely on econometric modelling that appears to be empirically invalid when set against observable evidence. This kind of 'faith-based' reliance on econometrics has been roundly criticised by independent analysis such as the Independent Water Commission.² The Competition and Markets Authority's approach appears to double down on an excessive use of econometric models with scarce regard to engineering realities, as well as an overreliance on questionable assumptions that appear to lead to even worse outcomes than under Ofwat's models, which

¹ Aggregated water and wastewater base allowances compared to the *equivalent* Ofwat PR24 final determination figures from the ['Water PR24 References: Base Costs Modelling – Working Paper'](#), pg. 22 & pg. 33, *Competition and Markets Authority*, (December 2025).

² See, for example: "Ofwat has relied too heavily on a data-driven, econometric approach, and has not taken sufficient account of company-specific conditions and challenges" and "econometric benchmarked outputs [should be] balanced with company-specific and expert supervisory judgement" in ['Independent Water Commission: Final report'](#), pg. 193-194, *Independent Water Commission*, (July 2025).

themselves have been subject to significant criticism by numerous independent reports. However, we believe these issues are surmountable.

We strongly recommend that members of the Competition and Markets Authority panel carefully consider how they can overcome shortcomings in the proposed modelling approach. We set out a range of practical options that could be considered for the final determinations, which are due in March 2026.

The rest of this response sets out:

1. The problem of the serious underfunding caused by the Competition and Markets Authority's proposed approach;
2. The causes of the underfunding within the Competition and Markets Authority's proposed approach;
3. The practical steps the Competition and Markets Authority could take to resolve these issues in its final determinations.

1. The problem of serious underfunding

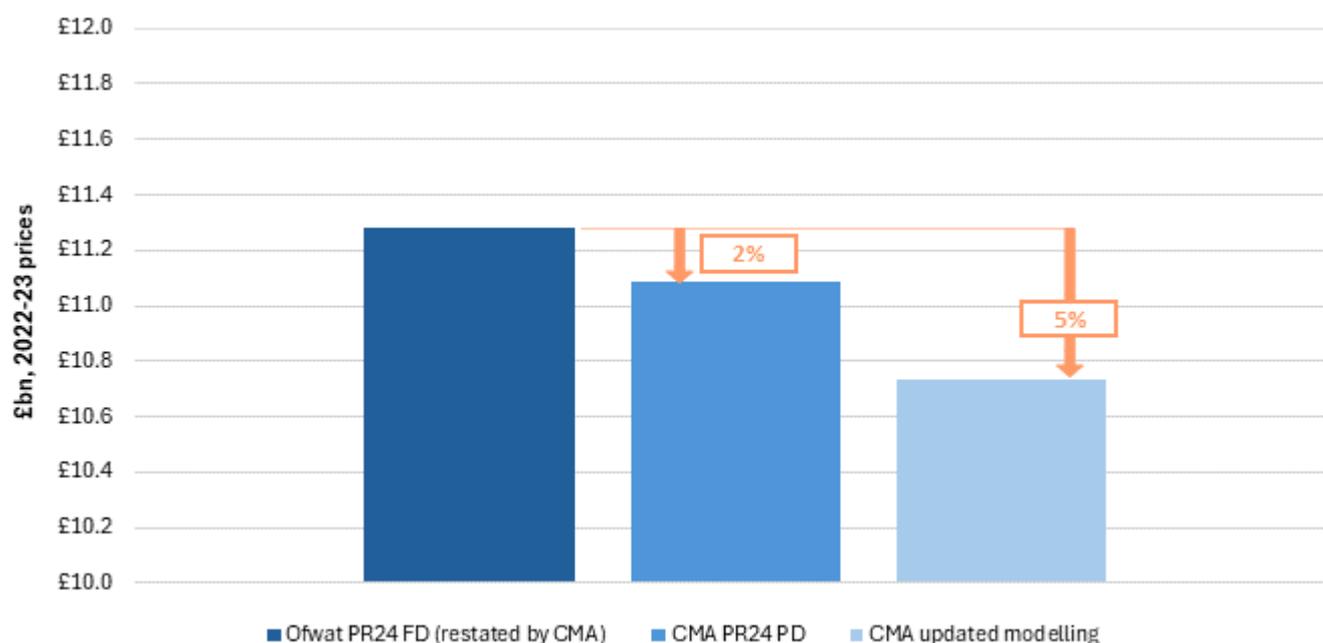
Base expenditure allowances are critical for ensuring water companies can operate their assets effectively and carry out the maintenance and replacement of infrastructure. They make up the bulk of the industry's investment plans for 2025-30 and are critical for reducing the level of leakage, sewage spills and supply outages for customers.

We are therefore concerned by the Competition and Markets Authority's proposed approach to make even deeper cuts to the base and maintenance plans proposed by water companies than both Ofwat and its own provisional determinations. The Competition and Markets Authority suggests that its decisions would cut expenditure allowances for the five water companies by £540 million (or 5%) over 2025 to 2030, a deeper cut than the £193 million (or 2%) it proposed in its provisional determinations.³ This serious underfunding would have severe consequences for more than 7 million households and the natural environment. We estimate that it is equivalent to not funding almost 1,700 kilometres of water mains renewals – greater than the length of Great Britain, from Land's End to John o' Groats.⁴ Fewer mains renewals will in turn contribute to higher leakage and more supply outages than what water companies had proposed in their business plans.

³ Both comparisons are based on Competition and Markets Authority's restatement of Ofwat's PR24 final determinations and former's PR24 provisional determinations in the '[Water PR24 References: Base Costs Modelling – Working Paper](#)', pg. 22 & pg. 33. *Competition and Markets Authority*, (December 2025)

⁴ Calculated with a unit rate of £300 per metre, as used by Ofwat in its PR24 final determinations and the Competition and Markets Authority in its PR24 provisional redeterminations. See '[Provisional Determinations Volume 1](#)', pg. 139 and 145, *Competition and Markets Authority*, (October 2025).

Figure 1 - Water and wastewater allowances for disputing companies, £bn 2022-23 prices



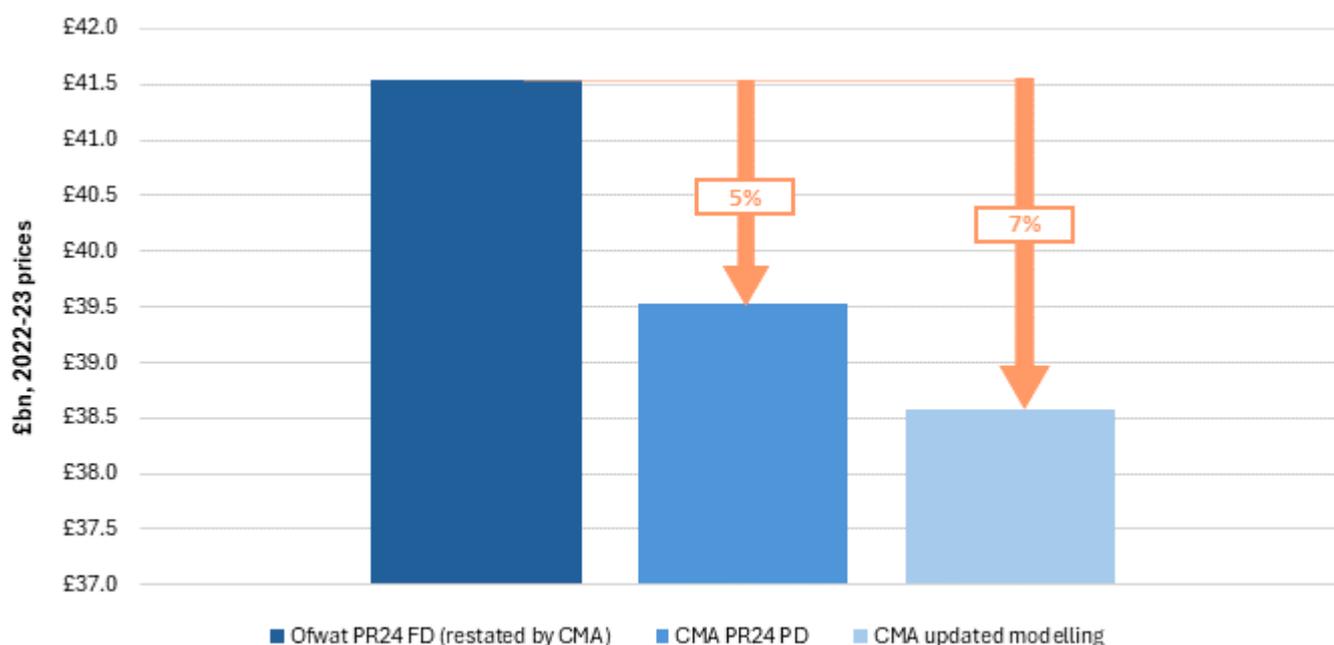
Source – Tables 3.3 and 4.3, ‘Water PR24 References: Base Costs Modelling – Working Paper’, pg. 22 and 33, Competition and Markets Authority, (December 2025).

We are also concerned that, without challenge, if the same approach that the Competition and Markets Authority has used is taken forward at the next price review, then the whole sector could be underfunded. To illustrate the scale of the investment risk, the Competition and Markets Authority has indicated that as much as £3 billion (or 7%) would be cut from the sector’s investment programme if the Competition and Markets Authority’s decisions are applied to all water companies in England and Wales.⁵ That is the equivalent to cutting the funding for renewing 10,000 kilometres of water mains, which is nearly the distance from London to New York and back again.⁶ This would have even more serious impacts for customers and the environment, with even more leaks and outages compared to water company plans.

⁵ Aggregated water and wastewater base allowances compared to the *equivalent* Ofwat PR24 final determination figures from the ‘Water PR24 References: Base Costs Modelling – Working Paper’, pg. 22 & 33, Competition and Markets Authority, (December 2025).

⁶ Calculated with a unit rate of £300 per metre, as used by Ofwat in its PR24 final determinations and the Competition and Markets Authority in its PR24 provisional redeterminations. See ‘Provisional Determinations Volume 1’, pg. 139 and 145, Competition and Markets Authority, (October 2025).

Figure 2 - Water and wastewater allowances for the industry, £bn 22-23 prices



Source – Tables 3.3 and 4.3, ‘Water PR24 References: Base Costs Modelling – Working Paper’, pg. 22 and 33, Competition and Markets Authority, (December 2025).

Underlying our concerns is the widespread recognition that base expenditure allowances have been historically underfunded by Ofwat, and that the Competition and Markets Authority’s proposed approach makes matters worse.

As shown by outturn expenditure data, water companies have significantly overspent their historic expenditure allowances. Between 2020 and 2025, sector-wide base expenditure exceeded allowances set by Ofwat by around £4.6 billion (13.5%), with 15 of the 17 water companies overspending against their base expenditure allowances. For the disputing companies this effect was even higher, with a 19% overspend compared to allowances.⁷ Observing consistent overspending, the National Audit Office concluded that this was due to regulators lacking a “shared understanding of the condition of water and wastewater assets, and the level of funding needed to maintain them”.⁸ The Public Accounts Committee similarly concluded that “Ofwat and the Environment Agency have not done enough to ensure companies actively manage their infrastructure [and that] at the current rate of replacement, it would take companies 700 years to replace the entire water mains network.”⁹

While the Competition and Markets Authority’s proposed approach would appear to set base expenditure allowances that would be higher than Ofwat’s allowances at PR19, they would still be highly unlikely to be sufficient. Our analysis shows that the Competition and Markets Authority’s proposed approach will not keep pace with:

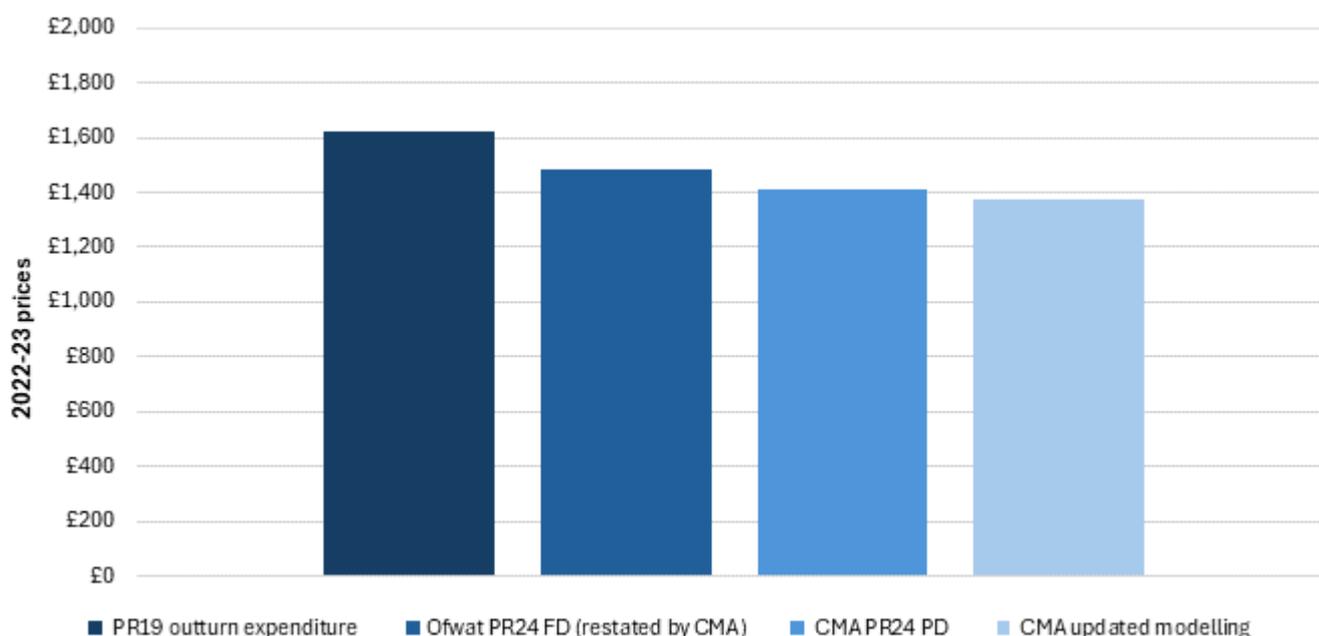
⁷ ‘Water company performance report 2024-25’, pg. 43, Ofwat, (October 2025).

⁸ ‘Regulating for investment and outcomes in the water sector’, pg. 9, National Audit Office, (April 2025).

⁹ ‘Water sector regulation’, pg. 1 and 3, Public Accounts Committee, (July 2025).

- a. **Population and business growth.** On a per connections basis, the proposed allowances are significantly lower than what water companies actually spent over 2020-25, reflecting a cut of 15% from around £1,622 to less than £1,400 per connection. This is shown in Figure 3.

Figure 3 - Water and wastewater allowances per connection for the industry, 2022-23 prices¹⁰



Source – PR19 outturn expenditure: ‘Data for the Water Company Performance Report 2024-25’, Ofwat, (October 2025). All other expenditure data: Tables 3.3 and 4.3, ‘Water PR24 References: Base Costs Modelling – Working Paper’, pg. 22 and 33, Competition and Markets Authority, (December 2025). Connection figures (BN2161 and BN2221): ‘Base costs – water model 1’, Ofwat, (December 2024).

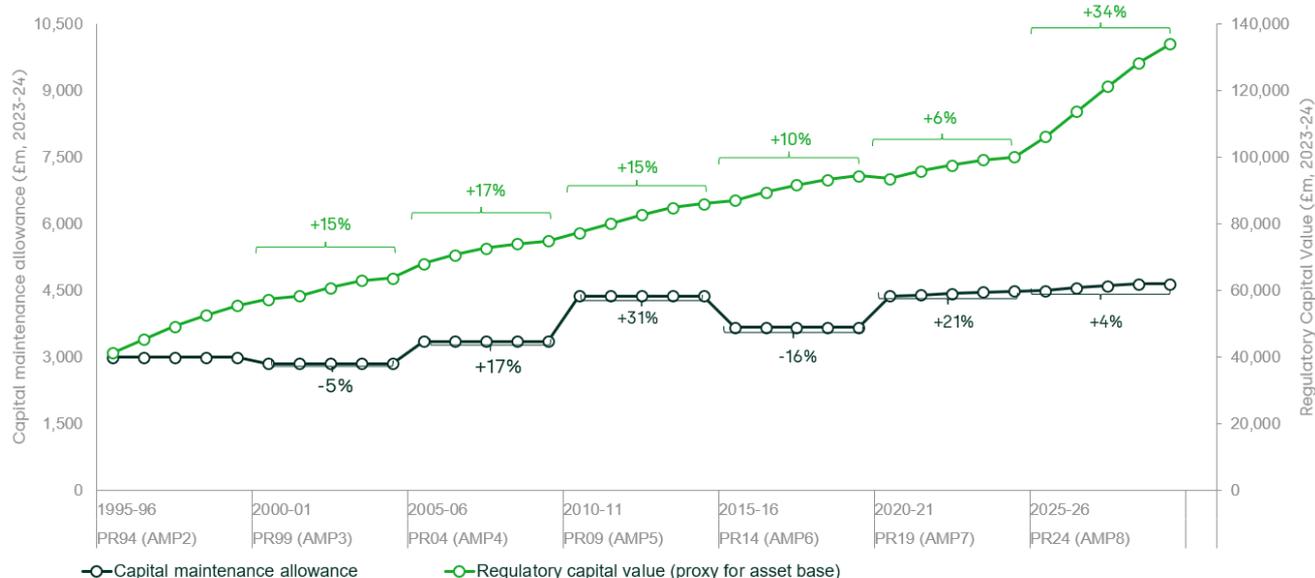
- b. **Investment.** The capital maintenance allowances implicit in the proposals would not keep pace with past and future investment. Compared to Ofwat’s final determinations, the Competition and Markets Authority has halved the increase in capital maintenance allowances over the next five years (from an increase of 8% to 4%). Analysis by Oxera estimates that capital maintenance allowances have failed to keep pace with growth in new assets and their future replacement needs. Under the Competition and Markets Authority’s proposed approach for PR24, capital maintenance allowances for water companies would only increase by

¹⁰ Note that the allowances we present in Figure 3 are pre-frontier shift, as per the Competition and Markets Authority’s base costs modelling paper, and thus underestimate the decrease in allowances per connection. ‘Ofwat PR24 FD (restated by CMA)’ refers to the Competition and Markets Authority’s adjustment of Ofwat’s final determination allowances by including differences in regional wages, economies of scale at water treatment works, and energy costs in the econometric modelling: ‘Ofwat PR24 FD (including RPEs)’ in Tables 3.3 and 4.3, ‘Water PR24 References: Base Costs Modelling – Working Paper’, pg. 22 and 33, Competition and Markets Authority, (December 2025). We inflate PR19 outturn expenditure from 2017-18 to 2022-23 prices.

only around 55% compared to PR94, despite the sector’s regulated asset base (a proxy for investment) increasing by approximately 230% over that same period.¹¹

Figure 4 – Capital maintenance and Regulatory Capital Value (PR94 to PR24)¹²

From PR94 to PR24 RCV has increased by c.230%, while capital maintenance allowances have increased by c.55%



© Oxera

1

Source: Oxera analysis based on the Competition and Markets Authority’s provisional determinations and base costs working paper, produced for this submission (January 2026).

2. The causes of serious underfunding

We are concerned that the proposed approach runs counter to the sector reforms that have been recommended by the Independent Water Commission following its comprehensive review of the gaps, weaknesses and perverse outcomes inherent in the current arrangements for economic regulation. The Independent Water Commission concluded that: “Ofwat has relied too heavily on a data-driven, econometric approach, and has not taken sufficient account of company-specific conditions and challenges” and that “econometric benchmarked outputs [should be]

¹¹ Oxera analysis based on the approach used in ‘[A new approach to performance and supervision in the England and Wales water sector](#)’, pg. 15, Oxera, (April 2025), updated for the Competition and Markets Authority’s base costs working paper.

¹² This analysis reflects the Competition and Markets Authority’s reduction in the frontier shift assumption (from 1% to 0.7%) and the reduction in modelled base allowances if they were applied to the whole industry’s PR24 base expenditure allowances. The Competition and Markets Authority has not published sector-wide post-modelling adjustments for all water companies and therefore the analysis continues to apply the sector-wide adjustments (such as for network reinforcement, metering and mains renewals) in Ofwat’s final determinations for PR24.

balanced with company-specific and expert supervisory judgement”.¹³ Indeed, the Commission concluded that Ofwat’s decisions since 2009 have led to underinvestment and come “at the expense of resilience and adequate capital maintenance”.¹⁴

The Competition and Markets Authority’s updated modelling approach appears to further entrench this overreliance on econometrics, with the use of a single model each for water and wastewater services. Ofwat’s approach was far from perfect, as remarked on by the Independent Water Commission – it relied on a set of models (none with more than 5 variables)¹⁵ to try and reflect the significantly varied operating circumstances of diverse regions and networks. And while Ofwat allowed water companies to request ‘cost adjustment claims’ to overcome shortcomings in its modelling, in reality Ofwat only departed from its models for around 6% of total expenditure at PR24 (and less than 1% at PR19).¹⁶

The Competition and Markets Authority seems to have put even more ‘blind faith’ in the accuracy of modelled outputs than Ofwat did. As well as using econometric techniques that are almost entirely untested in setting regulatory price controls, the Competition and Markets Authority’s updated approach reduces the number of models even further – from the 31 used by Ofwat at PR24¹⁷ to three in the Competition and Markets Authority’s provisional determinations – and now just two based on the latest working paper. Compounding this overreliance on an econometric approach is a seemingly scant regard for engineering realities. The Competition and Markets Authority has rejected almost every company-specific cost adjustment claim put forward¹⁸, instead relying in its final modelling outputs on a single model for each of water and wastewater. Those models attempt to singlehandedly explain the differences between operating areas and networks through just eight variables in the water model and just seven the wastewater model¹⁹. Fewer models limits the opportunity for cross-checks and triangulation, and increases the reliance on their outputs.²⁰ Even if fewer models are justified, we question the merits of applying excessively stretching efficiency challenges (such as the use of an upper quartile catch-up challenge) particularly when there is significant uncertainty around modelling outputs.

Exacerbating the Competition and Markets Authority’s approach is its apparent disregard of available evidence and data. For example, the Competition and Markets Authority appears to have not taken into account the latest available expenditure data (2024-25, published in July 2025)²¹, despite using the equivalent year of data in its PR19

¹³ [‘Independent Water Commission: Final report’](#), pg. 193-194, *Independent Water Commission*, (July 2025).

¹⁴ [‘Independent Water Commission: Final report’](#), pg. 202, 204, 332, *Independent Water Commission*, (July 2025).

¹⁵ [PR24 final determinations Expenditure allowances- base cost modelling decision appendix](#), pg. 64-80, *Ofwat*, (December 2024).

¹⁶ [‘Independent Water Commission: Final report’](#), pg. 177, *Independent Water Commission*, (July 2025).

¹⁷ 24 models for water and 7 for wastewater, See [PR24 final determinations Expenditure allowances- base cost modelling decision appendix](#), pg. 27-30, *Ofwat*, (December 2024)

¹⁸ [Provisional determinations – summary](#), pg. 12, *Competition and Markets Authority*, (October 2025).

¹⁹ [‘Water PR24 References: Base Costs Modelling – Working Paper’](#), pg. 19 and 30, *Competition and Markets Authority*, (December 2025).

²⁰ For both water and wastewater base cost modelling, 3 models are estimated, and then the model with best in-sample predictive performance is selected. See [‘Water PR24 References: Base Costs Modelling – Working Paper’](#), pg. 15 and 27, *Competition and Markets Authority*, (December 2025).

²¹ [‘Water PR24 References: Base Costs Modelling – Working Paper’](#), pg.7 (footnote), *Competition and Markets Authority*, (December 2025).

redeterminations and the significant importance of such data.²² Both 2024-25 data, and all of the evidence pointing to the need for higher maintenance allowances to support the historic and future investment programme (such as the analysis above that shows the gap between investment and maintenance allowances) suggest that further action is needed. At the very least, we think the Competition and Markets Authority should consider whether its modelling outputs are likely to be sufficient and whether further interventions when setting final allowances are required in order to meet its duties to provide water companies with sufficient funding to meet their legal obligations.

3. The practical steps the Competition and Markets Authority could take

We consider the issues that we have identified are surmountable and we suggest below a set of practical steps that the Competition and Markets Authority could take to overcome them, particularly should it decide to retain its overall modelling approach to base expenditure.

As we set out above, getting this right is of critical importance to improve outcomes for customers and the natural environment in the areas served by the five water companies subject to the redeterminations. It also provides an opportunity for the Competition and Markets Authority to ensure that its decisions are more, rather than less, supportive of changes recommended by the Independent Water Commission in the context of the UK Government's ambitions for economic growth and water sector reform.

Our members will provide their own views on the specific steps that the Competition and Markets Authority should take in its final determinations. Should the Competition and Markets Authority decide to retain its overall approach to modelling base expenditure, we consider there is merit in considering the following set of practical steps that could help to overcome the shortcomings with its modelling approach that we have identified:

- a. **Make use of all available data.** That should include the latest data from 2024-25 in the base costs models, which the Competition and Markets Authority has previously indicated it would consider including,²³ as well as evidence of historic underfunding of capital maintenance, especially compared to the level of investment and capital maintenance allowances over time.
- b. **Take a more proportionate approach to efficiency challenges.** The current approach of using an upper quartile value, rather than for example the median, for the catch-up efficiency challenge not only perpetuates previous approaches that have been proven to have led to underinvestment, but also puts excessive weight on the statistical reliability of modelling outputs. Instead, using a value closer to the median would not only be more reflective of an average company – the use of an upper quartile value implies that only around a quarter of water companies are efficient, which seems implausible – it would also help to reduce the potential impact of outlier data points.
- c. **Reassess base cost adjustment claims.** Given the limitations of the Competition and Markets Authority's models, it should reconsider the cost adjustment claims for base expenditure that it previously rejected in the provisional determinations, particularly given its decision to reject all claims for cost categories either not included in the Competition and Markets Authority's modelling or its revision to 'what base buys'.²⁴

²² 'Final Report', pg. 129, *Competition and Markets Authority*, (March 2021).

²³ 'Provisional Determinations Volume 1', pg. 38, *Competition and Markets Authority*, (October 2025), and 'Water PR24 Redetermination references: Approach and prioritisation', pg. 24, para 98, *Competition and Markets Authority*, (May 2025).

²⁴ 'Provisional determinations – summary', pg. 12-13, *Competition and Markets Authority*, (October 2025).

- d. **Provide strong direction to Ofwat (and the future regulator) on how the cost change process should ensure that water companies have sufficient opportunity to request additional expenditure for activities to support asset health and capital maintenance.** As we set out in our response to the provisional redeterminations, clear recommendations rather than ‘suggestions’ are more likely to be taken into account by the economic regulator in this area of critical importance – particularly as Ofwat is due to take decisions on these matters as soon as this year.²⁵

Recognising the limited time available to set final determinations for the five water companies – which must be set by 17 March 2026 under the statutory deadline – we suggest that the Competition and Markets Authority takes an approach that is more in keeping with that of the PR19 redeterminations, where it made use of targeted engagement with water companies and stakeholders on approaches that the panel was considering.

Beyond the redeterminations, we believe that as the UK and Welsh Governments reform the regulation of the water sector, they should set out clearly that new regulatory approaches will not automatically take the Competition and Markets Authority’s approach as its starting point and should represent a clear break from the past.

²⁵ [‘Water UK’s response to the Competition and Markets Authority’s provisional determinations for PR24’](#), *Water UK*, (October 2025).