

**WSX09 -  
Annexes - Base  
cost adjustment  
claims**

June 2023 early  
submission



**Wessex Water**  
YTL GROUP

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# CAC1 – Increases to efficient costs over time

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*This supporting document is part of Wessex Water's business plan for 2025-2030.*

*More information can be found at [wessexwater.co.uk](https://www.wessexwater.co.uk)*

# Introduction and summary

## Introduction to the claim

This claim concerns increases over time in the efficient levels of base costs that Wessex Water faces which are not captured by the allowances derived from Ofwat's base cost econometric models (once these allowances are adjusted for RPEs and ongoing productivity growth and growth-related enhancements,).

This document is to be read alongside the completed cost adjustment data tables for this claim. This document provides supporting information in line with Ofwat's assessment criteria for cost adjustment claims as set out in Appendix 9 of the PR24 final methodology.

The efficient levels of base costs faced by Wessex Water have been affected by upwards pressures from a combination of factors which are overlooked or under-estimated in Ofwat's established approach to setting allowances for base costs. These factors are primarily:

- increases in base-plus costs over time to support improvements in performance captured by PCs and subject to financial incentives via ODIs;
- increases in base-plus costs over time as a result of the ongoing operational and capital maintenance associated with past enhancement expenditure; and
- increases in base-plus costs over time from broader sets of increasing regulatory requirements.

There is overlap between these three factors and we have not sought to disentangle them. Our claim relates to the joint effect of these interrelated factors to ensure they are not double counted.

In effect, these relate to the increases over time in base costs to achieve and *sustain* improvements over time in outcomes for customers and the environment.

Our claim concerns increases over time in the efficient levels of costs faced by Wessex Water. Nonetheless, to provide evidence to substantiate the claim, we draw heavily on cross-industry cost benchmarks. This aspect of our approach helps to avoid the risk that any cost increases in costs experienced by, or anticipated by, Wessex Water might be – or might be perceived as – due to inefficiency on the part of Wessex Water. It also recognises that, to some degree at least, the level of base-plus expenditure incurred by any one company may be subject to peaks and troughs over time.

## Scope of costs covered by the claim

This claim is focused on modelled base costs. However, we recognise that within what Ofwat calls 'base costs', there is some expenditure that is reported as enhancement expenditure by water companies (including enhancement expenditure which is not simply growth-related, such as expenditure to reduce sewer flooding risk).

In addition, we consider that the expenditure reported to Ofwat as base expenditure is likely to include significant elements of expenditure which is conceptually enhancement expenditure, but which is reported as base expenditure. The issue of hidden or embedded enhancement expenditure is discussed in more detail in the report we commissioned from Reckon in 2022, referred to later in this document.

In this context, this claim concerns "base-plus" expenditure (rather than pure base expenditure). That said, the claim is not concerned with changes over time in base-plus expenditure that are attributable to growth-related enhancements (e.g. to due variations over time and across companies in the rates of housebuilding and in

population growth). As at PR19, if Ofwat retains its approach of including growth-related and drainage-/flooding-related enhancement expenditure in its base cost models, Ofwat will need to make off-model adjustments to capture differences over time and between companies in the drivers of such expenditure. The principle of making such off-model adjustments is now an established part of Ofwat's approach to cost assessment and we have not sought to cover it within cost adjustment claims. We are keen to have opportunity to engage with Ofwat on the industry-wide methodology for these adjustments, to ensure improvements are made compared to the initial iteration at PR19.

The scope of costs covered in this claim excludes the element of base expenditure which Ofwat treated as unmodelled costs in its April 2023 base cost model consultation and excluded from the econometric benchmarking modes (e.g. pension deficit recovery costs, business rates, abstraction and discharge charges and third-party costs). When we present figures for changes over time in base expenditure or base-plus expenditure in this document, we have excluded unmodelled costs from the analysis and comparisons over time.

On this basis, the scope of costs covered by this claim might more precisely be referred to as "modelled base-plus expenditure", but to limit drafting complexity we do not use this terminology consistently throughout the document.

In the development of the analysis underpinning the claim, we considered all four wholesale price controls. However, our current analysis indicates that Ofwat's materiality threshold is not met for either water resources or bioresources. So the claim is focused on the water network plus and wastewater network plus price controls.

This claim does not cover residential retail costs, where we observe a significant downward trend in costs over time (relative to CPIH), rather than the increases in base costs over time that we observe for water network plus and wastewater network plus. In our response to Ofwat's PR24 base cost model consultation, we have recommended a time trend is used in residential retail cost models.

## Summary of the net value of the claim

In the table below we present our current estimate of the net value of the claim covered by this document. These are provisional figures based on current information and the assumptions set out in this document.

Table 1: Summary of net value of claim

	Water network plus	Wastewater network plus
Net value of the claim: aggregate for 2025-30	<b>£44m</b>	<b>£184m</b>

The figure is larger for the wastewater network plus price control because of the following:

- Modelled base costs are higher for Wessex Water's wastewater network plus price control compared to its water network plus price control.
- The historical scale of unaccounted for cost pressures that we identified are greater for Wessex Water's wastewater network plus price control compared to its water network plus price control.

We provide more detailed breakdown of the net claim values, as well as figures for implicit allowances and the gross value of the claim in the data tables corresponding to this claim.

We are not proposing that Ofwat make a symmetrical cost adjustment across the industry as part of this claim (i.e. positive adjustments for some companies and negative adjustments for others). Ofwat has recognised in its PR24

final methodology that where cost adjustment claims concern factors causing changes over time, which are not captured in the base cost models, there would not necessarily be a role for symmetrical cost adjustments.

## Interactions with other cost adjustment claims

As highlighted above, the claim covered in this document is for a *continuation* to the end of AMP8 of the estimated historical rate of increase in base costs that is attributable to ongoing improvements to outcomes and ongoing enhancements to regulatory requirements - insofar as these cost increases are not already incorporated within Ofwat's modelled cost benchmarks for the 2025-30 period.

Given the broad-ranging nature of the claim covered in this document, it is useful to distinguish between this claim and some other claims that Wessex Water is making for PR24.

We make a separate claim for the additional costs that we expect to be needed during AMP8 to allow for an efficient level of mains renewal. For this separate claim we are seeking an adjustment for increases in efficient costs in AMP8 that apply *over and above* the observed increases over time in modelled base-plus expenditure. In contrast this document concerns a claim for the continuation of historical observed trends in modelled base-plus expenditure.

We make a separate claim relating to energy price increases. This concerns the effects of increases in energy prices from 2022/23 onwards, insofar as these have not yet been reflected in the reported outturn cost data for water companies up to 2021/22. This claim is separable from the increases in modelled base-plus expenditure between 2011/12 and 2021/22 which are considered in this document.

We make a separate claim for the operating expenditure from continuation into AMP8 of catchment management and nature-based solutions from AMP7 and previous AMPs. The intention of this claim is to account for additional costs that Wessex Water incurs relative to other companies, due to a greater role for opex-based solutions for which the costs have not been funded via historical enhancement allowances. This separate claim is not intended to capture general industry-wide increases in operating expenditure arising from historical enhancements (this forms part of the claim covered in this document).

We make a separate claim relating to growth at water treatment works. Expenditure on growth at water treatment works is excluded from the scope of modelled costs used for Ofwat's April 2023 econometric models of base costs. It does not overlap with the claim presented in this document.

We make a separate claim relating to the impact of IED on bioresources costs. There is no overlap with the claim covered in this document which does not include bioresources activities within scope.

This set of cost adjustment claims concern a complicated set of factors, which we have assessed in the context of some significant data limitations. We will further review the boundaries that we have drawn between the claims for our business plan submission.

## Comments on completion of data tables

In the data tables corresponding to this document, we have completed information on the net value and gross value of the claim and implicit allowances for the period from 2025/26 to 2029/30 (i.e. AMP8), which is the focus of the claim. We explain how we have done this in section 2 of this document. We have not at this stage completed figures for prior years (e.g. 2023/24). Given the nature of the claim, this would add what seems to be unnecessary complexity to the calculations and to this document.

We have not completed the data table lines CW18.18 and CWW18.18, which are described in the Ofwat guidance as "Historic base expenditure related to the proposed cost adjustment claim". This claim concerns increases over

time in costs and hence costs which were not incurred historically so this line did not seem to be applicable. While we could have put a value of zero for the historical figures we were concerned that this could be misinterpreted when compared against the proposed adjustment for AMP8 and so we have left it blank.

## Structure of this document

This document is structured as follows.

Section 2 describes the methodology we have adopted to assess the need for a cost adjustment and for quantification of the adjustment. It presents evidence to support the claim and summarises key results.

The subsequent sections respond to questions from Ofwat's cost assessment criteria, referring back to section 2 in places. These sections are organised as follows:

- Need for adjustment.
- Cost efficiency.
- Need for investment.
- Best option for customers.
- Customer protection.

The appendix provides further information and evidence relating to step 2 of the methodology set out in section 2.

## Methodology and key results

In this section we describe and apply our methodology to (a) assess the need for the cost adjustment for Wessex Water and (b) quantify the adjustment. We also provide supporting evidence and summarise some key results.

In subsequent sections we address each of Ofwat's criteria for cost adjustment claims, referring back to this section or other evidence as appropriate. This section is most directly relevant to Ofwat's criteria relating to need for adjustment but also covers issues falling under some of the other criteria.

Our high-level methodology has four main steps, with further steps and elements of analysis within some of these. The four main steps are as follows:

- **Step 1: Estimation of historical unaccounted for cost pressures.** In this step, we compare (a) the annual average change in modelled base-plus expenditure over the 2011/12 to 2021/22 period which is implied by Ofwat's recent suite of base-plus econometric models, adjusted for assumptions on ongoing productivity growth and RPEs; and (b) the annual average change in observed modelled base-plus expenditure across the industry, over the same period, adjusted to remove the estimated impact of changes over time in growth-related expenditure. The difference between the two represents observed historical growth in modelled base-plus expenditure across the industry which is not accounted for by Ofwat's approach to base cost assessment (in the absence of this cost adjustment claim).
- **Step 2: Assessment of drivers of unaccounted for cost pressures.** In this step, we summarise our analysis and evidence on the factors that may help to explain the unaccounted for cost pressures identified in step 1.
- **Step 3: Judgement on the implications for efficient costs in AMP8.** In this step, we draw on the assessment under step 2, and some further considerations, to form a judgement on the extent to which the historical scale of unaccounted for cost pressures estimated for the period 2011/12 to 2021/22 should be extrapolated into AMP8, for the purposes of base cost assessment at PR24.

- **Step 4: Calculation of adjustment to apply to modelled costs.** In this step, we use the estimates of the historical average annual rate of growth in modelled base-plus expenditure which is not accounted for by Ofwat's models/approach (from step 1) and the judgement on the extent to which this should be extrapolated into AMP8 (step 3) and combine these with estimates of modelled costs for Wessex Water over the 2025-30 period (derived from Ofwat's April 2023 econometric models) to calculate a corresponding adjustment to apply to modelled costs for Wessex Water in AMP8.

We take in turn each of the steps in turn below. We provide further evidence and analysis relating to the assessment in step 2 in the appendix.

All monetary figures are in 2022-23 prices unless otherwise identified.

The approach and assumptions used in this section reflects our understanding of Ofwat's likely methodologies and approaches for wholesale cost assessment at PR24, based on current information, as well as its April 2023 base cost models. This is an appropriate approach for submissions at this stage of the PR24 process, but there may be a need to update the calculations in light of any material developments in Ofwat's approach, models and assumptions for PR24, as well as for new data that becomes available during the remainder of the PR24 process.

## Step 1: The historical impact of unaccounted for cost pressures

In this step, we present our analysis of the scale of increases in base expenditure experienced on average across water companies that are left unexplained by Ofwat's base cost econometric models and its broader approach to cost assessment. In this step we focus on the quantification of those increases; in step 2 we consider what may have driven them.

### Overview of our approach to step 1

For the analysis in step 1 we looked at changes over time between 2011/12 and 2021/22. There are two reasons for this choice of time period.

- It is the same time period used for Ofwat's latest base cost econometric models (from its April 2023 consultation). Ofwat refers to the data running back to 2011/12 as the "full historical data series" in the context of its base cost modelling.
- This choice of start point and end point helps to limit the influence on the calculations of any cyclical patterns of specific companies' expenditure over the price control cycle by considering two complete cycles. Our calculations are for the change in expenditure between the second year of AMP5 and the second year of AMP7.

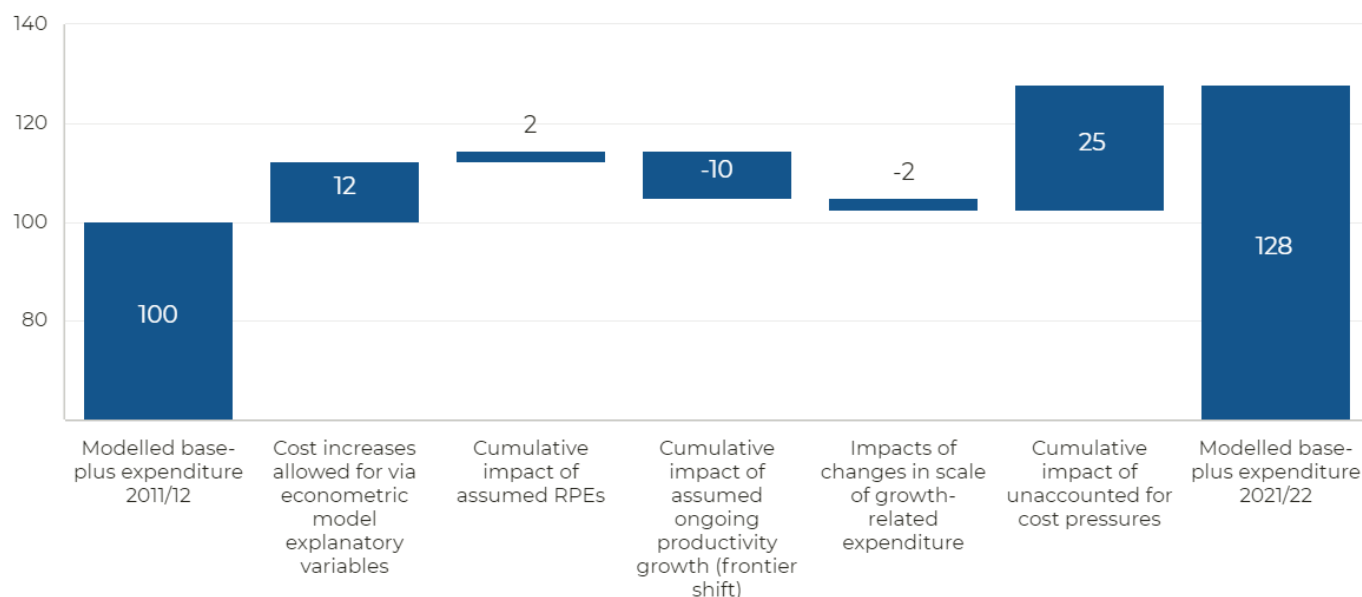
For our analysis we looked at the average across companies in the growth rates in modelled base costs and in base expenditure and over time. Our approach has the following features:

- In calculating averages across companies, we give each company an equal weight (so that the growth rates are not dominated by what is observed for the larger companies).
- In some cases we have grouped companies together over the period 2011/12 to 2021/22 to allow for like-for-like comparisons, in the context of the mergers that have taken place. For instance, for wastewater we follow the approach that Ofwat uses for its econometric models of base costs and use a notional combined company of SVH (comprising what is now Severn Trent England and Hafren Dyfrdwy).
- We calculate annual growth rates on a compound annual growth rate (CAGR) basis between 2011/12 and 2021/22.
- All growth rates in costs are for changes in costs relative to CPIH.
- The main data source we have used is the dataset on expenditure and cost driver variables published by Ofwat in April 2023 alongside its consultation models for base costs.

Before we present a build-up of our key calculations, we provide a more intuitive representation of our methodology by reference to the waterfall chart below, taking the case of wastewater network plus as an example. Our approach – and this chart – seeks to decompose the overall growth in industry-average base-plus expenditure between 2011/12 and 2021/22 into a number of components (with base-plus expenditure set to 100 in 2011/12).

Please note that the figures in the waterfall diagram below are approximate and do not match exactly the formal calculations of annual growth rates below that we set out below.<sup>1</sup>

Figure 1: Approximate decomposition of growth in wastewater network plus costs over time



We summarise the individual components of changes over time that are shown in the waterfall chart – and describe our approach to quantification of them – as follows:

- Cost increases allowed for via econometric model explanatory variables.** Ofwat's econometric models provide for changes in modelled costs over time insofar as there are changes over time in the explanatory variables used in these models. For example, the coefficients on explanatory variables in Ofwat's models means that increases over time in the number of connected properties, the length or water mains, the length of sewers and sewage load act (all else equal) to increase modelled base costs. We have calculated the annual growth rate in modelled costs (averaged across companies) by comparing modelled costs in 2011/12 with modelled costs in 2021/22 using a consistent set of models over time.
- Cumulative impacts of assumed RPEs.** In line with broader UK regulatory practice, Ofwat's price control methodology makes some allowance for the impact on water companies' costs over time from changes over time in wages rates and other input prices (to the extent that these differ from general inflation captured by CPIH). In practice, at PR19 both Ofwat and the CMA only made allowance for the impact of wage increases (relative to CPIH) on an assumed share of labour costs within totex. For our analysis in step 1, we have taken the methodology determined by Ofwat and the CMA at PR19 for the RPE true-up mechanism and used historical ASHE wage rate data from the ONS back to 2011/12 to estimate the cumulative impact of

<sup>1</sup> This is due to (a) rounding; and (b) the waterfall chart using a simpler way to calculate the cumulative impact of individual factors on base-plus expenditure in 2021/22 than that used more formally below.



RPEs on water company costs between 2011/12 and 2021/22. (In step 2 we consider the possibility that the Ofwat / CMA methodology does not accurately reflect RPEs experienced over this period.)

- **Cumulative impact of assumed ongoing productivity growth (frontier shift).** In line with broader UK regulatory practice, Ofwat's price control methodology involves assumptions on the impact on the costs of an efficient water company making ongoing productivity improvements over time. For our analysis in step 1, we used an assumption of 1% which is taken from the CMA's determination in the PR19 water price control references. We calculated the cumulative impact on base expenditure, between 2011/12 and 2021/22, of this assumed rate of productivity improvement. This figure is slightly lower than assumed by Ofwat at PR19 (1.1%). (In step 2 we consider the possibility that the CMA / Ofwat assumptions on productivity growth in AMP7 does not reflect that experienced over the period 2011/12 and 2021/22.)
- **Impacts of changes in the scale of growth-related expenditure.** Our analysis considers changes over time in base-plus expenditure, which is aligned with Ofwat's scope of modelled base costs from its April 2023 econometric models. This includes not only pure base expenditure (as defined in RAG 4.11) but also some elements of what Ofwat calls "growth-related expenditure" which includes network reinforcement expenditure and some enhancements expenditure (e.g. enhancement expenditure to reduce sewer flooding risk). It is possible that part of the observed increase over time in base-plus expenditure is due to changes between 2011/12 and 2021/22 in growth-related expenditure (e.g. due to changes in rates of housebuilding and new connections or changes in enhancement spend in those categories falling within scope of base-plus expenditure). It is also possible that the increase over time in base-plus expenditure have been suppressed, to some degree, by such changes. For our analysis in step 1, we compared the average growth across companies in base-plus expenditure between 2011/12 and 2021/22 against the average growth across companies in base expenditure, as a means to strip out the impact of changes in the scale of growth-related expenditure. We expect Ofwat to build on the approach from its PR19 final determinations and the CMA determinations to apply off-model adjustments to all companies for differences over time, and between companies, in growth-related expenditure in AMP8 and we have omitted this factor from this claim.
- **Cumulative impact of unaccounted for cost pressures.** We use the term "unaccounted for cost pressures" to refer to factors that have put upward pressure on costs and which are not accounted for by the factors listed above and by Ofwat's current methodology for base cost assessment (at least in the absence of allowances for a cost adjustment claim such as this). We calculate the cumulative impact of unaccounted for cost pressures as a residual, which is effectively the cumulative increase (decrease) in base-plus expenditure which is needed to close the gap between (a) the cumulative impacts of the other factors above and (b) the average across companies in the observed growth, between 2011-12 and 2021/22 in base-plus expenditure.

In the chart above, we show cumulative impacts over the period 2011/12 to 2021/22 as this makes the chart clearer for purposes of exposition. For the main analysis under step 1 we have focused on average annual growth rates (on CAGR basis) rather than cumulative impacts. In the next section we present our more formal calculations of the average annual impact of unaccounted for cost pressures.

## Estimates of average annual impact of unaccounted for cost pressures

This claim concerns the water network plus and wastewater network plus price controls.

A key part of our analysis is the increases (or decreases) in costs that are allowed for under Ofwat's econometric models of base costs. In line with its approach at PR19, Ofwat's April 2023 model suite does not allow for separate analysis of water resources and wastewater network plus (models are either at the level of wholesale water, treated water distribution or water resources plus). So, we focus in step 1 analysis on wholesale water, for which water network plus is the main component, assuming that the cost trends and impacts of contributing factors are the same across water resources and water network plus. When we calculate cost adjustments in £m under step 3, we apply growth rates (in %) to water network costs only to focus the claim on water network plus. For wastewater, Ofwat's consultation models do allow us to take wastewater network plus separately from bioresources within step 1.

On this basis we present our calculations of the average annual impact of unaccounted for cost pressures below for each of wholesale water and wastewater network plus.

Table 2: Estimation of average annual impacts of unaccounted for cost pressures: 2011/12 to 2021/22

	Wholesale water	Wastewater network plus
A. Average annual growth in modelled base-plus expenditure observed across companies	1.18%	2.38%
B. Average annual cost increases allowed for via econometric model explanatory variables	0.88%	1.15%
C. Average annual impacts of assumed RPEs	0.21%	0.21%
D. Assumed ongoing annual productivity growth	-1.00%	-1.00%
E. Average annual net impact of econometric model explanatory variables, RPEs and productivity on modelled base-plus expenditure  Where $E = [ (1+B) * (1+C) * (1+D) ] - 1$	0.08%	0.34%
F. Estimated impact of changes over time in expenditure on growth-related enhancements	-0.01%	-0.24%
G. Estimated annual average impact of unaccounted for cost pressures on modelled base-plus expenditure  Where $G = [ (1+A) / ((1+E)*(1+F)) ] - 1$	<b>1.11%</b>	<b>2.28%</b>

We use the figures calculated in row G for subsequent steps in our methodology.

Some points to keep in mind about the analysis above are as follows:

- The calculation of annual growth rates in base-plus expenditure in row (A), and the adjustment for the estimated impact of changes over time in expenditure on growth-related enhancements (F), are likely to be sensitive to the time period over which the growth rate is calculated. When data for 2022/23 becomes available this could be incorporated into the analysis. To reduce the impact on the figures of the profile of the uneven spending within each price control period, it may be appropriate to take the average of (a) CAGR in base-plus expenditure between 2011/12 and 2021/22 and (b) CAGR in base-plus expenditure between 2012/13 and 2022/23. This would enable updated data to be used while still calculating CAGR from corresponding points in each price control period.
- The analysis is based on triangulation of modelled costs across the set of models from Ofwat's April 2023 consultation, giving equal weight to different models (as advised by Ofwat). The figures in row (B) will need to change as refinements are made to model specifications, as additional years of data are included in the econometric analysis, and if the selection and weighting of models differs to that we have assumed.

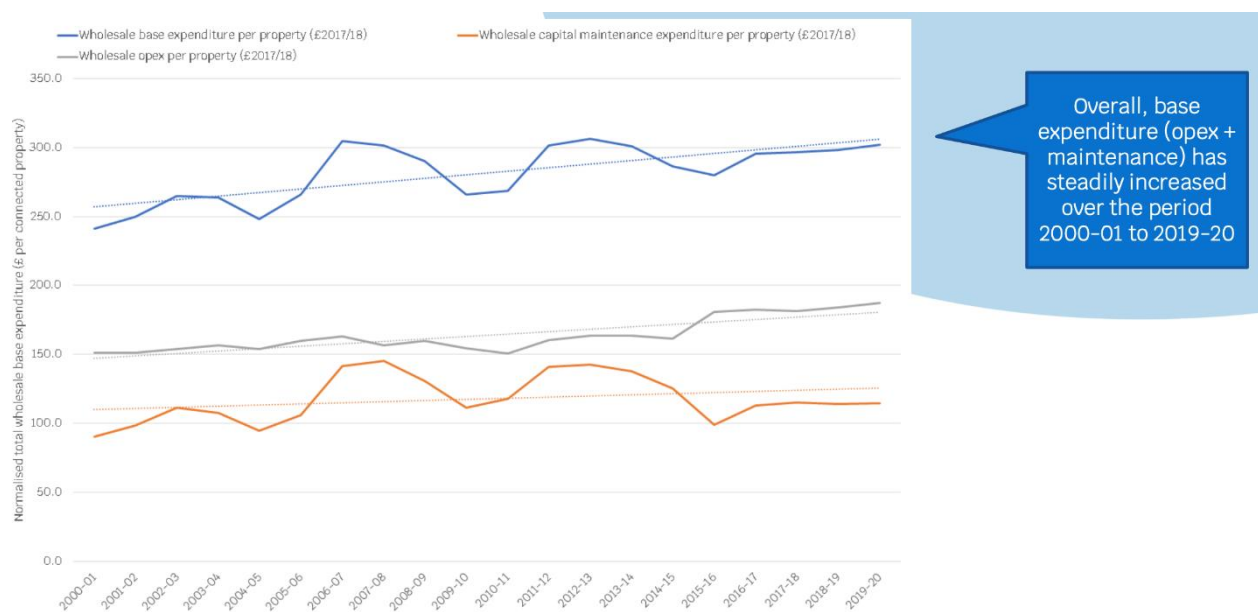
- As discussed further under step 2, the calculations are subject to assumptions on RPE and ongoing productivity growth.

### Further evidence on unaccounted for cost increases: (1) Ofwat's findings

The evidence we have presented above of an upward trend in base expenditure over time is something that Ofwat has recognised and which has been observed over a much longer time period than that covered by Ofwat's base-plus econometric models and our quantitative analysis above. The chart below is a reproduction of a chart from Ofwat slides to one of the PR24 cost assessment working groups.<sup>2</sup>

Of particular note, Ofwat stated that "base expenditure has steadily increased over the period 2000-01 to 2019-20".

Figure 2: Ofwat analysis of changes over time in base expenditure



### Further evidence on unaccounted for cost increases: (2) time trend econometric models

In addition to the primary analysis on step 1 set out above, we carried out further analysis concerning evidence of changes over time in base-plus expenditure which are not captured by Ofwat's April 2023 econometric models. For this we took each of Ofwat's econometric models, across wholesale water and wastewater network plus, and estimated a variant of the Ofwat model which included a time trend. The main finding from this analysis was follows:

- For the TWD models, the time trend in each model was significant at at least the 5% level of significance with a coefficient implying an increase in modelled base-plus expenditure for treated water distribution of around 1% per year.
- For the WRP models, the time trend was not significant at the 10% level and the coefficients implied an increase in modelled base-plus expenditure of over 1% per year.

<sup>2</sup> Ofwat (2021) PR24 Cost Assessment Working Group Forward looking capital maintenance, page 11.

- For the WW models, the time trend coefficient was significant at either the 5% or 10% levels, and implied increases in modelled base-plus expenditure for wholesale water of around 1% per year.
- For the sewage collection models the coefficients on the time trend were not significant at the 10% level (with very high p-values) and did not imply any material trend in these costs.
- For the sewage treatment modes the time trend was significant at the 10% level and implied an increase in modelled base-plus expenditure for sewage treatment of around 1.2 % per year.
- For the wastewater network plus models, the coefficients on the time trend were not significant at 10% level but implied an annual increase in these costs of around 0.3% to 0.4%.

We consider that this provides further evidence on the existence of significant unaccounted for cost pressures since 2011/12 across water and wastewater activities.

We have not used these model variants directly as part of the quantification of this cost adjustment claim. There is a separate case for at least some of the base cost models including time trends, as we set out in our response to Ofwat's recent consultation on the PR24 base cost models. But the purpose of this cost adjustment claim is to provide for an adjustment against Ofwat's April 2023 models – on the working assumption that these would be used as the basis for base cost allowances at PR24 – rather than to propose alternative model specifications.

## Step 2: Assessment of drivers of unaccounted for cost pressures

Under step 1 we presented evidence that, over the period 2011/12 to 2021/22 there have been significant upward pressures on base costs within the industry which are not captured by the outputs from Ofwat's base-plus econometric models when adjusted for the impacts of RPEs, ongoing productivity growth and growth-related enhancements.

In this step, we examine possible explanations for these unaccounted for upward pressures on base costs. We consider two main types of explanation that could apply in principle (potentially in combination):

- First, it is possible that there are some “unaccounted for dynamic factors” which put upward pressure on base costs within the industry which are not captured by the explanatory variables in Ofwat's base-plus econometric models and which are not related to RPEs and ongoing productivity growth.
- Second, it is possible that the assumptions about productivity and RPEs used in the calculations in step 1 above are not reflective of what has been experienced in practice in the historical period.

We summarise key points from our assessment related to the first potential explanation above in the subsection below. We discuss the second potential explanation in the subsequent subsection.

### Summary of assessment of unaccounted for dynamic factors

We summarise our assessment of potential unaccounted for dynamic factors in the table below. We provide further evidence and analysis relating to some of these factors in the appendix.

Table 3: Summary of possible unaccounted for dynamic factors

Possible factor	Key points from our assessment
Increases in the number of customers connected to water and wastewater systems and the demands they place on these systems	Increases in the number of customers, and the demands they place on water and wastewater systems, will be an important factor in explaining the overall increases over time in modelled base-plus expenditure (i.e. row A in the table under step 1 above).

Possible factor	Key points from our assessment
	<p>However, Ofwat's econometric models include explanatory variables that are intended to take account of these factors (e.g. number of properties, length of mains and sewers, sewage load) and we have already adjusted for growth in these variables in our calculations in step 1. And we have stripped out the effects of changes over time in the level of growth-related expenditure.</p> <p>While there may be some residual impact that is not captured by Ofwat's models but this does not seem likely to be a key source of unaccounted for cost pressures.</p>
The costs of observed performance improvements	<p>This factor concerns the additional costs arising over time from continuing improvements over time in key areas of customer service and environmental performance. We interpret performance improvements broadly, to include efforts to maintain service levels in the context of worsening external conditions (e.g. climate change impacts on flooding risk).</p> <p>Ofwat's base cost models do not include explanatory variables relating to changes over time in customer service and environmental performance (with the sole exception of ammonia removal).</p> <p>The financial incentives that Ofwat has applies to PCs (e.g. based on estimates of WTP and marginal benefits) are designed to encourage companies to incur additional costs to improve performance to customers (insofar as the benefits from these improvements outweigh the costs).</p> <p>There is clear evidence that water companies have improved performance significantly over time in the areas covered by PCs.</p> <p>For instance, at PR19 Ofwat highlighted that the sector had achieved a performance improvement of 40% in water supply interruptions between 2012-13 and 2016-17, a 26% improvement in internal sewer flooding incidents between 2015-16 and 2018-19, and a 30% improvement in pollution incidents between 2013 and 2018.</p> <p>There have been further improvements in performance since PR19 review. A key area is leakage, where we have made substantial improvements as a direct result of initiatives for which the cost is reported as base expenditure.</p>
The ongoing costs arising from past enhancements	<p>At each past price review, Ofwat has chosen to approve customer funding under the price controls for large amounts of enhancement expenditure.</p> <p>In all or the vast majority of cases, enhancement improvements are maintained in successive AMPs. So the enhancement schemes / outputs / outcomes that Ofwat has funded involve ongoing operating costs and, in time, capital maintenance expenditure, both of which fall under base expenditure.</p> <p>As a matter of logic, a process of a further tranche of enhancement schemes, additional outputs and improved outcomes being approved in each successive AMP will tend to put upward pressure on base expenditure.</p>

Possible factor	Key points from our assessment
Increasing regulatory requirements:	<p>This factor concerns increases to base costs arising from increases over time in the extent of regulatory requirements that water companies operate under (beyond those captured above relating past enhancements).</p> <p>For example, there may be base expenditure increases as a consequence of changes in requirements from the EA, DWI, ICO, and HSE.</p>
Cost allocation between wholesale price controls	<p>In principle, an observed increase in reported costs over time in one part of the value chain might reflect changes in cost allocation, rather the underlying cost drivers.</p> <p>We considered whether it was possible that the level of unaccounted for costs might be due to some reallocation of costs over time between different price controls.</p> <p>In relation to our claim for water network plus, our analysis in step 1 above is based on wholesale water expenditure (rather than expenditure for water network plus only) given the way that Ofwat's econometric models of base costs are specified. So any reallocation of costs between water network plus and water resources that has happened would not affect the figures we calculate for water network plus.</p> <p>For wastewater network plus, our analysis in step 1 could be affected in principle by a reallocation of costs from bioresources to wastewater network plus. However, this seems highly unlikely to explain the unaccounted for cost increases observed for wastewater network plus. This is for two mains reasons. First, although there seems to be an unaccounted for <i>reduction</i> in base costs for bioresources (using the same methodology as applied to wastewater network plus) this is smaller as a percentage than the increase we saw for wastewater and, moreover, implies a far smaller amount in £m due to bioresources base costs being much smaller than wastewater network plus base costs. Second, the reduction observed for bioresources seems likely to be heavily influenced by increases over time in renewable energy generation as part of bioresources activities (which will reduce opex and provide income treated as negative expenditure).</p>
Peaks and troughs in investment	<p>It is possible that, when comparing a company's base expenditure at two points in time, the calculated growth rate in expenditure is affected by peaks and troughs in investment requirements.</p> <p>Our approach to the analysis in step 1 is designed to mitigate the risk that the calculation of unaccounted for cost increases are impacted by peaks and troughs in investment cycles. First, by taking the average across all companies in the industry, we would expect considerably less influence of any peaks and troughs in investment cycles. Second, by calculating the CAGR between year 2 of AMP5 and year 2 of AMP7 we mitigate impacts from investment variations between different points in the price control cycle.</p>

Possible factor	Key points from our assessment
	<p>While there could be some residual impact, we do not see peaks and troughs as a credible explanation for the bulk of unaccounted for cost increased we have identified.</p> <p>That said, we see value in updating the analysis in step 1 in light of data for 2022/23, using the approach discussed above which maintains a common point in the price control cycle to make comparisons over time (e.g. between second year of AMP or between third year of AMP).</p>
Impacts of Covid-19	<p>While Covid-19 will have had some effects on water company costs, it does not seem a credible explanation for the unaccounted for cost increases identified under step 1.</p> <p>As can be seen in figure 2, which is Ofwat's own analysis of base expenditure over time, it is not the case that base expenditure was constant relative to CPIH and then shot up around the time of the Covid-19 pandemic. Instead, as Ofwat identified, "base expenditure has steadily increased over the period 2000-01 to 2019-20".</p>

We provide further information on the information, evidence an analysis that supports our claim in the appendix. This includes:

- Evidence on improvements in performance over time.
- Submissions on performance improvements from base expenditure versus enhancement expenditure.
- Evidence on cost increases from leakage improvements.
- Evidence on increased regulatory requirements
- Simulation analysis concerning the under-funding of capital maintenance from past enhancements.
- Wessex Water RCV growth.
- Wessex Water capital maintenance over time.

We may provide additional supporting evidence as part of our business plan submission, especially where this links to other aspects of the business plan.

### **Potential differences between productivity and RPE assumptions and experience**

As highlighted above, it is possible that the assumptions about productivity and RPEs used for step 1 above are not reflective of what has been experienced in practice in the historical period, and this could explain part of unaccounted for cost pressures calculated under step 1. We discuss these issues below, starting with the productivity assumption.

Under the calculation approach from step 1, the higher is the assumption on the ongoing productivity growth for a notional efficient company, the higher is the scale of unaccounted for cost pressures.

It is possible that the industry-wide productivity growth rate has been less than the figure assumed by the CMA at PR19 (1% per year) which we used as an assumption for the analysis in step 1. If so, this could explain some of the unaccounted for cost pressures that we have estimated.

Estimation of the rate of productivity growth actually achieved by water companies in the period since 2011/12 is a challenging exercise especially given major changes over time to water companies' environmental performance and customer service.

In the past Ofwat has referred to a Water UK report suggesting 0% productivity growth has been achieved by water companies between 2011 to 2017. However the estimates of productivity growth from that report do not seem to provide a reliable guide to the productivity growth actually achieved by water companies. For example, there have been major improvements in customer service and environmental performance in the water industry, but it is very challenging to take these properly into account in productivity estimation, and this was not resolved in the report for Water UK that Ofwat referred to. Ofwat has recognised that the figure of 0% does not fully account for changes in quality.<sup>3</sup> This is an understatement: the methodology applied in that report was very limited in terms of its recognition of quality improvements, with a tendency to under-estimate productivity growth by counting growth in measures of inputs without recognising the benefits from those inputs in terms of quality and outcomes.

More recent work by Economic Insight identified a plausible range of 0.3% to 0.8% per year for water industry productivity growth (frontier shift). This is based primarily on evidence on other sectors of the economy rather than data on water companies.<sup>4</sup> If a figure in the centre range were used, this would reduce the level of estimate unaccounted for cost pressures (by around 0.5% per year) but there would still be significant unaccounted for cost pressures left to explain.

It is also possible that the assumptions we have used for historical RPEs are not entirely reflective of the RPEs faced by efficient water companies.

Our assumptions are based on the RPE true-up adjustment methods used by Ofwat and CMA at PR19, applied to historical data. This approach led to a historical RPE which average 0.21% per year. Our impression is that this might be an underestimate.

For instance, one phenomenon that we have experienced in the business is that of asset lives getting shorter (in terms of what is available for companies to procure), without a corresponding reduction in upfront cost in many cases. This can be seen as a form of real price effect, such that the whole-life costs of assets with similar functionality tends to increase faster than CPI.

Energy price increases may also be a factor for actual RPEs being greater than implied by the PR19 methodology. However, much of the effect of recent increases in energy price will fall outside of the time period covered by the analysis in step 1 above.

### **Step 3: Judgement on the implications for efficient costs in AMP8**

Our view, at this stage in the PR24 process, is that is 100% of the unaccounted for base cost increases observed historically across the industry should be extrapolated for the purposes of setting allowances *for Wessex Water's base expenditure in AMP8*. We did not identify a good basis to scale down this percentage. This is for the following reasons.

First, both theoretically and in light of then evidence under step 2 above, we consider that most, or a large part, of the unaccounted for upward pressures on base costs observed historically is likely to be due to (a) increases in base-plus costs over time to support improvements in performance captured by PCs and subject to financial incentives via ODIs; (b) increases in base-plus costs over time as a result of the ongoing operational and capital

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<sup>3</sup> Ofwat (2022) *Creating tomorrow, together: Our final methodology for PR24 Appendix 9 – Setting expenditure allowances*, page 35.

<sup>4</sup> Economic Insight (2023) *Productivity and frontier shift at PR24*.



maintenance associated with past enhancement expenditure; and (c) increases in base-plus costs over time from broader sets of increasing regulatory requirements. We expect these factors to be just as relevant into AMP8 as they have been over AMP5, AMP6 and AMP7. There is no basis for taking the view that their effects will suddenly cease in AMP8.

Second, we recognise that the analysis unaccounted for base cost increases uses industry wide data and is not focused on the data for Wessex Water over this period. However, it is much more appropriate on price control incentive grounds to use industry-wide data for an uplift to modelled costs in AMP8 rather than to use data specific to Wessex Water. If a cost adjustment for Wessex Water for AMP8 was based on Wessex Water's own historical increase in costs, this could act against Ofwat's use of benchmarking base costs.

Third, it is also quite possible that some element of the estimated unaccounted for cost pressures is due to (a) RPE growth being somewhat higher than implied by the methodologies of Ofwat and the CMA and/or (b) productivity growth being somewhat lower than implied by the assumptions of Ofwat and /the CMA. Nonetheless, the cost adjustment claims presented in this document are claims for adjustments to be applied in the context of Ofwat's own models and methodology for base cost assessment. While Ofwat's position on productivity and RPEs for PR24 remains to be determined, our central expectation is that Ofwat will adopt a similar methodology for RPEs, and to make similar assumptions for productivity, at PR24 as at PR19. Therefore, for the purposes of this claim, we consider it appropriate to use the methodology and assumptions on productivity and RPEs that are most consistent with Ofwat's models and methodology.

Fourth, we consider that there are two reasons why the scale of unaccounted for cost pressures identified in step 1 and considered in step 2 may be *underestimated* because of other factors acting in the opposite direction. In particular, there might be other factors which have acted to offset the effects on base expenditure of cost increases from performance improvement, past enhancements, and increased regulatory requirements. These are:

- **Implications of totex incentives for the profile of expenditure.** Where companies have responded to the new totex incentives introduced at PR14 by moving to asset management approaches and performance strategies that involve a greater use of operating expenditure rather than capital expenditure, in relation to those activities covered by base expenditure, then this would tend to lead to reduction in *expenditure* in the short term, with offsetting increases in expenditure further down the line. Leaving aside any benefits from productivity improvements and efficiency gains, a switch in the balance of expenditure away from capital expenditure and towards operating expenditure will tend to reduce total expenditure in the short term. All else equal, the introduction of the totex and outcomes approach at PR14 should have led to significant reductions in base expenditure across the industry.
- **Capital maintenance deferral.** Companies may have taken opportunities to defer capital maintenance expenditure requirements to future price control periods, without immediate adverse effects (e.g. via managing near-term needs using opex-based solutions or investment in shorter-life and lower-cost assets).

In relation to the second of these points, the information we present in our separate cost adjustment claims on mains renewal shows that there have been significant reductions in the levels of water mains renewal over the period 2011/12 to 2021/22.

Importantly, while these two factors may have offset other cost pressures (i.e. those from outcomes improvements and past enhancements) in recent years, their ability to offset cost pressures in the future is likely to reduce over time. The first factor above concerns a transitory effect of a process of adopting more opex-based solutions within base expenditure. The opportunities to offset cost pressures by deferring capital expenditure will tend to decrease over time.

In this context, there is a reasonable argument for the annual rate of unaccounted for cost increases being greater in AMP8 than estimated historically.

Overall, there is considerable uncertainty about both the relative scale of factors influencing the cost increases observed in the past and about cost increases into the future. Nonetheless, given the various considerations discussed above, using a figure of 100% of the historical average annual increases in unaccounted for costs for extrapolation into AMP8 seems a reasonable approximation at this stage.

## Step 4: Calculation of adjustment to apply to modelled costs

Our calculation of the adjustment to apply for Wessex Water has four steps:

- Step 4A: Estimation of modelled costs for Wessex Water for 2025-30.
- Step 4B: Application of catch-up efficiency adjustments.
- Step 4C: Derivation of adjustment factors for unaccounted for costs increases.
- Step 4D: Calculation of net value of the cost adjustment claim.

We describe each of the steps below.

In addition we briefly describe how we calculated the implicit allowance for the purposes of Ofwat's data tables. Given the way that the calculations work logically, the implicit allowance is not an explicit part of the calculation of the net value of the claim under step 4. This is because we have, in effect, already stripped out the increases over time in modelled base-plus expenditure that are allowed for via Ofwat's econometric models as part of step 1. But the implicit allowance corresponding to our methodology can be calculated using the information produced as part of the process to calculate the net value of the claim.

### Step 4A: Estimation of modelled costs for Wessex Water for 2025-30

Our approach to estimation of the modelled costs for Wessex Water for 2025-30 is as follows.

For the purposes of this early cost adjustment claim, the modelled costs for Wessex Water are calculated using the suite of econometric models that Ofwat consulted on in April 2023 (excluding the separate models of sewage treatment with the coastal population variable). We have triangulated across models in a way that gives: (a) equal weight to models in the same part of the value chain; (b) equal weight to disaggregated models (water resources plus, treated water distribution, sewage collection, sewage treatment) compared to aggregated models (wholesale water, wastewater network plus).

At this stage of the PR24 process, we do not know what forecasts of explanatory variables in the models Ofwat will use and we have not yet finalised our own forecasts for these variables. For the purposes of this early cost adjustment claim we estimated modelled costs for the 2025-30 period by extrapolating the historical rate of change in modelled costs for Wessex Water. More specially, we calculated the CAGR between 2011/12 and 2021/22 in modelled costs for Wessex Water and then used this growth rate to form projections of modelled costs for the 2025-30 period.<sup>5</sup>

We needed to make an allocation of modelled costs for wholesale water between the water resources price control and the water network plus price control (and within the latter, between the individual cost areas needed for data tables completed as part of this early cost adjustment claim). We did so by making a proportionate allocation based on the relative share of Wessex Water's base expenditure in 2021-22 APR.<sup>6</sup>

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<sup>5</sup> The figures for modelled costs derived from Ofwat's April 2023 models are in 2017/18 prices. We used data on outturn and forecast CPIH figures (on financial year average basis) to convert modelled costs to a 2022/23 price base.

<sup>6</sup> We used total base expenditure (excluding third party costs and gross of grants and contributions) from table 4D line 4 and line 11.

Table 4: Modelled costs 2025-30

	Water network plus	Wastewater network plus
Estimate of aggregate modelled costs for Wessex Water 2025-30	£488m	£979m

### Step 4B: Application of catch-up efficiency adjustments

We applied assumptions for catch-up efficiency adjustments to the modelled costs from step 4A.

We do not know what catch-up adjustments Ofwat will use for PR24. The scale of adjustment applied depends on the results of the specific suite of models used, and their weights in the triangulation, and on decisions on how to define a notional efficient company for the purposes of the adjustment (e.g. upper quartile or some other position).

For the purposes of this early cost adjustment submission, we used information from PR19 to make working assumptions on the scale of adjustment that might apply at PR24. We took the average of the catch-up assumptions determined by Ofwat and the CMA at PR19, for wholesale water and wholesale wastewater. The relevant figures are presented in the table below.

The figures we used are working assumptions about what Ofwat might do at PR24. They do not in any way represent Wessex Water's own views on how Ofwat should set catch-up efficiency adjustments or what levels might be reasonable for PR24.

Table 5: Assumptions on catch-up efficiency adjustments to be applied to modelled costs

	Water network plus	Wastewater network plus
Ofwat PR19	4.60%	8.70%
CMA PR19	1.40%	2.20%
Assumed catch-up efficiency challenge for this claim	3.00%	5.45%

### Step 4C: Derivation of adjustment factors for unaccounted for cost increases

In step 1 we estimated that the following rates of average annual increases in modelled base-plus expenditure (between 2011/12 and 2021/22) were unaccounted for under Ofwat's models, methodology and assumptions:

- An increase of 1.11% per year for water network plus.
- An increase of 2.28% per year for wastewater network plus.

Based on the evidence and assessment from step 2, we decided in step 3 to apply 100% of these historical rates in projecting forward to the 2025-30 period.

On this basis, we derived adjustment factors for unaccounted for cost increases for each year in the 2025-30 period as follows, separately for water network plus and wastewater network plus:

- We created a series which starts at one in 2011/12 and then increased each year in line with the assumed annual increases in unaccounted for costs (1.11% for water network plus; 2.28% for wastewater network plus).
- For each year in the 2025-30 period, we calculated an adjustment factor for unaccounted for costs as the value for this series in that year divided by the average value of the series over the five-year period 2017/18 to 2021/22. This calculation reflects Ofwat's approach at PR19 of calculating the catch-up efficiency adjustments using efficiency scores (actual costs relative to modelled costs) calculated over the last five years of data. If Ofwat changes its approach to the period over which efficiency scores are calculated, then the corresponding adjustment factor would differ accordingly.

We set out below the adjustment factors for unaccounted for costs that we derived.

Table 6 Summary of uplift factors for unaccounted for costs

	Water network plus	Wastewater network plus
2025/26	1.07	1.14
2026/27	1.08	1.17
2027/28	1.09	1.20
2028/29	1.10	1.22
2029/30	1.12	1.25

#### Step 4D: Calculation of net value of the cost adjustment claim

We calculate the net value of the adjustment for Wessex Water separately for each year in the 2025-30 period. We do this by:

- taking the modelled costs for that year from step 4A;
- applying the catch-up adjustment from step 4B; and
- multiplying by: the uplift factor for unaccounted for costs for that year from step 4C minus 1.

We provide annual figures for the 2025-30 period in the data tables corresponding to this claim.

We summarise aggregate amounts for 2025-30 period (i.e. AMP8) in the table below.

Table 7: Provisional quantification of the net value of the claim

	Water network plus	Wastewater network plus
Estimate of aggregate modelled costs for Wessex Water 2025-30	£488m	£979m
Estimate of aggregate modelled costs for Wessex Water 2025-30 after application of catch-up efficiency adjustment	£473m	£925m
Provisional quantification of the net value of the claim: aggregate for 2025-30	<b>£44m</b>	<b>£184m</b>

The figure is larger for the wastewater network plus price control because of the following:

- Modelled base costs are higher for Wessex Water's wastewater network plus price control compared to its water network plus price control.
- The historical scale of unaccounted for cost pressures identified under step 1 are greater for Wessex Water's wastewater network plus price control compared to its water network plus price control.

Our quantification of the net value of the claim is a provisional estimate based on current information on the models, methodologies and assumptions that Ofwat will use in its base cost assessment for PR24. It is subject to uncertainty and would benefit from updates in light of further data that becomes available and any clarification on relevant aspects of Ofwat's models, methodologies and assumptions for PR24.

For instance, there are interactions between our calculation of the adjustment in step 1 above and the assumptions that Ofwat makes for productivity and RPEs in respect of base-plus costs when setting allowances for PR24. If Ofwat were to set a productivity assumption for AMP8 that is lower than 1% – due to an interpretation that that the levels of productivity growth achieved in practice by efficient water companies over the 2011/12 to 2021/22 period was less than previously assumed (e.g. an assumption of around 0.5% per year rather than 1% per year) – then the scale of adjustment calculated under step 4 above would be smaller. If Ofwat were to adopt an alternative or refined methodology for RPEs, this could also affect the calculations, at least insofar as the change of methodology has implications for the estimation of historical RPEs as well as future RPEs in AMP8.

Furthermore, the series of calculation steps that we have used to quantify the net value of the claim are quite complicated conceptually and may benefit from some further review and refinement. We will consider potential refinements ahead of our business plan submission, while maintaining the same broad principles and the overarching methodology.

### Derivation of implicit allowances

As highlighted at the start of section 2.4, the implicit allowance is not an explicit part of the calculation of the net value of the claim under step 4. This is because we have, in effect, already stripped out the increases over time in modelled base-plus expenditure that are allowed for via Ofwat's econometric models as part of step 1.

Nonetheless, we can calculate an implicit allowance corresponding to our methodology.

Conceptually, we have defined the implicit allowance corresponding to our methodology as the allowance for increases over time in modelled base-plus expenditure that is allowed for via Ofwat's April 2023 econometric

models. These models do not have time trends or time dummy variables, but for wholesale water and wastewater network plus they tend to produce increases in modelled costs over time. This is because some of the cost driver explanatory variables tend to increase over time.

For the purposes of this claim, and consistent with the calculations used to quantify the net claim above, we have calculated the implicit allowance as follows by taking (a) the modelled costs we calculated for Wessex Water for the 2025-30 period in step 4A above and deducting (b) the modelled costs we calculated for Wessex Water for the last five years of outturn data (i.e. 2017/18 to 2021/22). We used the five year period as the reference point as Ofwat considers modelled costs over the last five years of data when calculating efficiency scores, and because it seemed relevant to compare the five-year period of AMP8 with a five-year period of historical data.

There may be other ways to define the implicit allowance in the context of this claim. But given that this amount is not actually used in the calculation of the net value of the claim, and our proposed adjustment to modelled costs, this did not seem a priority issue to examine further.

## Need for adjustment

To a large extent, the analysis and evidence on need for adjustment is provided in the previous section 2 of this document (supplemented by the appendix). In this section we provide a response organised by each of Ofwat's questions, but this should be read in conjunction with section 2 and the appendix.

### Unique circumstances

Ofwat's PR24 final methodology is clearly designed to enable companies to use the cost adjustment process to submit claims relating to the view that efficient levels of base costs will be higher in the future than in the past. For example:

- Ofwat said that it will allow companies to submit cost adjustment claims for factors outside of company control that cause material differences in costs over time and are not captured in its benchmarking analysis.
- Ofwat said that it was open to considering company evidence on additional exogenous factors / cost drivers that require a step change in efficient maintenance expenditure through the cost adjustment claim process.

In this context, we do not consider it necessary or appropriate to demonstrate that Wessex Water operates in "unique circumstances" for this claim. Indeed, the fact that significant real terms cost increases have been experienced on average and across the industry is evidence that the cost pressures faced by Wessex Water are not due to inefficiency or poor cost control on Wessex Water's part.

Ofwat recognised in its PR24 final methodology that different criteria will be applicable for different types of claims.

For these reasons we have not responded to the following questions from Ofwat's assessment criteria as these do not seem relevant to this claim:

- *Is there compelling evidence that the company has unique circumstances that warrant a separate cost adjustment?*
- *Is there 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)?*
- *Is there compelling evidence of alternative options being considered, where relevant?*

## Management control

Ofwat's assessment criteria raise the following questions on management control:

- *Is the investment driven by factors outside of management control?*
- *Have steps been taken to control costs and have potential cost savings (eg spend to save) been accounted for?*

We provide comments on management control in the table below, against what we see as the three key drivers of the increases in base costs which are covered by this claim. These relate primarily to the first question above.

Table 8: Summary response to Ofwat questions on management control

Factor	Comments on management control
The costs of observed performance improvements	<p>We recognise that it may be possible in theory to limit the extent of increases over time in modelled base-plus expenditure by reducing (or not increasing) various aspects of observed customer service and environmental performance.</p> <p>However, we consider that this would not be in the interests of customers to do so. We interpret Ofwat's ODI financial incentives as intended to encourage companies to improve performance where the costs of this are less than the perceived customer benefits (as approximated by ODI rates set by Ofwat).</p> <p>Furthermore, if we did seek to avoid cost increases by constraining performance levels we would expect to experience ODI penalties and this approach would not be consistent with the decisions of an efficient and well-run company.</p> <p>Such an approach could also raise financeability problems for a notional efficient company as it would imply an expectation of systematic ODI penalties in a context where Ofwat's PCLs tend to become more challenging at each review.</p>
The ongoing costs arising from past enhancements	<p>Where enhancements have been carried out under WINEP, we have legal obligations to continue to operate the agreed schemes/outputs.</p> <p>For other enhancements we consider that under Ofwat's regulatory model there is an expectation to maintain the customer/environmental benefits of those enhancements over time unless there is evidence that it would provide bet benefits customers to terminate those enhancements.</p> <p>We do not consider that management has the discretion to stop operating past enhancement schemes simply to constrain base expenditure to historical levels. Nor would this be in the interests of customers</p>
Increasing regulatory requirements	Regulatory requirements are determined by third parties and are not under management control.

Furthermore, in relation to both the first and second questions above, the quantification of the claim presented in section 2 concerns observed industry-wide cost pressures and this effectively means that the cost adjusted sought is based on cross-company benchmarks. Using a benchmarking approach such as this helps to mitigate the risk that the costs experienced or observed by any one company reflect a failure by management to properly control costs, rather than other factors.

## Materiality

Our business plan totex for AMP8 is still under development, so we do not have figures to apply Ofwat's materiality thresholds. Nonetheless, on current evidence:

- Our claim exceeds, by a considerable margin, Ofwat's materiality thresholds in respect of the water network plus and wastewater network plus price controls.
- The claim does not meet Ofwat's materiality thresholds for the water resources and bioresources price controls.

The quantification of the claim is dependent on the assumptions we have made on the use of Ofwat's April 2023 base cost consultation models to calculate implicit allowances for increases in base costs over time. At this stage there is uncertainty about what models Ofwat will use, how it will triangulate model results, and how it will estimate cost driver variables for AMP8 when calculating modelled costs. This may affect the position relative to materiality thresholds.

Ofwat's assessment criteria for cost adjustment claims pose the two specific questions on materiality which we respond to in the table below.

Table 9: Summary response to Ofwat questions on materiality

Ofwat question	Summary response
Is there compelling evidence that the factor is a material driver of expenditure with a clear engineering / economic rationale?	<p>We have set out in section 2, and appendix 1, the economic and engineering rationale for the following factors being a material driver of expenditure:</p> <ul style="list-style-type: none"> <li>• observed performance improvements</li> <li>• The ongoing costs arising from past enhancements</li> <li>• Increasing regulatory requirements</li> </ul>
Is there compelling quantitative evidence of how the factor impacts the company's expenditure	<p>In section 2 we have described and applied a methodology which shows that the significant increases in water company costs over time are likely to be attributable (in full or in large part) to the three factors in the row above.</p> <p>There is further evidence in appendix 1, including an example of the large increases in a part of water network plus base expenditure which is driven by improved leakage performance.</p>



## Adjustment to allowances

In this section we respond to Ofwat's cost assessment criteria and questions in relation to the "adjustment to allowances". We summarise in the table below response against Ofwat questions under "adjustment to allowances".

Note that the analysis and evidence in section 2 and Appendix 1 is directly relevant to Ofwat's questions on adjustment to allowances and forms part of our overall response to these questions.

Table 10: Summary response to Ofwat questions on adjustment to allowances

Ofwat question	Summary response
<p>Is there compelling evidence that the cost claim is not included in our modelled baseline (or, if the models are not known, would be unlikely to be included)? Is there compelling evidence that the factor is not covered by one or more cost drivers included in the cost models?</p>	<p>Yes</p> <p>The analysis set out in section 2 shows that the cost claim is not included in Ofwat's modelled baseline (given latest information on these models).</p> <p>By design, these models cannot capture the full impact of the increases in efficient costs associated with improved outcomes due to extremely limited coverage of performance and outcomes in the explanatory variables (e.g. limited to ammonia).</p> <p>The model specifications used by Ofwat (which have a constant term and no time trend or time dummies) <i>prevent</i> the models from capturing and revealing any industry-wide increases in costs over time other than increases associated with changes over time in the data used for explanatory variables.</p> <p>Furthermore, the cost increases over time that are reasonably attributable to improved outcomes and enhanced regulatory requirements exceed the cost increases allowed for in the models (as the analysis presented in section 2 shows).</p>
<p>Is the claim material after deduction of an implicit allowance? Has the company considered a range of estimates for the implicit allowance?</p>	<p>Yes, the claim is highly material on current evidence for water network plus and wastewater network plus – see quantification above for further information on the scale of the claim.</p> <p>For this claim, we adopted an approach to the calculation of the implicit allowances (for changes over time in base-plus expenditure) that is reasonably straightforward and intuitive. There may be other ways to conceive of, and calculate, the implicit allowance. But, given the methodology we use to derive the net claim, the calculation of the implicit allowances does not actually affect the net value of the claim.</p>
<p>Has the company accounted for cost savings and/or benefits from offsetting circumstances, where relevant?</p>	<p>Our claim is a broad one across base-plus expenditure rather than for specific projects or initiatives.</p>

Ofwat question	Summary response
	<p>We propose – and anticipate – that the claim would be applied by Ofwat to figures for modelled cost derived from the econometric models that Ofwat has adjusted for (a) an assumption on catch-up efficiency improvements and (ii) an assumption on ongoing productivity growth.</p> <p>For the purposes of the claim, we have not identified and described any specific additional cost savings or offsetting circumstances that will apply in AMP8 to reduce the value of the claim.</p> <p>Where there have been cost savings and benefits from offsetting circumstances in the period 2011/12 to 2021/22, across the industry, these will act to reduce the scale of unaccounted for cost pressures that we estimated in step 1 of our methodology and this, in turn, will tend to reduce the calculation of the net value of the claim.</p>
<p>Is it clear the cost allowances would, in the round, be insufficient to accommodate the factor without a claim?</p>	<p>Yes.</p> <p>Particularly given the size of the claim and the factors underlying it, we do not see how it could be funded “in the round” from other aspects of the cost allowances set by Ofwat for Wessex Water.</p>
<p>Has the company taken a long-term view of the allowance and balanced expenditure requirements between multiple regulatory periods? Has the company considered whether our long-term allowance provides sufficient funding?</p>	<p>The claim does concern peaks and troughs in base expenditure which might even out over time.</p> <p>Our claim essentially concerns the existence of factors that lead to an upward trajectory in base costs (relative to CPIH) and Ofwat’s econometric models – and current approach to setting allowances – do not allow for this either in the short term or long term.</p>
<p>If an alternative explanatory variable is used to calculate the cost adjustment, why is it superior to the explanatory variables in our cost models?</p>	<p>This question is not applicable. The approach we have taken to calculate the cost adjustment is not based on adding an alternative explanatory variable to Ofwat’s econometric models.</p>

## Cost efficiency

This section addresses the parts of Ofwat’s cost adjustment claim assessment criteria that relate to cost efficiency.

We plan to provide further supporting evidence in this area as part of our business plan.

Ofwat question	Summary response
<p>a) Is there compelling evidence that the cost estimates are efficient (for example similar scheme outturn data, industry and/or external cost benchmarking, testing a range of cost models)?</p>	<p>The primary form of analysis we have used for the assessment and quantification of the cost adjustment claim is industry-wide data rather than data specific to Wessex Water. In effect, we have looked at changes over time in cost benchmarks.</p> <p>This aspect of our approach helps to avoid the risk that any cost increases in costs experienced by, or anticipated by, Wessex Water might be – or might be perceived as – due to inefficiency on the part of Wessex Water.</p> <p>Furthermore, we found no evidence that the above-CPIH cost increases observed across the industry in the period 2011/12 to 2021/22 (which form the basis for our assessment) are limited to companies who appear to be relatively inefficient on the basis of Ofwat’s April 2023 base cost models.</p>
<p>b) Does the company clearly explain how it arrived at the cost estimate? Is there supporting evidence for any key statements or assumptions?</p>	<p>The cost estimates relevant to this claim are calculated as part of our approach to the calculation of the adjustment to allowances.</p> <p>Rather than calculating gross costs and deducting an implicit allowance, our approach to this claim starts with the historical implicit allowance from Ofwat’s models for changes over time in base costs and then assesses the incremental costs which are not funded under Ofwat’s models and wider approach.</p> <p>As such, the primary cost estimates forming part of our claim are covered under the assessment methodology set out in section 2. We have set out clearly how we have arrived at these costings in section 2.</p>
<p>c) Does the company provide third party assurance for the robustness of the cost estimates?</p>	<p>We do not consider that this question is directly relevant to this claim, because it does not rely on any specific “cost estimates” (e.g. costings for specific projects or initiatives or services).</p> <p>The value of the claim is derived from industry wide data on outturn costs, combined with a transparent methodology and set of assumptions.</p>

## Need for investment

Ofwat's criteria for cost assessment claims include a category for "need for investment". But as highlighted above, Ofwat recognised in its PR24 final methodology that different criteria will be applicable for different types of claims.<sup>7</sup>

We consider that the "Need for investment" criterion is most relevant when the cost adjustment claim concerns a specific investment proposal or initiative for which the needs case can be set out and assessed. It is much less relevant to the current claim, which:

- Is not limited to investment expenditure as it also includes ongoing operational costs.
- Is not focused on a single identifiable project/scheme (or programme of projects/schemes) but concerns the cumulative impacts of improvements and past enhancements in a range of areas.

For this specific claim, the "need for investment" is an inherent part of the "need for adjustment" which we have addressed in detail above (see sections 2 and 3).

In this context we have not responded directly to the following questions from Ofwat's cost adjustment claim assessment criteria:

- *Is there compelling evidence that investment is required?*
- *Is the scale and timing of the investment fully justified?*
- *Does the need and/or proposed investment overlap with activities already funded at previous price reviews?*
- *Is there compelling evidence that customers support the need for investment (both scale and timing)?*

## Best option for customers

Ofwat's criteria for cost assessment claims include a category for "best option for customers". But as highlighted above, Ofwat recognised in its PR24 final methodology that different criteria will be applicable for different types of claims.

We consider that the "Best option for customers" criterion is most relevant when the cost adjustment claim concerns a specific investment proposal or initiative which reflects a selected single option (or set of options) for addressing an identified need or providing specified customer benefits. It is much less relevant to the current claim, which:

- Is not limited to a specific investment proposal or initiative.
- Is not focused on a single identifiable project/scheme (or programme of projects/schemes) but concerns the cumulative impacts of improvements and past enhancements in a range of areas.

Nonetheless, we have sought to respond briefly to a subset of the Ofwat assessment criteria questions relating to best option for customers.

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<sup>7</sup> Ofwat (2022) Creating tomorrow/w, together: Our final methodology for PR24 Appendix 9 – Setting expenditure allowances, page 156.

Table 11: Summary responses to Ofwat questions on best option for customers

Ofwat question	Summary response
a) Did the company consider an appropriate range of options to meet the need?	N/A
b) Has a cost–benefit analysis been undertaken to select proposed option? There should be compelling evidence that the proposed solution represents best value for customers, communities and the environment in the long term? Is third-party technical assurance of the analysis provided?	N/A
c) Has the impact of the investment on performance commitments been quantified?	<p>Given the broad coverage of this claim, it does not have a direct quantifiable impact on specific performance commitments in the same way that a single investment project or programme might.</p> <p>Our claim is consistent with PCLs being set at more demanding levels in AMP8 than historically, which is the approach we expect Ofwat to take for PR24 in the light of its approach at PR19 and its PR24 final methodology.</p>
d) Have the uncertainties relating to costs and benefit delivery been explored and mitigated? Have flexible, lower risk and modular solutions been assessed – including where utilisation will be low?	N/A
e) Has the company secured appropriate third-party funding (proportionate to the third party benefits) to deliver the project?	N/A
f) Has the company appropriately presented the scheme to be delivered as Direct Procurement for Customers (DPC) where applicable	N/A
g) Where appropriate, have customer views informed the selection of the proposed solution, and have customers been provided sufficient information (including alternatives and its contribution to addressing the need) to have informed views?	<p>This claim does not relate to any specific proposed solutions and we do not consider this question relevant to this claim. In effect, the claim relates in large part to the costs of (a) performance improvements encouraged under Ofwat’s ODI incentive regime; (b) continuation of benefits from past enhancements that have been approved by Ofwat and/or the EA; and (c) performance improvements due to UK legal requirements.</p>

# Customer protection

Our claim is essentially that it is appropriate for Ofwat to apply an uplift to the allowances for base-plus expenditure that it derives for Wessex Water from its cross-company benchmarking models, due to ongoing cost pressures experienced across the industry historically which are likely to continue into AMP8.

Ofwat's established approach for the price control treatment of base-plus expenditure is largely an outcomes-focused one where:

- Allowances for efficient levels of modelled base costs are determined via cross-company benchmarking (subject to various adjustments).
- Allowances for efficient levels of modelled base costs are not hypothecated.
- Companies face PCs with financial ODIs, as well as PCDs, to protect customers in relation to outcomes.
- Companies face other obligations to deliver and maintain enhancements and improved outcomes (e.g. WINEP obligations).

Within the context of this approach, our view is that the allowances determined by Ofwat for modelled base costs for Wessex Water should represent a reasonable central estimate of the level of base-plus expenditure that would be incurred by a notional efficient company operating in the exogenous conditions faced by Wessex Water (e.g. in terms of customer numbers, density and raw water quality) and which faces the various performance commitments and regulatory/legal obligations that Wessex Water.

Our view – as we have evidenced in this claim and on the basis of Ofwat's April econometric 2023 models – is that it will be necessary for Ofwat to apply a cost adjustment claim of the nature proposed in this document in order that its allowances represent a reasonable central estimate of the level of base-plus expenditure that would be incurred by a notional efficient company.

In this context, we do not see a need for additional customer protection beyond that which is already incorporated in the price control framework. To clarify, the claim is not for the additional costs of discretionary investment (which Wessex Water might conceivably defer or cancel). It is for the efficient costs of operating within the regulatory framework – and wider legal requirements – that we expect to apply within AMP8.

We respond to Ofwat's specific cost adjustment criteria questions in the table below.

Table 12: Summary response to Ofwat questions on customer protection

Ofwat question	Summary response
a) Are customers protected (via a price control deliverable or performance commitment) if the investment is cancelled, delayed or reduced in scope?	<p>This claim does not relate to any single investment that might be cancelled, delayed or reduced in scope.</p> <p>The claim relates to changes over time in the efficient costs of what Wessex Water is already required and incentivise to do.</p> <p>See discussion earlier in section 7.</p>
b) Does the protection cover all the benefits proposed to be delivered and funded (eg primary and wider benefits)?	As for question (a) above

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c) Does the company provide an explanation for how third-party funding or delivery arrangements will work for relevant investments, including the mechanism for securing sufficient third-party funding?	N/A
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# A1 Supporting information

This appendix provides supporting information in relation to step 2 and step 3 of the methodology described in section 2 above. It supports our contention that a large part of the unaccounted for upward pressures on base costs identified under step 1 is likely to be due to (a) increases in base-plus costs over time to support improvements in performance captured by PCs and subject to financial incentives via ODIs; (b) increases in base-plus costs over time as a result of the ongoing operational and capital maintenance associated with past enhancement expenditure; and (c) increases in base-plus costs over time from broader sets of increasing regulatory requirements.

This section is organised as follows:

- Evidence on improvements in performance over time.
- Submissions on performance improvements from base expenditure versus enhancement expenditure.
- Evidence on cost increases from leakage improvements.
- Evidence on increased regulatory requirements
- Simulation analysis concerning the under-funding of capital maintenance from past enhancements.
- Wessex Water RCV growth.
- Wessex Water capital maintenance over time.

While we consider that we have provided considerable evidence, we may provide additional supporting evidence as part of our business plan submission, especially where this links to other aspects of the plan.

## A1-1.1. Evidence on improvements in performance over time

There have been substantial improvements in performance over time across the industry for some of the performance commitments that Ofwat set at PR19. We consider that this is a key factor which helps to explain increases in base costs over time.

In its PR19 final determinations, Ofwat presented evidence on the scale of historical improvements achieved across companies in three key areas, findings as follows:<sup>8</sup>

- The sector had achieved a performance improvement of 40% in water supply interruptions between 2012-13 and 2016-17.
- The sector had achieved a 26% improvement in internal sewer flooding incidents between 2015-16 and 2018-19.
- The sector had achieved a 30% improvement in pollution incidents between 2013 and 2018.

We now look at more recent data, and more broadly across different PCs (using PCs that Ofwat plans for PR24). We present some charts below, based on the data that Ofwat published in April 2023.<sup>9</sup> In each case, we show the industry-average performance (simple average across companies) and Wessex Water's performance. As reflected in the charts, the time period of available data varies across different performance commitments. We take the following PCs in turn, using the abbreviations used in the Ofwat dataset in the charts below:

- Leakage (LEA)

<sup>8</sup> Ofwat (2019) *Overall stretch on costs, outcomes and cost of capital policy appendix*, pages

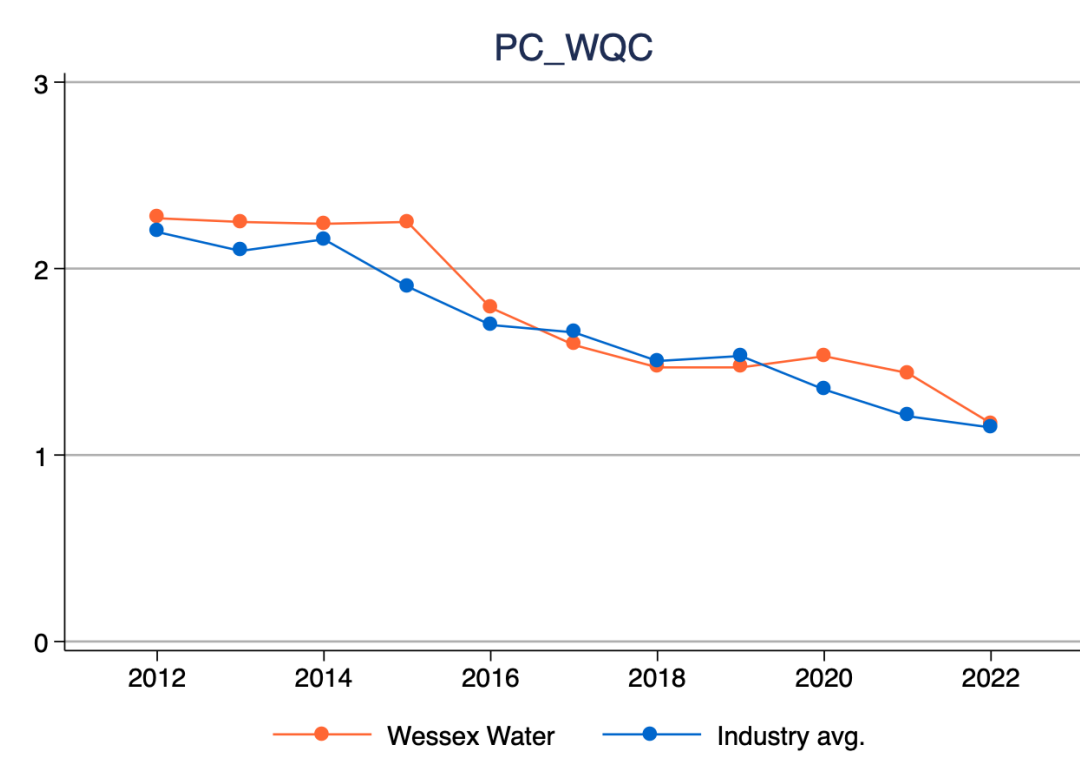
<sup>9</sup> Analysis based on "Historical performance trends for PR24 V1.0" published by Ofwat in April 2023.

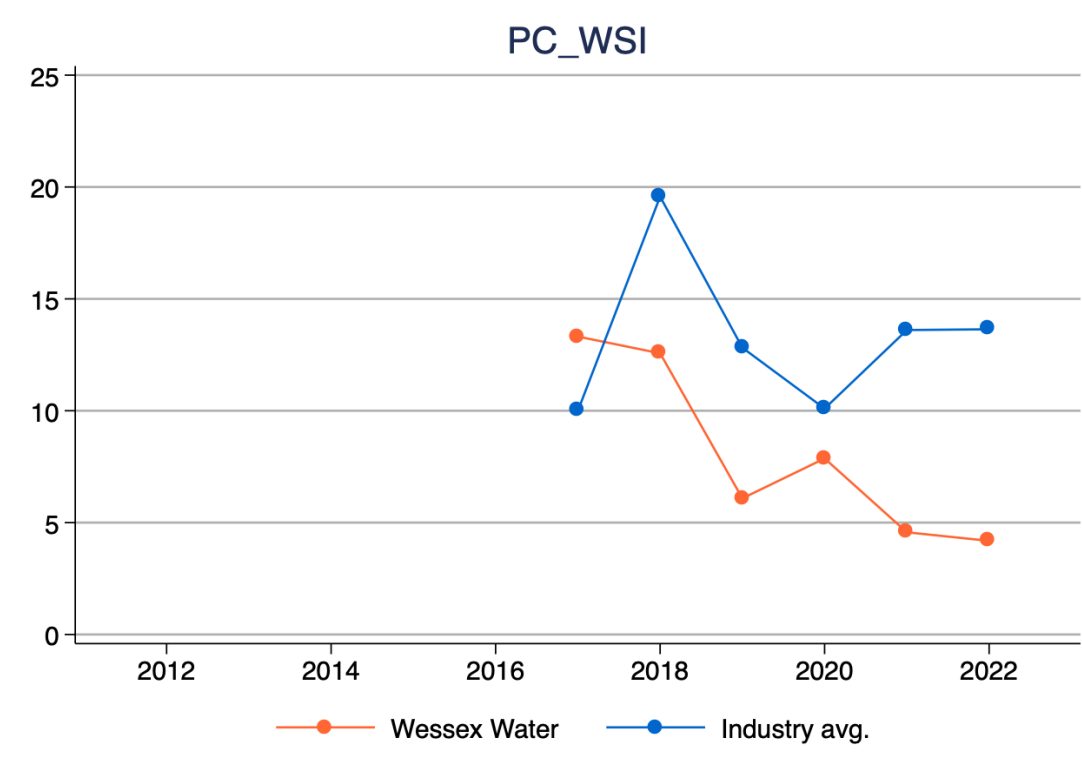
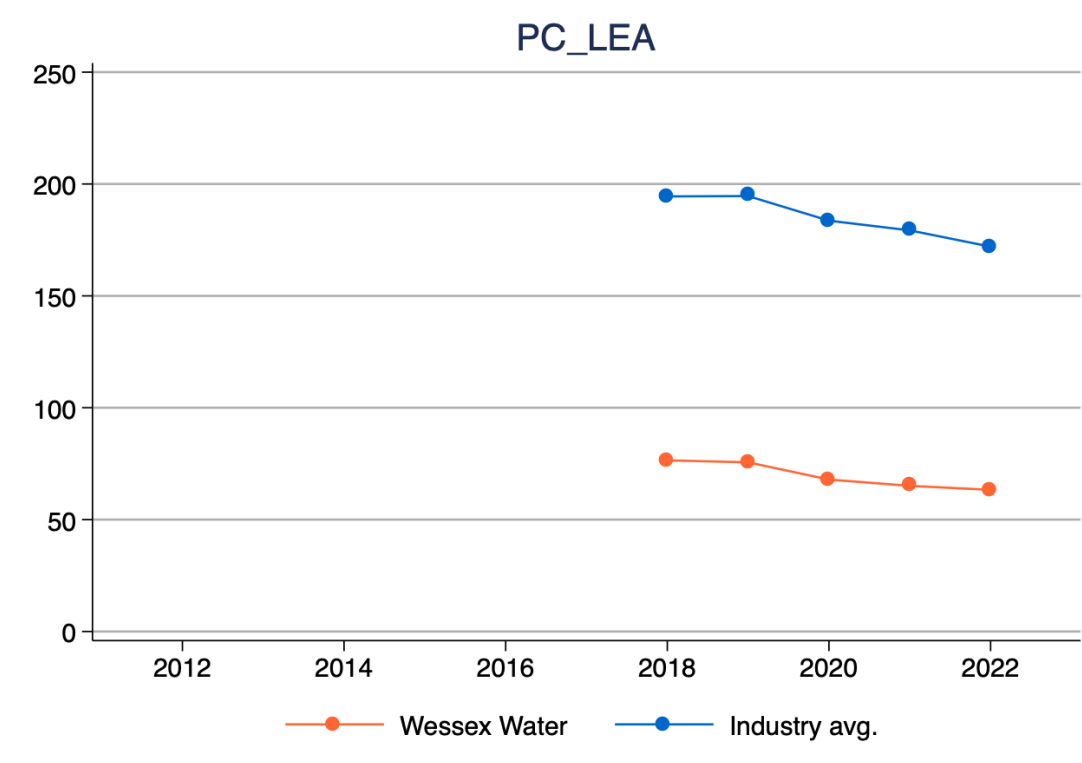


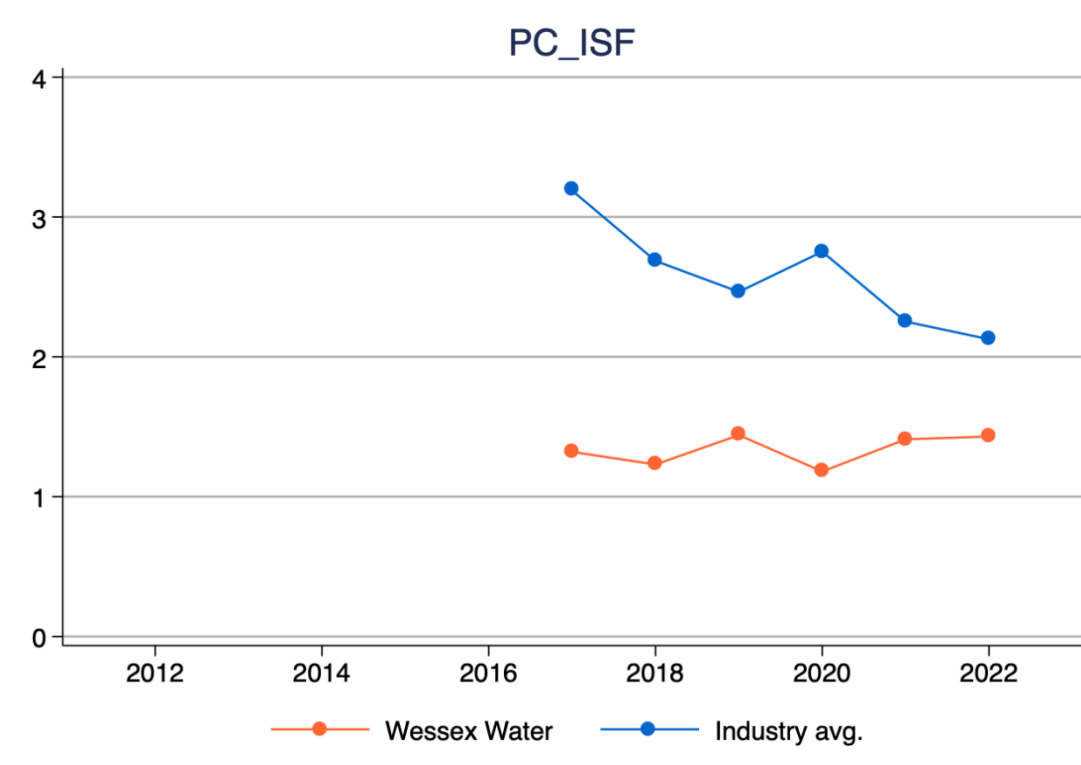
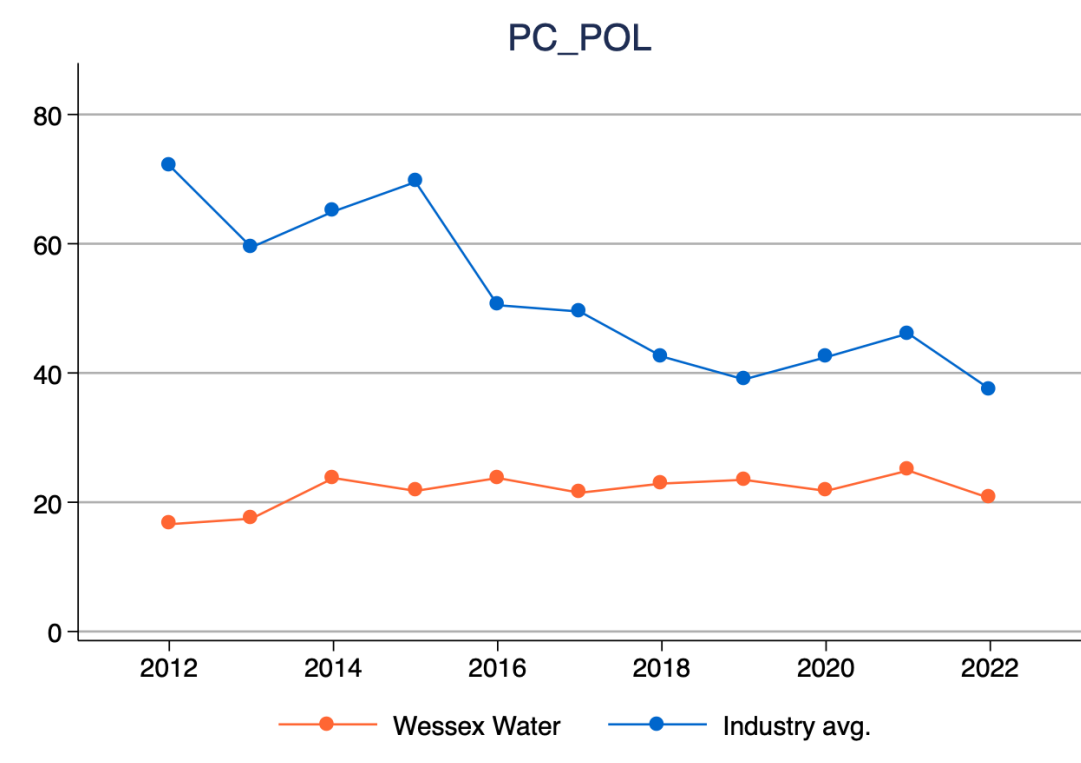
- Water supply interruptions (WSI)
- Water quality contracts (WQI)
- Pollution incidents (POL)
- Internal sewer flooding (ISF)
- External sewer flooding (ESF)
- Discharge compliance (DIS)

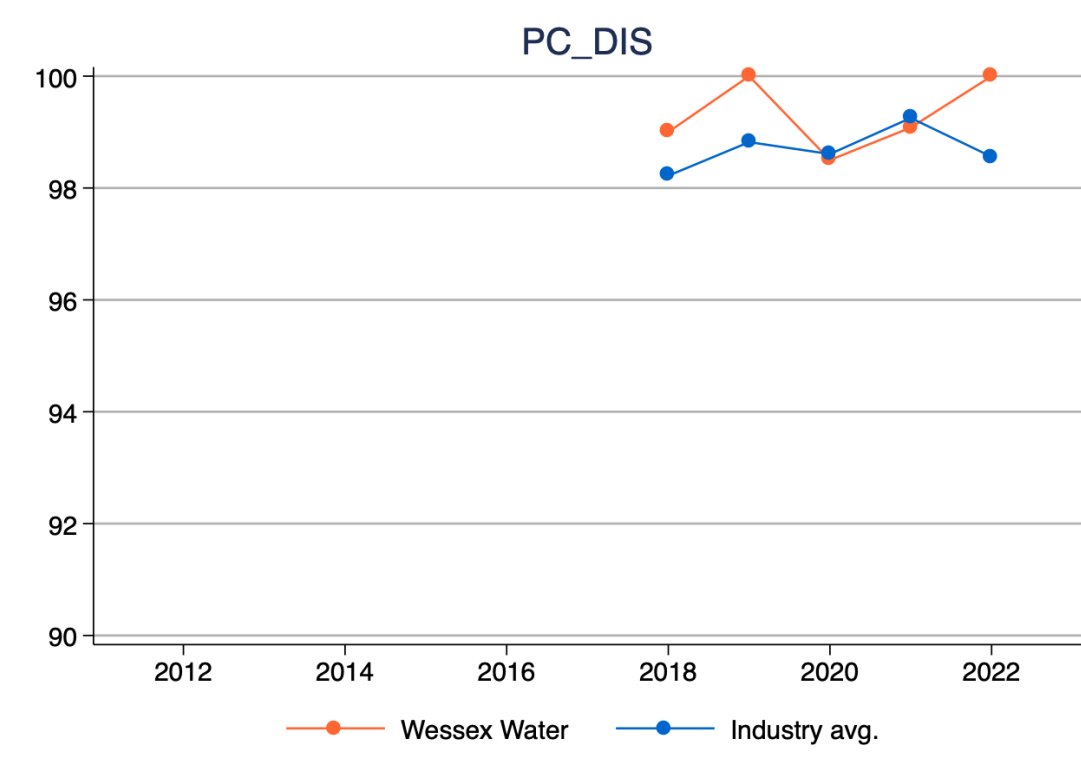
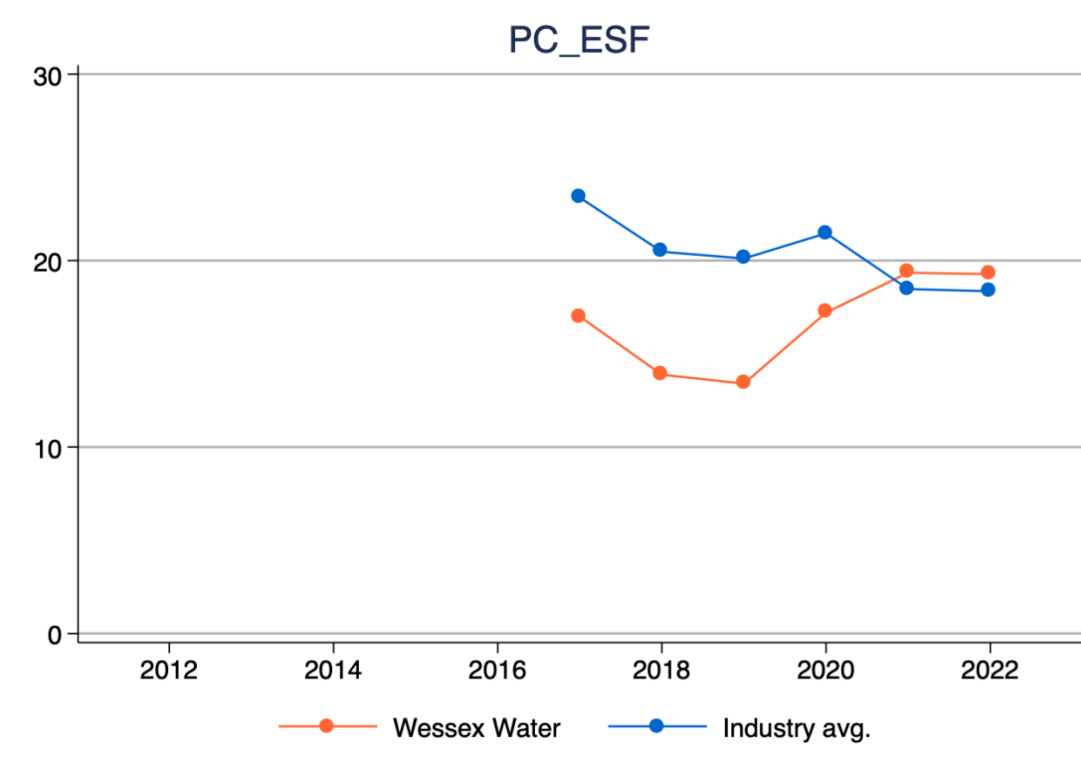
Across the PCs shown we see a number of areas where performance across the industry has shown further improvements beyond the improvements identified by Ofwat at PR19.

While we show Wessex Water’s historical performance for reference, we consider that the more relevant evidence for this claim concerns the industry-average performance, given that Wessex Water’s allowances for base expenditure are derived primarily from Ofwat’s cross-company benchmarking models.









## A1-1.2. Submissions on performance improvements from base expenditure versus enhancement expenditure

In January 2023 Wessex Water provided a response to Ofwat in relation to its data request on “performance improvements from base, enhancement and ODIs”. We said that we had adopted a high-level and proportionate approach to this submission, in the context of a number of significant challenges in providing the full set of information Ofwat has requested. Nonetheless, our submission provides some relevant information and perspectives on this cost adjustment claim.

In the cover to our submission we said the following: “*In practice, we see both base expenditure and performance of the sector increasing, which suggests that performance improvement from base cannot be sustained over the long run. We consider this points to a combination of the following: (1) Service improvements delivered by productivity gains; (2) Service improvements delivered by enhancement, but allocated to base (in the absence of enhancement funding being allowed) – i.e. ‘hidden enhancement’*”.

On this point of hidden enhancement expenditure, our position is that expenditure carried to improve performance is technically enhancement expenditure under the long-standing distinction between base expenditure and enhancement expenditure under Ofwat’s RAGs. However, in practice we consider that the expenditure covered by Ofwat’s base cost models includes a substantial amount of hidden or embedded enhancement expenditure.<sup>10</sup>

We summarise in the table below some key pieces of information and evidence from our response. This shows that for most areas of performance, we consider that we achieved performance improvements entirely or primarily from expenditure *reported as* base expenditure. It also provides examples of specific interventions we have carried out to improve performance, which have contributed to increases in base expenditure over time.

Table 13: Evidence on use of base expenditure to improve performance from Wessex Water January 2023 submission to Ofwat

Performance area	Indicative estimate of % of improvement since 2011 achieved from reported base expenditure	High-level summary of interventions made to deliver performance improvements from base expenditure
Water supply interruptions	100%	<p>Reducing planned interruptions through the use of line stopping and other under pressure techniques to undertake almost all planned works without an interruption over 3 hours. This approach has increased the cost of planned interruptions.</p> <p>Network Response Coordinators</p> <p>Tanker infusion</p> <p>Calm Network Strategy</p>

<sup>10</sup> See sections 2.2 and 2.3 of Reckon (2022) *The opportunities for a more coherent regulatory approach for Ofwat’s funding of base expenditure and enhancements*.

Performance area	Indicative estimate of % of improvement since 2011 achieved from reported base expenditure	High-level summary of interventions made to deliver performance improvements from base expenditure
Leakage	100%	Detect leaks and fix them (repairs) Maintaining and enhancing non-revenue metering
Customer contacts about water quality	95%	Root cause analysis of hotspot areas Mains replacement Proactive customer awareness to inform customers when they may experience discoloured water.
Compliance Risk Index	76%	Catchment management Operation & maintenance of all supply assets Mains replacement Water fittings programme
PCC	43%	Home visits Water efficiency devices Information campaigns Community engagement Research and 3rd party influencing Monitoring and response of behaviours (some retail)
Mains repairs	100%	Mains repairs
Unplanned outage	100%	Operation and maintenance of water treatment works including assets that improve resilience e.g. power backup generators
Serious pollution incidents	100%	Rising main burst detection programme Localised sewer repair Sewer lining Reduced response time to incidents and sampling protocols

Performance area	Indicative estimate of % of improvement since 2011 achieved from reported base expenditure	High-level summary of interventions made to deliver performance improvements from base expenditure
		<p>Operation and maintenance of all waste assets</p> <p>Mis-use campaign (e.g. letters)</p>
Internal sewer flooding	74%	<p>Installing NRV's</p> <p>Routine maintenance (including CCTV inspections and jetting)</p> <p>Localised sewer repair</p> <p>Sewer lining</p> <p>Mis-use campaign (e.g. letters)</p>
Sewer collapses	100%	<p>CCTV inspection</p> <p>Localised sewer repair</p> <p>Sewer lining</p> <p>Investigation of sewerage incidents to detect collapses</p>
Discharge permit compliance	68%	<p>Operation and maintenance of all water recycling centres</p>
Operational GHG emissions - Water	100%	<p>Energy usage reduction</p> <p>EV vehicles</p> <p>Energy efficient equipment</p> <p>Lower emission vehicles</p>
Biodiversity	63%	<p>Survey, manage and improve biodiversity of WWSL landholding including Sites of Special Scientific Interest</p>
Operational GHG emissions - Wastewater	100%	<p>Energy usage reduction</p> <p>EV vehicles</p> <p>Energy efficient equipment</p> <p>Lower emission vehicles</p>

Performance area	Indicative estimate of % of improvement since 2011 achieved from reported base expenditure	High-level summary of interventions made to deliver performance improvements from base expenditure
Storm overflows	0%	N/A
Bathing water quality	85%	Operation and maintenance of water recycling centres (WRCs) discharging into bathing waters
River water quality	0%	N/A

The evidence above concerns Wessex Water. We expect that it is not just Wessex Water that considers that it has achieved performance improvements from expenditure falling within the scope of Ofwat's modelled base costs. Ofwat has access to the full set of company responses, and we would expect Ofwat to be carrying out its own review of the implications of these submissions.

### **A1-1.3. Evidence on cost increases from leakage improvements**

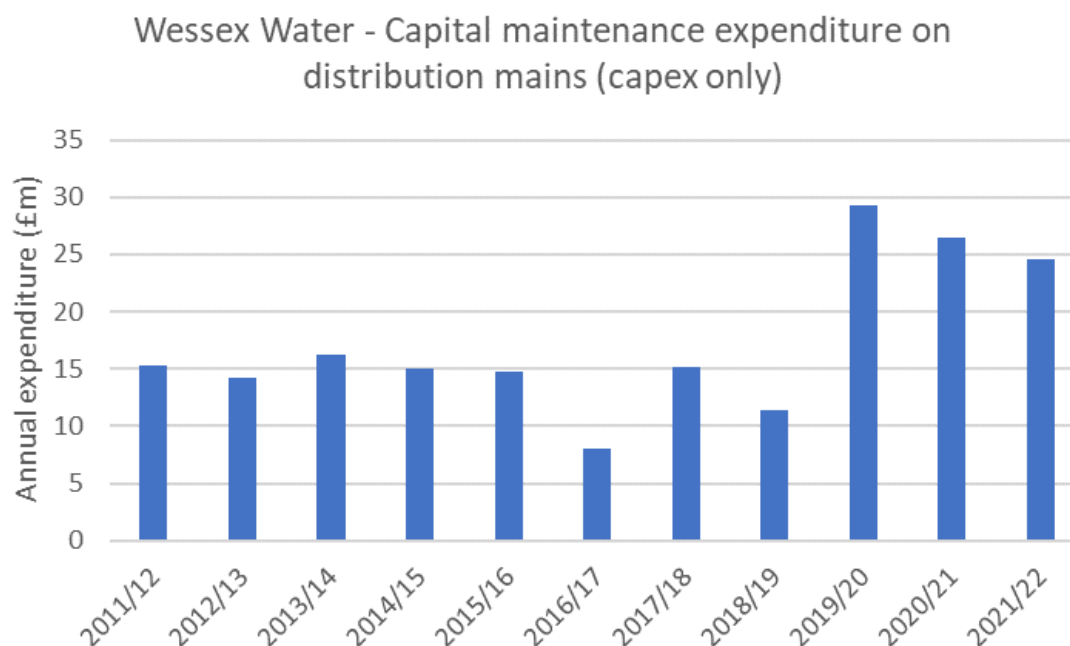
We identified above that we estimated that 100% of leakage improvements since 2011 have been achieved via *reported* base expenditure rather than *reported* enhancement expenditure.

We identified in the table above that the interventions to improve leakage performance included action to detect leaks and fix them (repairs) as well as maintaining and enhancing non-revenue metering.

A better understanding of the impact that performance improvements can have on reported base expenditure can be achieved by considering expenditure on capital maintenance activities relating to distribution mains. This shows that we have spent considerably more in this area since 2019/20 compared to the period from 2011/12. This increase is primarily due to strategic decisions to improve leakage performance in response to the outcome of the PR19 review which set very demanding short-term leakage improvement targets (as well as our longer-term aspirations to reduce leakage). As seen in the charts in the previous subsection, we have made significant increases in leakage performance over the same period.



Figure 3 Wessex Water's capital maintenance expenditure on distribution mains (capex only)



### A1-1.4. Evidence on increased regulatory requirements

In the table below we provide below some examples where increased regulatory requirements will act to increase costs into AMP8, in the case of the wastewater network plus price control.

At this stage, these are provisional and indicative estimates for the purposes of giving further context to the claim. They are not intended to be firm costing of the individual elements.

Table 14: Indicative examples of cost pressures from increased regulatory requirements

Summary of increased regulatory requirement / expectation	Regulator	Year introduced?	Time period impacted	Indicative costing of AMP8 impact £m
Increased number of phosphorus removal requirements at WRCs (P permits). All listed in WINEP, but increased operational and compliance related costs. Eg: increased data reporting.	EA	ongoing	Ongoing but doubled recently	0.25
EDM monitoring (UMON3 storm tank monitors) - increased operational, maintenance and compliance reporting related costs.	EA	2020	2020 to date	0.75
EA strategic review of charging - annual subsistence fees	EA	2018	2018 to date	5

Summary of increased regulatory requirement / expectation	Regulator	Year introduced?	Time period impacted	Indicative costing of AMP8 impact £m
EA strategic review of charging - permit application fees	EA	2018	2018 to date	0.3
EA strategic review of charges - charging for WINEP permit variations	EA	2018	2018 to date	1.0
EA strategic review of charging - charging for pre-application advice	EA	2018	2018 to date	0.05
EA - Digital waste tracking	EA	TBC (2024?)	2024 onwards	0.5
Flow - flow4 at pumping stations	EA	2015	2015	0.25
Flow - regulatory flow measurement requirements on sludge volume flow meters	OFWAT	2025?	2025?	0.5
Pollution - expectation that we need ammonia samples for pollution incident reclassification – response is the utilisation of OHES to support this	EA	2019	2019 onwards	0.5
Flow - AMP8 new drivers for MCERTS on SPSs / SPS EOs	EA	2025	2025 onwards	2.645
Flow monitoring - FPF accreditation for flow (previously only TDV was accredited prior to AMP7)	EA	2020	2020	0.4
EDM monitoring (UMON1 discharge to environment) - increased operational, maintenance and compliance reporting related costs	EA	2010	2010 (for ~90 BW sites), 2015 for remaining ~1200 sites	0.25
Enforcement of third parties (e.g. trade effluent) - not including legal costs	-	2020 internal policy created	2020	0.25
EDM UMON1 annual report	EA	2015	2015	0.25
Flow analyst for annual regulatory report	EA	2020	2020	0.25

Summary of increased regulatory requirement / expectation	Regulator	Year introduced?	Time period impacted	Indicative costing of AMP8 impact £m
EIR requests - requirement for a full time position	ICO	ongoing	ongoing but more since ~2018	0.25

## A1-1.5. Simulation analysis concerning the under-funding of capital maintenance from past enhancements

Along Anglian Water and United Utilities, we commissioned project from Reckon in 2022 which considered a number of issues relating to the interactions between base expenditure and enhancements in the context of Ofwat's approach to cost assessment.

One issue that the project considered was what Reckon described as the "Industry-wide risks of under-funding capital maintenance from past enhancements" and explained as follows:<sup>11</sup>

*"The PR19 approach to cost assessment seems to lack a proper funding channel for the capital maintenance that arises from past enhancements. [...] This issue arises from a number of features of the current arrangements acting together:*

*It is not the intention, or effect, of Ofwat's explicit allowances for enhancement expenditure to cover the expenditure associated with enhancements that arises in later price control periods. These allowances are only meant to cover expenditure within the forthcoming price control period.*

*There is no direct allowance, at the price review, for the capital maintenance expenditure that will be needed in the forthcoming price control period as a consequence of past enhancements.*

*In some cases, the base-plus allowances might provide an implicit allowance for the capital maintenance expenditure for past enhancements through the explanatory variables used for base-plus models. For instance, this may be the case for enhancements relating directly to customer growth, given the use of explanatory variables capturing the scale of water companies' systems in the base-plus models (e.g. the number of connected properties or length of water mains or sewers). But this is very much a special case and whether the allowance is adequate would depend on the details of each case. Most aspects of companies' enhancement activities to improve customer service quality and environmental performance do not get recognised in the explanatory variables in the base-plus models.*

*The capital maintenance expenditure incurred to maintain past enhancements across the industry will, over time, form part of the expenditure data feeding into the base-plus models. However, the allowances derived from base-plus models are estimated using historical data. There is a significant time lag before capital maintenance incurred in a given year feeds through to the allowances from the base-plus models. The allowances for one price control period tend to reflect the capital maintenance expenditure incurred historically (adjusted for any explanatory variables in the base-plus models: see point above) which, in terms of capital maintenance from enhancements, would tend to be less than the capital maintenance requirements faced today."*

In its analysis Reckon assumed that Ofwat's PR24 econometric models of base costs do not have time trend explanatory variables (the PR19 models did not have time trend variables). The situation would be different if the

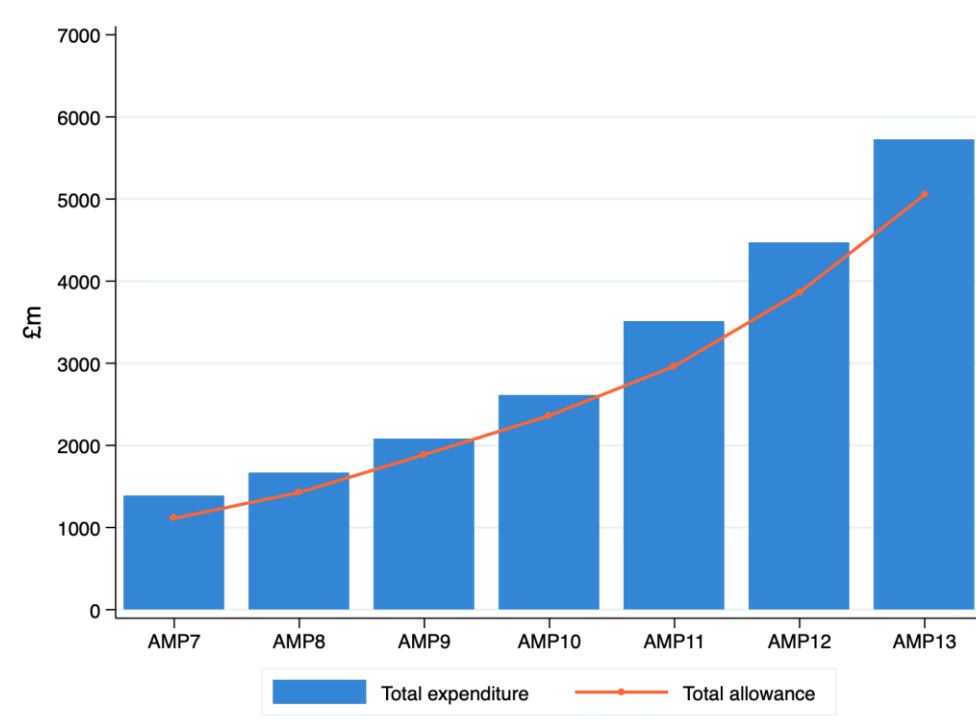
<sup>11</sup> Reckon (2022) *The opportunities for a more coherent regulatory approach for Ofwat's funding of base expenditure and enhancements*, pages 46-48.

models had well-estimated time trend variables, but this was not a feature of Ofwat's recent consultation on base cost models from April 2023.

Reckon's report included some simulation analysis intended to help illustrate - and develop a better understanding of - a number of the issues covered by the project. In relation to the capital maintenance arising from past enhancements, Reckon applied its simulation analysis to a simplified scenario in which companies have been doing capex-based enhancements with a 20-year asset life since AMP4 and in which Ofwat's base cost models cover the most recent five-year window of historical expenditure data.<sup>12</sup>

We reproduce a chart from the report below, which shows that under the simulation scenario, from AMP5 onwards, the total expenditure allowance derived from econometric models applied to historical base expenditure would not be sufficient to fund the efficient levels of a company's capital maintenance expenditure.<sup>13</sup>

Figure 4: Example of Reckon simulation analysis for a scenario of ongoing performance improvements achieved via capex-based enhancements in every AMP



## A1-1.6. Wessex Water RCV growth

As highlighted above, as key aspect of this cost adjustment claim concerns the impact that past enhancement expenditure has on ongoing operating expenditure and capital maintenance expenditure.

<sup>12</sup> For a more detailed explanation of the simulation analysis see Appendix 1 (and in particular scenario S4) from Reckon (2022) *The opportunities for a more coherent regulatory approach for Ofwat's funding of base expenditure and enhancements*.

<sup>13</sup> Note that part of the shortfall is also due to the under-funding of operating expenditure, which is a separate issue in the Reckon report but also applicable to Ofwat's cost assessment approach.

With each successive phase of enhancement activity in each AMP, the capital asset base of the business grows and there are ongoing costs arising from these assets which form part of base expenditure in subsequent AMPs.

While the RCV is not a perfect measure of the capital asset base or growth it is nonetheless relevant to recognise that there has been significant real terms growth in the RCV over time.

We take Wessex Water as an example of a wider phenomenon. We present figures below for Wessex Water's real-term RCV growth over time. We show separate figures for wholesale water and wastewater since the start of AMP8 and figures for then total RCV since 2011/12.

We draw the following high-level points from this analysis:

- These figures are consistent with the view that asset base of Wessex Water has grown in real terms over time.
- These figures show higher RCV growth for wastewater, which (if reflective of longer term trends) is consistent with the finding from step 1 of the analysis in section 2 that there have been larger increases over time in *base-plus expenditure* in wholesale wastewater rather than wholesale water.

Note that RCV is not a perfect measure of the value of capital assets (or changes over time in the physical asset base) for a number of reasons. For instance, the RCV not a pure measure of capital stock and may be affected by regulatory assumptions on RCV run-off and financeability considerations. For these reasons, we do not seek to use the figures from the table below as a direct measure of capital stock growth, but more as a secondary indicator.

Table 15: Calculations of approximate Wessex Water RCV growth over time on a CPIH-real basis

Area	Time period	Approximate annual growth in Wessex Water RCV (CAGR at constant CPIH price base)
Wholesale water	2015/16 to 2021/22	1.4%
Wholesale wastewater	2015/16 to 2021/22	1.8%
Total	2011/12 to 2021/22	1.7%

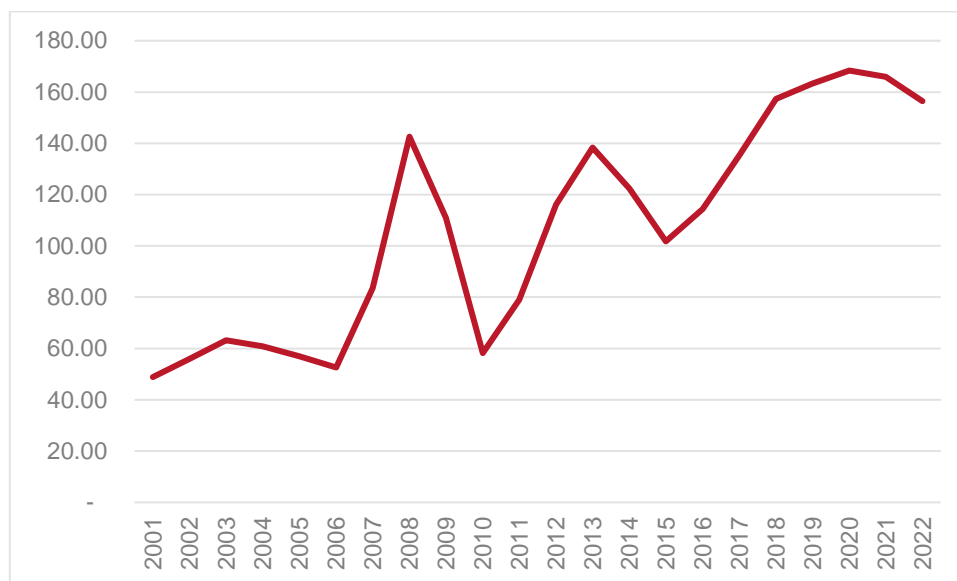
For these calculations, we took the average of the opening and closing RCV values for each financial year (on a financial year end price base) and then converted to a 2022/23 price base using figures for the financial year average CPIH in the corresponding year relative to our forecast of the financial year average for CPIH for 2022/23.

Note that these calculations are approximate at this stage. We may refine these calculations for our business plan, including consideration of updated data and forecast RCV growth for AMP8.

## A1-1.7. Wessex Water capital maintenance over time

In this final section we show long-term profile over time in Wessex Water's capital maintenance expenditure (2022/23 prices) since financial year ending 2001/02. To allow for a long-term perspective, these are aggregate figures for Wessex Water, rather than broken down between wholesale and retail price controls or individual wholesale controls. We have excluded expenditure attributed to unregulated activities.

Figure 5: Wessex Water capital maintenance expenditure (excluding unregulated activities)



The chart shows significant increases over time, including in the period since 2011/12 which is the focus of analysis in section 2 of this claim. There are some ups and downs from year to year which reflect decisions on the profile of spend within price control periods