Response to the CMA's Updated PR24 Base Costs Modelling

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On October 9, 2025, the CMA published its Provisional Determinations (PR24 PD) for the PR24 Water Price Redeterminations. The base cost modelling in the PR24 PD represented a significant departure from the modelling approach taken by Ofwat at Final Determinations. As a water company operating under the same regulatory regime as the disputing companies, Portsmouth Water is an interested third party and submitted a third-party response to the consultation in which we expressed our concerns with the CMA's approach to base cost modelling and, in particular, the CMA's use of the LASSO regression technique.

Following stakeholder submissions, the CMA published a base cost modelling working paper on December 18, 2025. We continue to have significant concerns around the CMA's approach to base cost modelling, which we outline in this short note. In summary:

- The CMA's revised approach does not address the issues that we set out in our response to the PR24 PD.
- The CMA's revised approach exacerbates our concerns around the use of automated, data-driven modelling approaches, and moves even further away from the recommendations made by the Independent Water Commission.
- The process followed by the CMA has not enabled proper scrutiny of the models, which is all the more problematic given the degree of change involved and the risk that the CMA's approach is treated as precedent for future regulatory determinations.

The CMA has not addressed the issues we raised in response to the Provisional Determinations

We raised a number of concerns with the CMA's PR24 approach in our previous submission. The CMA has not addressed or responded to those concerns, all of which continue to apply (and in some cases are exacerbated) with the revised models. Specifically:

- The approach taken by the CMA continues to represent a substantial departure from the Final Determinations, without sufficient justification of the CMA's choices. The PR24 cost modelling approach was extensively consulted on and built on methodologies and in-depth sector knowledge developed over the course of many price controls. While substantial methodological change is not an issue in principle, and is within the remit of the CMA, the evidential bar for introducing such changes should be high. In our view, the changes introduced by the CMA at PR24 PD have still not been sufficiently justified, and the revised approach (in particular, the use of principal component analysis, which we discuss further below) brings new limitations and drawbacks that have not been adequately recognised.

- The LASSO approach selects variables based only on their statistical properties and not on the underlying economic or engineering rationale for whether and how those variables will drive costs. The CMA's updated LASSO modelling, combined with the use of principal component analysis, has produced outcomes that are arguably even more difficult to interpret. The CMA argues that *"while interpretability can provide a useful sense check, we consider that it is not the primary objective of benchmarking. The primary objective is to deliver accurate cost predictions and to identify relative efficiency across companies."*[1] In our view, interpretability is a fundamental part of assessing whether a model can deliver accurate cost predictions. If model results cannot be clearly interpreted and understood, there is a risk that the model is not correctly capturing real-world relationships, and therefore not accurately modelling costs.

- In our PR24 PD response, we said that the CMA had not sufficiently interrogated, understood or explained the large changes in efficiency scores and allowances between the Ofwat Final Determinations and its PR24 PD. The CMA's updated modelling results in another set of large swings in efficiency scores and allowances across the industry (where changes relative to the PR24 PD are as high as 17%), which again has not been sufficiently scrutinised or explained. Given the material impact that these changes have on base cost allowances, it is important that there is a clear understanding of what is driving them, and whether those drivers make sense. Furthermore, these unexplained swings highlight the volatility and lack of interpretability of heavily data-driven models.

- The CMA has not addressed our concerns about the precedent that could be set by the CMA's decision to employ LASSO as the primary basis for its cost benchmarking. Using LASSO, model selection is dictated by statistical properties (such as model fit) rather than through engagement and consideration of the underlying economic and engineering drivers of cost. This lack of transparency risks weakening the shared understanding between regulators and companies of the rationale for cost differentials. Such an approach also makes it more difficult for companies to engage meaningfully with the regulator, both in understanding the determinants of their modelled efficiency and in raising legitimate company-specific adjustments to the benchmarking approach.

- The Independent Water Commission (IWC) recommended that econometric benchmarking should be balanced with company-specific evidence and expert supervisory judgement. The CMA's use of LASSO represents a step away from the direction of reform advocated by the IWC, diminishing the role of expert supervisory judgement in designing models and interpreting results. While we acknowledge that it is not for the CMA to implement the recommendations of the IWC Review, its approach nevertheless carries important implications for the sector's future regulatory direction which we believe it is important for the CMA to recognise in its Final Determinations.

The revised approach exacerbates concerns around the use of automated, data-driven modelling approach

The CMA has introduced the use of principal component analysis (PCA) in its updated methodology, to address statistical issues caused by including highly correlated variables in regression models (multicollinearity). The CMA applies PCA to groups of cost drivers (such as scale or population density measures) that are highly correlated and derives "composite indices" that it uses as explanatory variables.

[1] CMA (18 December 2025) Water PR24 References, Base Costs Modelling – Working Paper, paragraph 2.15.

In our view this exacerbates, rather than addresses, many of the issues that were present in the CMA's PR24 PD models. Interpretability of the results is even more challenging, making it difficult to assess whether the models are correctly capturing real-world relationships between costs and cost drivers. Transparency is reduced, making it more difficult for companies and other stakeholders to understand what is driving the results.

There are also technical limitations and risks associated with the use of PCA, such as loss of potentially important information from the data, and sensitivity to outliers. The CMA does not acknowledge these limitations.

Overall, the CMA's use of PCA represents a further move away from the IWC's recommended direction of travel, placing more weight on mechanistic, data-driven techniques, and less on company-specific evidence and expert judgement.

The CMA's process has not enabled sufficient scrutiny of the models

Finally, the CMA's consultation process on base cost modelling has not allowed sufficient scrutiny and stress-testing of the models. Following the publication of the PR24 PD, detailed engagement and consultation took place only with the five disputing companies, even though the issues are of relevance to the wider sector, and that the modelling approach risks being treated as precedent for future regulatory determinations. For example, the CMA did not publish or provide its original models to third parties. Similarly, we have only received the modelling files for the updated approach following a proactive request to the CMA. This has limited our ability to engage meaningfully with the underlying analysis.

Furthermore, the window to respond to the base cost consultation (18 December 2025 to 7 January 2026) was insufficient in length given that it fell during the Christmas holiday period, especially given the significant methodological changes made by the CMA. While this response provides our high-level reflections, we have been unable to provide a detailed technical assessment of the CMA's methodology in the time available.

These process issues mean it is even more important that the CMA clarifies in its Final Determinations that its modelling approach should not be treated as precedent for the whole sector in future price controls.

Conclusion

Given the concerns outlined above and in our previous submission, we urge the CMA to confirm in its Final Determinations that the use of LASSO and PCA techniques in the context of the PR24 redeterminations does not imply that they are appropriate for future price controls impacting the whole sector, and should not be treated as precedent to be followed by regulators. The CMA provided similar guidance on precedent in its Final Determinations on the Energy Licence Modification Appeals 2021, in relation to the setting of the catch-up efficiency challenge.[2]

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[2] Energy licence modification appeals, Final Determinations Volume 3, paragraph 12.142.