Contents

1. Introduction

1.1 We welcome the CMA's pragmatic and proportionate approach to selecting base cost models, and the additional steps the CMA has undertaken to address the key points we and other parties raised in response to its provisional determinations.[1][2] We continue to offer support to the CMA on areas like the real price effect (RPE) true-ups if further clarity and assistance is needed.

1.2 We set out a summary of our key points below.

Summary of key points

1.3 **Improved base cost models**: We support the CMA's further engagement and the improvements made to its base cost modelling approach, especially the stronger emphasis on economic and engineering rationale and enhanced robustness testing, which are both core PR24 cost modelling principles.

1.4 **Upper quartile efficiency challenge**: We support the application of an upper quartile catch-up efficiency challenge, which is widely adopted by regulators and was used by all water companies to develop PR24 business plans. The upper quartile catch-up efficiency challenge is more stretching than that applied in our final determinations, resulting in lower allowances, similar to the CMA's provisional determinations. We agree with the CMA that this is largely due to the inclusion of energy and input prices in the base cost models, meaning the challenge is not overly stringent. It is also consistent with the catch-up efficiency challenges applied at previous price reviews. Given the higher predictive power of the CMA's models, we encourage consideration of a more stretching efficiency challenge, as seen in other sectors (e.g. Ofgem's 85th percentile benchmark at RIIO-2), particularly if the CMA continues with a 0.7% frontier shift efficiency challenge. Lower cost allowances compared to PR24 final determinations are not inconsistent with a full redetermination; a redetermination should not guarantee increased allowances.

1.5 **Targeted cost adjustment claim feedback**: We welcome the CMA's request for feedback on South East Water's economies of scale at water treatment works and Southern Water's coastal cost adjustment claims. We support including explanatory variables in base cost models where they are supported by strong economic and engineering rationale and robust data. Where such variables do not deliver reliable results, such as the economies of scale variable in the CMA's provisional determination models, a symmetrical cost adjustment may be appropriate as a second-best solution to protect

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[1] Ofwat, 'Ofwat's response to the CMA's Provisional Determinations'
[2] Ofwat, 'Ofwat's Response to Base Cost Modelling'

customers from one-sided outcomes.[3] At PR24 final determinations, we accepted the rationale for the economies of scale variable but did not apply it sector-wide due to concerns over robustness and limited stakeholder scrutiny.[4] We agree that the proportion of coastal load has a better engineering rationale than the proportion of coastal population.[5] Any revised models should be subject to thorough robustness testing to ensure fair and intuitive outcomes for both customers and companies.[6] We would welcome the opportunity to comment on any changes to the CMA's provisional decisions on other base cost adjustment claims (to include its assessment of any other relevant assessment criteria, that it did not reach a provisional view on as part of its overall decision) to support a transparent and robust consultation process.

1.6 **Further engagement on other topics**: Given the CMA has requested input in relation to targeted matters in its working paper, we have confined comments to those matters. We are aware that responses to the CMA's provisional determinations raised issues relating to other novel and/or untested elements (e.g. its 'Stable ERP' approach). We ask the CMA to apply a similarly thorough engagement approach to inform its final decisions on these elements, particularly where new evidence has been submitted but not tested in hearings or further responses. We also ask for similar treatment of retail allowances, should the CMA decide to update these for final determinations, given its previous decision to deprioritise residential retail cost allowances and the fact that 11 out of 17 companies received a retail allowance more than they requested in business plans.

Structure of response

1.7 The remainder of our response is structured as follows:

- CMA's revised base cost modelling approach;
- CMA's proposed cost adjustment claim approach; and
- CMA's proposed approach to RPE true ups.

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[3] [OF-CA-001] Ofwat, 'Creating tomorrow, together: Our final methodology for PR24: Appendix 9: Setting expenditure allowances, page 32
[4] Ofwat, 'Base cost adjustment claim feeder model – Southern Water'
[5] Ofwat, Response to Provisional Determinations – Base and Enhancement, Table 1
[6] Ofwat, 'Base cost adjustment claim feeder model – Southern Water'

2. CMA's revised base cost modelling approach

2.1   We welcome the CMA's updated approach to base cost modelling, which includes retaining the LASSO-based methodology, while undertaking additional work to address the key concerns raised by us and other parties in response to the CMA's provisional determination.

2.2   We support the CMA's proposal to remove interactions between energy and wage input price variables and scale variables. This aligns more closely with economic intuition regarding the relationship between company costs and input prices, and directly responds to the issue highlighted in our response to provisional determinations.[7]

2.3   We also support the adoption of Principal Components Analysis (PCA) to address multicollinearity among density and scale variables. While PCA may reduce the interpretability of model results, it effectively mitigates the risk of counter-intuitive relationships that can arise from including multiple density drivers, as raised in our provisional determination response.[8] We recognise the CMA's decision to prioritise accurate cost predictions and robust efficiency assessments, even where this reduces the interpretability of estimated model coefficients.

2.4   We welcome the shift to Least Angle Regression (LAR) for solving the LASSO optimisation problem. This change seems to enhance model stability and avoids selection bias that can result from the ordering of variables in the code.

2.5   Transparency in model robustness and performance is crucial. The CMA's extensive use of robustness tests, including sensitivity analysis and statistical testing, will help build stakeholder confidence and aligns with our own approach to model validation. We particularly appreciate the CMA's efforts to ensure that model results are consistent with engineering and economic rationale, and that they remain stable under different data realisations.

2.6   We note that the revised models result in a more stringent upper quartile efficiency challenge compared to our PR24 final determinations. We agree with the CMA that this higher challenge is largely explained by the inclusion of energy and input prices, meaning it is not overly stringent. In our final determinations, we identified a risk of base allowances being set too high due to potential overlap between energy cost adjustment and the catch-up efficiency challenge.[9] The CMA's inclusion of input price measures mitigates this risk. While we previously raised concerns that including input price measures could capture unrelated cost variation,[10] this risk appears to be less of a

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[7] Ofwat, 'Response to Provisional Determinations – Base and Enhancement', Table 1
[8] Ofwat, 'Response to Provisional Determinations – Base and Enhancement', Table 1
[9] [OF-OA-022] Ofwat, 'PR24 final determinations: Expenditure allowances', page 27
[10] Ofwat, 'Response to Provisional Determinations – Base and Enhancement', Table 1

concern in the CMA's latest models as the estimated coefficients on both the labour and energy price indices are broadly in line with prior expectations (ie sector average cost proportions). We also agree with the CMA that its upper quartile efficiency challenge is consistent with the catch-up efficiency challenges applied at previous price reviews.

2.7   Overall, we support the continued use of the upper quartile benchmark, which is widely used by regulators and was used by all water companies in developing their PR24 business plans. Setting a less stringent catch-up efficiency benchmark than in our final determinations would be inconsistent with the CMA's view that its models perform better and deliver more accurate cost predictions. Given these improvements, we encourage the CMA to consider whether a more stretching catch-up efficiency challenge, such as Ofgem's 85th percentile benchmark at RIIO-2, may be appropriate, particularly if the CMA continues with a 0.7% frontier shift efficiency challenge.

3. CMA's proposed approach to cost adjustment claims

South East Water: Economies of scale at WTWs CAC

3.1　We support the CMA's proposed approach for assessing South East Water's cost adjustment claim (CAC) relating to economies of scale at water treatment works (WTWs). This approach broadly aligns with the methodology we adopted for estimating the value of this CAC at PR24 final determinations.

3.2　We welcome the CMA's intention to include an economies of scale at WTWs variable in the water resources plus model. This is consistent with engineering rationale, as water resources plus costs are most directly influenced by water treatment costs, which account for 85 percent of the total.

3.3　The CMA's consideration of both the weighted average treatment size (WATS) variable and the average size of water treatment works variable (ie unweighted average) is appropriate. While both variables are similar, the WATS variable makes use of more granular information by reflecting the proportion of water treated in each size band, and may therefore be preferrable to a simple average.

3.4　In principle, we consider that any cost adjustment for economies of scale should be applied symmetrically, as all companies are impacted to varying degrees. At PR24 final determinations and in our response to the statements of case, we used the WATS variable to calculate adjustments for three companies only. We did not apply a sector-wide symmetrical adjustment due to:

- Concerns about the statistical significance and robustness of the water-WATS variable in the base cost models.
- The variable not being subject to the same level of scrutiny and consultation as others in our PR24 models.
- The partial capture of economies of scale at WTWs through density variables, with adjustments restricted to companies identified as outliers in the relationship between density and economies of scale at WTWs.

3.5　The CMA's modelling approach places greater emphasis on the predictive power of the models and the outcomes of the LASSO methodology. If the CMA is less concerned about statistical significance and potential interactions between the economies of scale at WTWs variable(s) and other variables, it would be appropriate to apply a symmetrical adjustment for economies of scale at WTWs, as described in the CMA's base cost modelling working paper. The CMA should continue to apply the same model robustness and sensitivity tests as set out in its working paper, and ensure that the model estimation results align with economic and engineering rationale, noting that the

average size of WTWs variable in the CMA's provisional determination water resources plus model did not present the expected sign.

Southern Water: coastal population CAC

3.6   We support the CMA's intention to test the use of Southern Water's coastal population variable in a separate version of the sewage treatment works (STW) model. Coastal operations primarily affect sewage treatment work costs, so any variable should be tested within this model.

3.7   We support including explanatory variables in base cost models that are supported by strong economic and engineering rationale and robust data. Given the limited engineering rationale linking coastal population directly to costs, and as coastal population is only an indirect measure of coastal operations, we do not consider it suitable for inclusion in the standard set of variables for the LASSO approach.

3.8   Instead, we consider this modelling should form part of a broader toolkit used for assessing the cost adjustment claim (CAC). The decision to apply a CAC should not rest solely on econometric modelling.

3.9   Assessment of the CAC should also consider criteria such as unique circumstances, need for adjustment, and the cost efficiency of any proposed adjustment. This is consistent with Ofwat's approach at PR24 and with the CMA's own assessment of unique circumstances in its provisional determinations. The CMA should also take into account the views of other disputing companies, which have highlighted that the costs of operating in coastal areas versus inland can be influenced by multiple factors, and that inland sites may sometimes face higher costs.

3.10   Whether or not the LASSO approach selects the coastal variable, the CMA should consider whether the modelling outcome is intuitive and representative of the impact claimed by the company. The purpose of the cost adjustment claim process is to reflect the impact of specific, well-evidenced factors affecting company costs that are not already captured in the models. It should not be used to address perceived deficiencies in the base cost models more generally.

3.11   If the modelling approach produces counter-intuitive results, this calls into question the robustness of the adjustment. For example, in Ofwat's PR24 final determination models, the coastal population variable suggested a positive adjustment for Thames Water, which has no coastal operations, and little or no adjustment for other companies with substantial coastal populations such as South West Water. While such results may be statistically explainable, they do not reasonably represent the cost impacts of operating in coastal areas.

3.12 We support the CMA's view that variables other than coastal population, such as coastal load, may better capture the costs associated with coastal operations. We welcome the CMA's exploration of a coastal load variable, though it will be important to ensure the underlying data is sufficiently robust.

3.13 Should the CMA determine that a cost adjustment is warranted, we consider that it be applied symmetrically across all companies. If coastal operations are affected by factors outside company control, these factors are likely to impact all companies with coastal operations to some extent. Furthermore, higher costs for coastal operations should already be reflected in the base cost models, providing an implicit allowance to all companies, including companies that only operate inland sewage treatment works. A symmetrical adjustment would help ensure that consumers do not overpay.

Southern energy costs and regional wages

3.14 We agree with the CMA's proposal not to allow these cost adjustment claims (CACs) as the impact of energy costs and regional wages on base costs is captured through the inclusion of input price variables in the base cost models.

4. CMA's proposed approach to RPE true-ups

4.1 We appreciate the additional detail of the CMA's intended approach to reconciling allowances at the end of the period, reflecting actual energy prices and wages.

4.2 The true-up should only account for differences between the forecast and outturn values of the energy price and wage indices used to set ex-ante allowances.

4.3 The CMA's proposed approach is broadly sensible, and we agree that the true-up should be transparent and proportionate. However, we seek further clarity on why the CMA prefers not to use estimated model coefficients for the true-up. An alternative approach would be to recalculate base cost allowances using the model estimated coefficients and outturn index values, with the adjustment being the difference between these updated allowances and those set at final determinations.

4.4 If the CMA retains its proposed approach, additional detail is needed on how the proportion of total costs attributable to wages or energy should be calculated. Specifically, the relevant time period, and whether this should be calculated at a sector or company specific level. In our PR24 final determinations, we set out the RPE assumptions that should be used for the true-ups in Tables 7, 8, 33 and 34.[11]

4.5 We also highlight the need to account for changes in the availability of the DESNZ energy price indices. The seasonally adjusted indices previously used have been discontinued, with only non-seasonally adjusted indices now available.

4.6 In our recent PR24 Reconciliation Rulebook: Policy Approach and Response document, we indicated our intention to calculate the energy cost adjustment true-up as the difference between the ex-ante adjustment using seasonally adjusted indices and the adjustment using outturn non-seasonally adjusted indices.[12] This ensures consistency with the indices currently available.

4.7 To align with this, the CMA could consider using the non-seasonally adjusted DESNZ electricity price index as the cost driver in its base cost models, with reference to outturn values of the index for the true-up. Alternatively, the CMA could retain its current base cost models but calculate the 'change in index' as the difference between the forecast and outturn percentage change in the non-seasonally adjusted DESNZ electricity price index over AMP8.

4.8 We could engage with the CMA further on this if helpful.

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[11] [OF-OA-022] Ofwat, 'PR24 final determinations: Expenditure allowances'

[12] Ofwat, 'PR24 Reconciliation Rulebook: Policy Approach and Response'