Leakage Cost Adjustment Claim

PR24 Draft Determination Representations – August 24

Document reference	**ANH_DD_011**		
Title of cost adjustment claim	**Leakage**		
Price control	Water Network Plus	Symmetrical?	YES/~~NO~~
Basis of claim	This Cost Adjustment Claim reflects the additional costs we face to maintain our current frontier levels of leakage. These costs are not captured in Ofwat’s base cost assessment.		
Gross value (£m five years)		1,091.9	
Implicit allowance (£m five years)		1,024.3	
Net value of claim (£m five years)		67.6	
How efficiency of costs are demonstrated		Oxera has analysed the leakage cost and performance data reported by companies through Ofwat’s information requests during AMP8. This industry dataset has been used to derive an efficient cost to deliver our level of leakage.	
Materiality (as % of totex for price control)		1.9%	
How customers are protected		Our leakage performance is central to maintenance of the supply-demand balance in the region, which customers consistently rank as their highest priority. Leakage performance is one of the suite of common performance commitments for PR24. Underperformance would result in a financial penalty against this performance commitment.	
Supporting document references		ANH_DD_065: Review of Ofwat's PR24 DD approach to leakage	

Contents

1. Need for adjustment

1.1. Unique circumstances

a) Is there compelling evidence that the company has unique circumstances that warrant a separate cost adjustment?

Our current levels of leakage performance are at frontier. Over successive AMP periods, we have invested to push this frontier further. This drives costs in two ways – the costs associated with maintaining this level of performance and the costs associated with continuing to make further improvements.

Our frontier leakage performance is driven by the supply-demand needs of the Anglian region. We have taken action to manage demand as part of the WRMP for multiple AMPs, and a key part of this demand strategy has been leakage reduction.

Our continued reduction in leakage has led us to be the water sector's top performer in this area.

The data below from Discover Water[1] shows that in 2022/23 we had the lowest leakage in the industry based on cubic metres per km of main, and lowest amongst the WaSCs on a litres per property basis[2]. We have held that frontier position in the sector for at least the last decade.

These unique circumstances were recognised in the PR19 Final Determination. The CMA allowed a CAC to reflect our unique circumstances on leakage.

b) 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)?

The efficient cost of implementing and maintaining leakage detection and repair technologies is greater for us as a result of our higher performance. Both Ofwat and the CMA have accepted that the economic principle of diminishing marginal returns applies to leakage control, and that adjustment should be made to allowances to reflect that companies at the leakage frontier will incur higher marginal costs to make further leakage reductions.

This effectively means that every incremental improvement – just to maintain our current frontier level of performance – requires significant base expenditure, both objectively and when compared to companies with a lower performance.

The case follows a simple logic. All other things being equal, companies are incentivised to look for the most efficient, lowest cost solutions to achieve leakage reductions which offer most value in terms of leakage per spend. These will often be one-off investments in areas such as pressure management rather than on-going activities.

[1] https://www.discoverwater.co.uk/leaking-pipes

[2] Our analysis of industry data shows that this observation has held for 23/24.

However, once the "easy fixes" or "one-off" investments have been implemented to prevent and avoid leakage, it becomes increasingly more difficult and expensive to detect and address sources of leakage. We have provided extensive evidence of this to both Ofwat and latterly the CMA[3].

Oxera tested the relationship between base leakage expenditure and leakage performance as part of its broader leakage modelling[4]. They used the leakage costs dataset collected by Ofwat over AMP7, which records leakage costs over the period 2018–19 to 2022–23.

Oxera tested models of leakage totex (i.e. aggregating 'maintain and reduce' lines) to assess the statistical evidence for Ofwat's draft determination position on leakage funding (that it costs no more to maintain frontier performance and that only percentage improvements should be funded) relative to the position that it and the CMA took during the PR19 process. They developed a model capturing unit leakage costs on both a per mains or a per property basis, controlling for two cost drivers:

- unit leakage performance, divided by mains or properties (consistent with the dependent cost variable)—this is intended to capture the cost pressures of sustaining a higher level of performance once it has been attained;
- the reduction or increase in leakage next year attained by activities taken over the course of the year—this captures the cost associated with improving performance, realised the next year to reflect the lag in when expenditure can deliver performance benefits.

Oxera found that, conditional on removing several companies with outlying values, both drivers were statistically significant in their model, with an intuitive sign. The result was robust to including the additional 2023–24 year of data and considering log specifications.

Focussing on coefficient 1, Oxera's analysis provides clear statistical evidence that maintaining a lower level of leakage (i.e. higher performance) is associated with increased costs.

The higher costs associated with better leakage performance were recognised in the CMA's Final Determination at PR19 which concluded:

"*Since we conclude that there is a link between current performance on leakage and the costs to achieve that level of leakage, then those companies currently performing better than upper quartile are likely to be incurring more cost than will be reflected in the base cost models. In order to maintain their current level of performance, these high performing companies would be expected to incur costs that exceed the implicit allowance for leakage costs that is included in the base cost allowance*."[5]

It must be stressed that these are costs that any efficient company in the same position as us would face; as noted above, making incremental improvements to maintain a top-performing level of leakage reductions involves comparatively increased costs. In other words, a significant factor for our differentiation from other companies is that our starting position is different; and this does affect our costs to a significant extent.

c) Is there compelling evidence of alternative options being considered, where relevant?

This CAC is based on a top-down view of costs based on data submitted by companies to Ofwat on base performance and costs. Our claim makes use of the richer data on leakage which has been provided by companies since PR19.

The basis of this CAC is drawn from observed costs of leakage maintenance rather than specific options to address leakage. This approach allows us to take an agnostic view to *how* leakage is addressed for the purpose of this CAC.

[3] For example, 'Long term leakage goals, UKWIR, SOC416; SOC173 AW_DD_Leakage_CAC
[4] Review of Ofwat's PR24 Draft Determinations approach to leakage, Oxera, ANH_DD_065
[5] CMA (2021), "Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations", para. 8.59, 17 March.

1.2. Management control

d) Is the investment driven by factors outside of management control?

This investment is driven by factors outside of management control. The need for leading leakage performance is driven by the water scarcity of the region we serve.

Our frontier leakage performance has been driven by the twin track approach to addressing the supply-demand balance and securing water resilience in the driest region of the country[6].

We also face a number of factors in relation to the combination of aggressive soils, extreme weather conditions and vulnerable and aging pipes that create conditions which are unfavourable for driving leakage reduction[7]. We have simultaneously rolled out significant metering and water efficiency measures to reduce demand as well. Therefore, without our strong performance on leakage, there would have been a significantly greater risk to water supply in our region.

The role of these factors is demonstrated by regressing leakage per km of mains against a range of regional and company-specific factors. Following a general-to-specific modelling approach we derive an explanatory model which has an R^2 of over 72 percent (see Table 1). That is, much, but not all, of the variation in leakage can be explained by regional characteristics. This result indicates how initial leakage levels are largely outside of company control. In particular, the variables included in this regression model are either completely outside of management control (such as property density, soil type[8] and rainfall) or are company-specific and represent 'legacy' features of the network that cannot substantively be changed in the short term (such as pipe material or metering penetration). These include some of our region's more challenging factors (such as dryness of the region, as given by rainfall, and soil type). As set out above, given the water scarcity of the region, we have taken more action to reduce leakage further than other companies over multiple AMPs, driven by the need to secure the long term supply-demand balance of water resources in the region. This is the core requirement of the Water Resources Management Plan (WRMP).

Table 1 Regressing leakage performance against regional and company-specific factors

	Rationale	Lnleak_km
Ln property per km of mains	Density	-8.63**
Square of ln property per km of mains	Density (quadratic)	1.11**
% shrink-swell soil	Soil type	0.34
% iron pipes	Asset material	0.31
Nr days with >10mm rainfall	Rainfall	0.065
2022 metering penetration	Metering	-0.39
Constant		11.49
R^2		**0.723**

Source: Oxera, based on Ofwat data.

[6] As referred to in our draft Water Resources Management Plan 2024

[7] See Anglian Water response to CMA provision findings. Annex PF014: The impact of environmental factors on leakage in the Anglian Water region

[8] Shrink-swell soil is defined as the combination of argillic/argillaceous and clay-based terrains, whose tendency to shrink and swell as a consequence of rainfall can lead to leaks and bursts in water ducts.

e) Have steps been taken to control costs and have potential cost savings (eg spend to save) been accounted for?

The overall regulatory framework places strong incentives on companies to control costs and, should different options be available, seek to use cost efficient methods to improve service to customers. However, our performance levels mean that we have to implement additional measures to maintain leakage levels that other companies do not have to deploy.

In terms of leakage, the choices available to the frontier company like Anglian, will be constrained relative to others with higher levels of leakage who may not have deployed some of the options, such as pressure management and transient logger installations, as we already have to lower leakage.

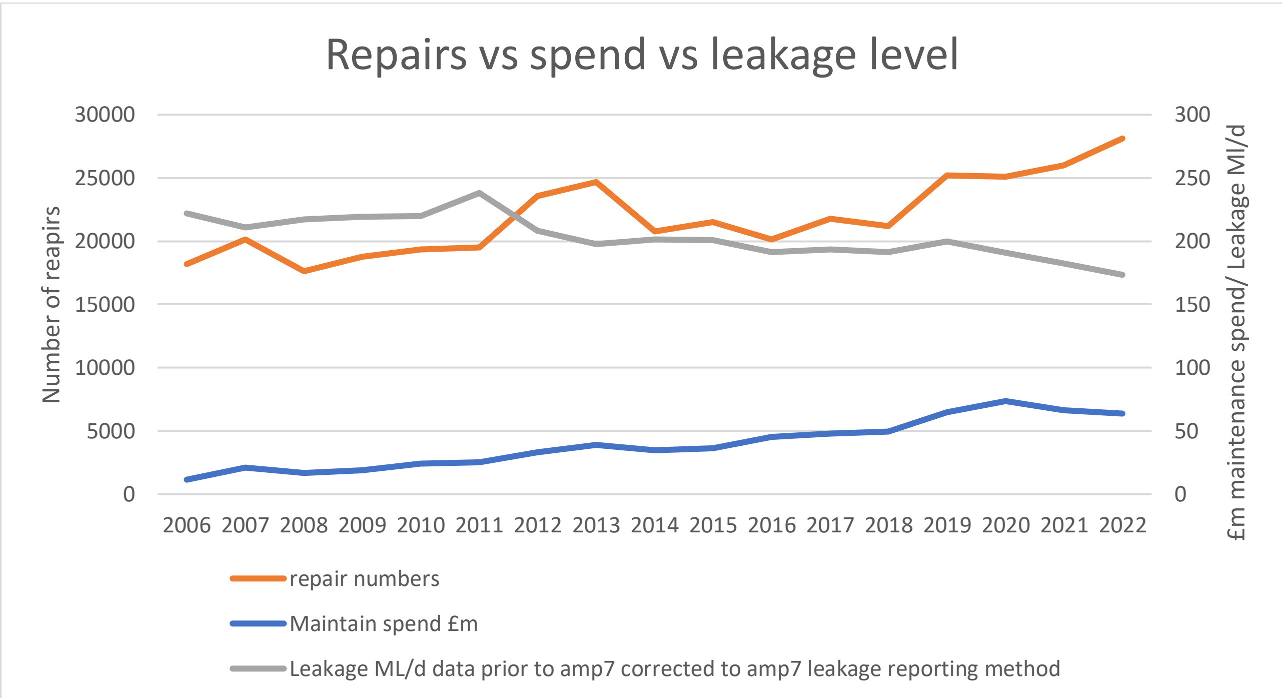
We always try to ensure that the measures we implement to detect and prevent leakage are the most cost-effective by constantly innovating with new leakage-detection technologies such as thermal imaging drones (which identify differences in soil temperature which could be caused by water escaping from a pipe), acoustic noise logging, satellite imagery and analytics and smart meters.

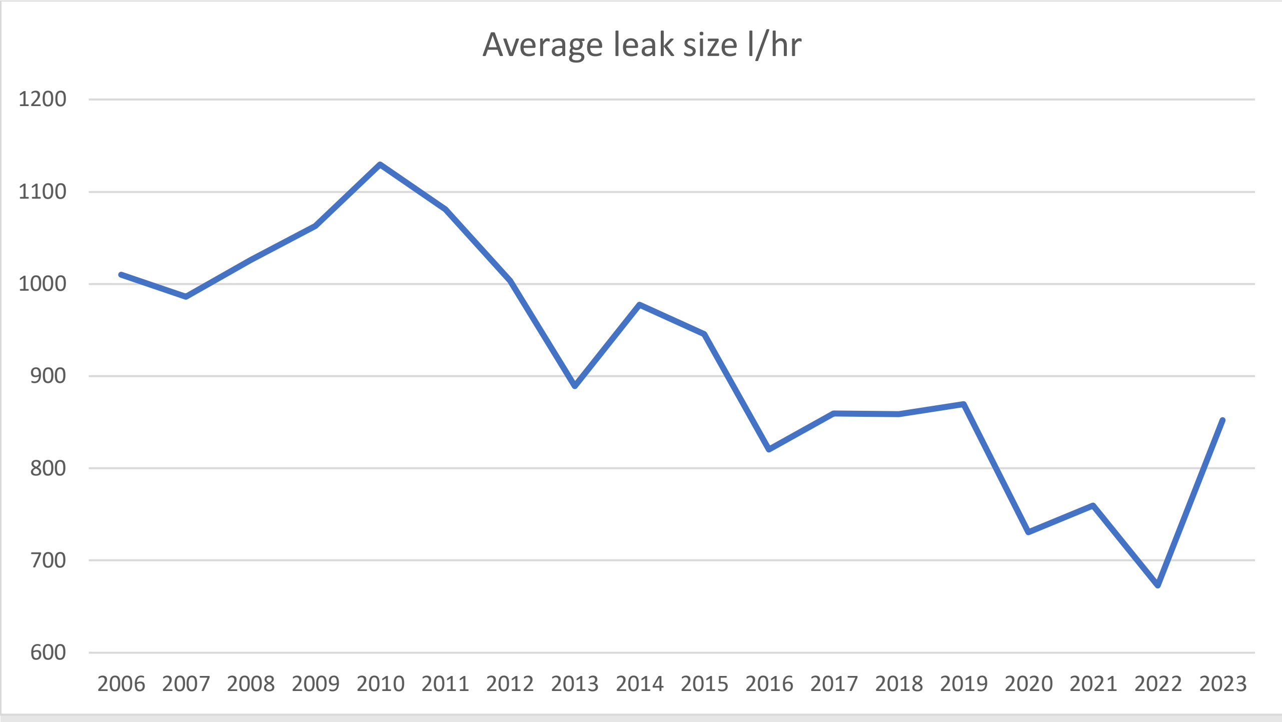
This CAC is based on a top-down assessment using data from companies' submissions to Ofwat. It therefore takes an agnostic view of the measures we and others are taking to control leakage efficiently.

1.3. Materiality

f) Is there compelling evidence that the factor is a material driver of expenditure with a clear engineering / economic rationale?

The PR19 Final Determination recognised the cost impact of maintaining lower leakage levels. We have also observed that as leakage levels decrease, there are higher repair numbers and the average volume of water saved per repair (average leak size) reduces, meaning a greater number of individual leaks need to be fixed to maintain leakage at the current level. Repair costs rise accordingly.





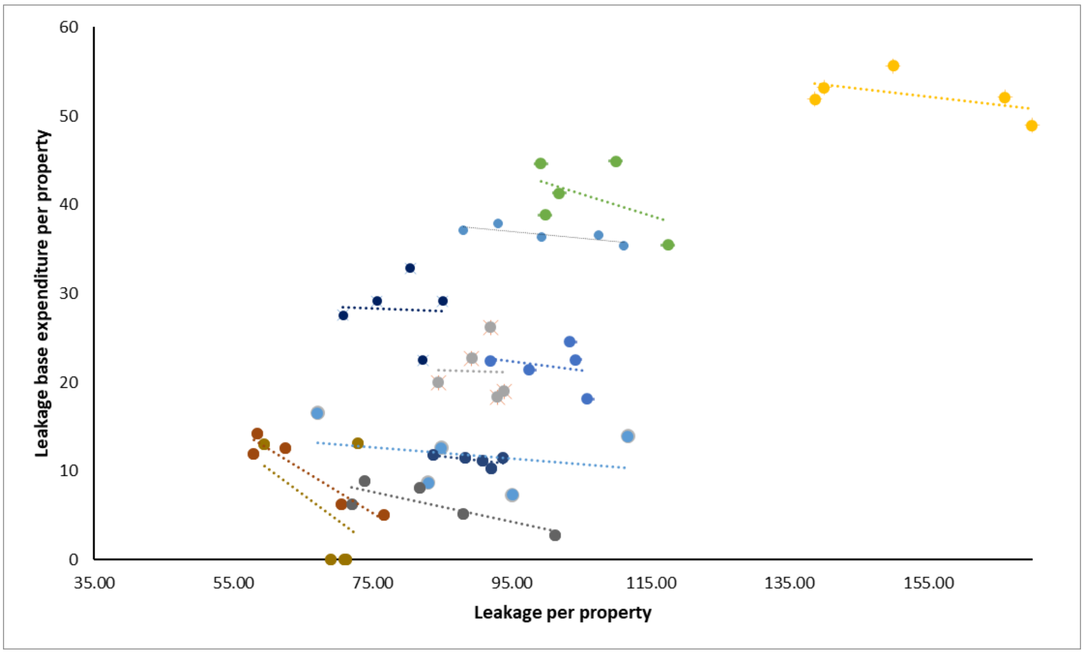
[9]

This CAC is based on an economic modelling approach which uses the industry dataset for leakage base costs**. This data shows that as companies reduce leakage, their leakage maintenance costs increase.**

In the chart below each set of observations of the same colour represents the leakage outturn and leakage expenditure of an individual company for five separate years. It can be seen that for any single company, a decrease in leakage is associated with an increase in cost (i.e. each dotted coloured line slopes upwards to the left). It is vital to recognize this company-specific effect: ignoring it would suggest the reverse.

As explained in detail in the following sections, the impact of maintaining frontier performance in terms of leakage volume per km of mains is estimated to be equal to c. 3 percent of total AMP8 wholesale water modelled expenditures, that is significantly above Ofwat's materiality threshold of 1 percent.

[9] The spike in average leak size in 2022/23 was the result of the extraordinary summer of 2022, when UK temperature records were broken in our region, which caused a break-out of unusually large leaks.



g) Is there compelling quantitative evidence of how the factor impacts the company's expenditure?

The impact of leakage on company expenditures can be demonstrated through a number of robust econometric approaches:

1. Controlling for leakage by adding leakage per km of mains as an independent variable in the TWD and WW regression models (and testing for endogeneity)
2. Controlling for leakage by adding leakage per km of mains to the TWD and WW models, but separately assessing the leakage and non-leakage components of TWD (and testing for endogeneity). The latter is modelled as per Ofwat's proposed base models, while leakage costs would be derived by using leakage per km of mains instead of the pumping variables
3. Utilising "out-of-samples" predictions based on the appended models used in approaches 1 and 2, whereby the performance of a company is compared to that of a hypothetical identical company that is characterised by a leakage performance equal to the median.[10] Once the impact of improving leakage performance by reducing cost efficiency is taken into account, the catch-up efficiency challenge to the UQ is applied.

These three, separate approaches rely on different estimation techniques and are based exclusively on the latest versions of data published by Ofwat in the "PR24 Cost Assessment Master Dataset, Wholesale Water Base Costs v4" and in the Leakage dataset published in April 2022.

As a cross-check, we also update the CMA's approach from the PR19 redetermination. In the PR19 redetermination the CMA estimated the adjustment to base costs for maintaining leading levels of leakage as the percentage of outperformance of the industry upper quartile leakage level[11] multiplied by the forecast costs. (The leakage cost dataset was not available to the CMA at the time of the PR19 appeals).

All the approaches described present consistent results in terms of both the direction and magnitude of the impact of leakage on our expenditures (see below).

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[10] The median is selected as it appropriately captures the trade-off between cost efficiency and leakage performance. The trade-off concerns the performance of the entire industry and should not be mistaken for an efficiency challenge.

[11] Leakage performance is calculated as the geometric mean of leakage volume per km of mains and per property connected over the last three years of available data.

Adjustment to allowances (including implicit allowance)

h) 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?

There is an implicit allowance within the Botex Plus models as all companies have some expenditure on leakage.

However, none of the factors in the proposed cost models reflect leakage directly or indirectly. This was recognised in the PR19 Final Determination, and the approach we have taken to developing this cost adjustment claim has focused on taking into account the incremental leakage costs linked to frontier performance which are not reflected in Ofwat's Botex Plus models.

i) Is the claim material after deduction of an implicit allowance? Has the company considered a range of estimates for the implicit allowance?

The results from each approach are as follows[12]:

1. Approach 1 (adding leakage per km of mains to the initially proposed models) leads to an increase in the modelled AMP8 allowance of **£61.0 million**;[13]
2. Approach 2 (separately modelling leakage and non-leakage TWD) leads to an increase in the modelled AMP8 allowance of **£68.5 million**;[14]
3. Approach 3 (estimating an out-of-sample prediction based on median leakage performance) leads to an average increase in the modelled AMP8 allowance of **£73.3 million**.[15]

Triangulating these approaches by taking the average across these three approaches results in a claim for maintaining a leading level of leakage of **£67.6 million**, above the materiality threshold of 1 percent.

These estimates are below the outcome from using methodology used by the CMA in the PR19 redetermination, which produces an adjustment claim of **£81.2 million**. This is based on our current outperformance rate of 21.8 percent (calculated over the years 2019/20-2021/22), which is similar to the CMA's forecast of 21.7 percent,[16] which was based on the stretch in the relative PC performance in 2019/20. At PR19 this methodology resulted in a £42.6 million increase in base allowance (£50.3 million in 2022/23 prices),[17] whereas the current forecast of £374 million in base leakage costs leads to an adjustment claim of £81.2 million.

Lastly, the change in total allowances deriving from the suggested adjustments is symmetric at the industry level.

Looking at the historical period used in our analysis (2018-2022), the industry's total triangulated WW modelled costs decrease by **0.04 percent** in the case of approach 1. and by **0.8 percent** in the case of model 2.

We based the symmetry of the adjustments on the results derived from AMP7 historical data, as the exact impact on forecast years is expected to evolve (with continuous updates of the cost drivers forecasts and the CAC consultation). AMP8 forecasts for leakage across the industry are particularly uncertain, given the different starting positions, the impact of regional factors and management focus.

[12] The results were calculated in mid 2023 on the basis of data available at that time.

[13] Similar results are obtained when using leakage per connected property or the geometric average of the two measures.

[14] Again, the results are consistent when using alternative measures.

[15] In particular, the adjustment is equal to £67m and £80m when based on Approaches 1 and 2 respectively.

[16] CMA (2021), "Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations", para. 8.78, 17 March.

[17] This is based on inflating the CMA's £42.6m figure by 18.06% to 2022/23 prices. Source: CMA (2021), "Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations", para. 8.78, 17 March.

j) Has the company accounted for cost savings and/or benefits from offsetting circumstances, where relevant?

The modelled approach we use takes implicit account of the impacts of leakage on our overall costs (positive and negative).

k) Is it clear the cost allowances would, in the round, be insufficient to accommodate the factor without a claim?

By developing this cost adjustment claim using data on base costs only and focussing on those costs which are not covered by Ofwat's base models, we exclude any costs which are covered by either the base models or enhancement allowances.

The cost adjustment claim therefore presents the leakage costs that are not covered by other cost allowances in the round.

l) 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?

We have taken a long-term view of our required leakage base costs. There is a continued need within our WRMP to continue to drive leakage down. This will require both base allowances to maintain the level of leakage we have previously achieved and enhancement expenditure to drive leakage down beyond the leakage level we have already reached.

m) If an alternative explanatory variable is used to calculate the cost adjustment, why is it superior to the explanatory variables in our cost models?

In Approach 2, we substitute the pumping activity variable with leakage when modelling leakage-related TWD costs, as it provides a more direct operational driver. However, given the absence of any leakage-related variable in the original models, our cost adjustment claim incorporates the costs associated with leakage reduction in a way which the base models will simply assume to be inefficiency. The analysis carried out by Oxera shows that part of what the base models will assume to be inefficiency in fact reflects the costs associated with maintaining a lower level of leakage than other companies.

2. Cost efficiency

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)?

The cost efficiency of the estimates is supported by the range of cost models we have tested in order to reach the value of this CAC. The data used in the analysis comes from both v4 of the wholesale water base cost dataset and the leakage dataset published by Ofwat following the April 2022 data request. Since the latter only covers the period 2018-2022 and the data from the two sources is used jointly, the timeframe of the analysis has been reduced to the 5-year period 2017/18-2021/22.

The whole process for each of the estimates provided and the different steps undertaken are outlined below.

For approaches 1 and 2 we control for leakage by adding leakage per km of mains and compare the result of the models with and without this variable, thereby following one of Ofwat's suggestions for calculation implicit allowances.[18] In particular the steps involved are as follows:

1. In the case of Approach 1, Ofwat's proposed TWD and WW models for PR24 are estimated with leakage per length of mains as an additional cost driver. In the case of Approach 2, the same analysis is performed but separately assessing the leakage and non-leakage component of TWD. The analysis period in both approaches was restricted to 2018–22 due to the limited availability of leakage data.
2. Computation of an upper quartile efficiency challenge for each of the two scenarios, based on the last five years of data, as per Ofwat approach in PR19.
3. Production of AMP8 forecasts for the relevant cost drivers, namely: the length of mains, the WAD LAD from MSOA and the WAD MSOA, number of properties, APH TWD, number of booster pumping stations, WAC, percentage of water treated in bands 3 to 6 as well as leakage level. While all of these variables have been part of an internal specific bottom-up forecasting process, the two WAD measures as well as leakage have been derived following a simple extrapolation of the compound annual growth rate observed over 2011/12-2021/22.
4. Computation of AMP8 predicted costs for each scenario, using the estimated regression coefficients derived in Point 1 and cost drivers forecasts derived in Point 3. The same triangulation process as Ofwat's was applied, i.e. first derive modelled costs for each sub-model and then average them.
5. Subtract from the costs predicted at Point 4 the predicted costs derived from Ofwat's original models, so as to get the net value of the claim.
6. Apply the historical upper quartile efficiency challenge computed in Point 2 to the claim figure estimated at Point 5 so as to obtain the final efficient net value of the claim.

In the case of Approach 3:

- The starting point coincides with the econometric models developed in Approaches 1 and 2.
- Instead of comparing the modelled allowance once leakage is added as an additional independent variable, an hypothetical company identical to AWS is constructed, the only difference being that its leakage performance corresponds to the industry median.
- The upper-quartile efficiency challenge, based on the last five years of data, is applied.
- The CAC is then calculated as the gap in AWS' modelled costs and the costs modelled for the hypothetical company that has a median leakage performance, thus representing the additional costs due to above-median leakage performance.

We also tested for endogeneity in the regression models once leakage is added as an independent variable. Consistent with standard econometric practice, we performed the Durbin-Wu-Hausman test to ensure that endogeneity was not undermining the validity of the claims. The results show that endogeneity is not an issue.

[18] Ofwat (2022), "Appendix 9 Setting expenditure allowances", para. A.1.3.1, December.

The various models proposed all present similar results, and the CAC figure is hence based on the average of the three.

b) Does the company clearly explain how it arrived at the cost estimate? Can the analysis be replicated? Is there supporting evidence for any key statements or assumptions?

All the data used in the analysis is the latest version of datasets published by Ofwat, while the few assumptions made in the analysis are clearly stated and assessed.

c) Does the company provide third party assurance for the robustness of the cost estimates?

Our cost estimates were developed independently by a third-party provider (Oxera).

3. Need for investment

a) Is there compelling evidence that investment is required?

There is an expectation among customers, and a requirement in our WRMP, to reduce leakage further in AMP8. Whilst enhancement allowances are expected to cover the required reduction in leakage, we will also face higher costs to maintain the base level of leakage that this reduction builds upon. This makes the ongoing activity to maintain leakage essential to ensure further reductions in leakage can be made.

As noted elsewhere, both in this claim and in the body of our Representations, there is compelling evidence that this investment is required to maintain our leakage level in AMP8. In particular, we would point out that **after four years of AMP7, we have already spent nearly £50 million more on base leakage maintenance and reduction than we forecast to spend at PR19 across the whole of AMP7.**

b) Is the scale and timing of the investment fully justified?

The scale and timing of the investment for this CAC is fully justified as it reflects the costs of maintaining the current level of leakage before any improvement is made. Without the cost allowances in the CAC we would expect leakage performance to deteriorate, putting at risk our supply-demand balance and going against a key customer priority.

c) Does the need and/or proposed investment overlap with activities already funded at previous price reviews?

There is no overlap with funding from previous price reviews. At PR19, we were allowed a cost adjustment claim on the same basis that this one is being made – i.e. to reflect the costs of maintaining leakage performance at a better level than other companies. These ongoing costs remain and we remain a top performer on leakage, and so the basis of that claim means it is still a valid one to make at PR24. Enhancement allowances were made at PR19 to reduce the level of leakage in AMP7, but the costs reflected in this cost adjustment claim only reflect the allowance to maintain leakage levels, not for leakage improvement.

d) Is there compelling evidence that customers support the need for investment (both scale and timing)?

Our customer engagement has shown that leakage control is a top priority for customers, so leakage reduction has been a big focus of our efforts to manage demand as part of the WRMP. To achieve further leakage reduction, as supported by customers, necessitates carrying out the activities required to maintain the level of leakage that we have previously achieved. As this cost adjustment claim is required to deliver the costs of this leakage maintenance, it is clear that customers support the scale and timing of this maintenance activity.

4. Best option for customers

a) Did the company consider an appropriate range of options to meet the need?

This cost adjustment claim is not explicitly tied to delivering leakage maintenance through specific means. Instead, it uses the data available to Ofwat to present the efficient additional costs presented by us to maintain leakage levels compared to other companies. The nature of this claim is therefore agnostic to the options that we and others will use to maintain leakage levels. However, it has been recognised that our performance levels mean that we have to implement additional measures to maintain leakage levels that other companies do not have to deploy. This is in the interest of serving our customers in the best and most cost-efficient way.

As the industry leaders on leakage performance, we are constantly innovating to better serve customers by both detecting and preventing leaks. We use new leak-detection technologies such as thermal imaging drones (which identify differences in soil temperature which could be caused by water escaping from a pipe), acoustic noise logging, satellite imagery and analytics and smart meters to help locate otherwise elusive leaks in a time- and cost-efficient way.

We have a pressure calming programme to reduce leakage, reduce pressure transients and prevent mains bursts. In collaboration with Cranfield University, we developed a predictive forecast model to assess where burst water mains are likely to occur, based on environmental data science modelling of weather, soil, and infrastructure variables.

Leak detection allows us to prioritise repairs and fix small leaks early before they result in burst pipes, disrupt supply and become more costly to fix. Such solutions are more costly in the short term but cheaper in the long-term. After a leak is detected, technicians will investigate and repair. Our Integrated Leakage and Pressure Management provides a visualisation platform for the whole leakage process, including from effective targeting of high areas of leakage, deployment of field resources and resolution. Controlling leaks is therefore a combination of labour (e.g. technicians) and technology (e.g. noise loggers).

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?

The scale of leakage improvement is determined as part of the overall WRMP process. Companies are required to demonstrate they have considered a suite of options for the overall management of their long term supply-demand balance.

As set out above, the nature of this claim is agnostic to the options that we will use to maintain leakage levels. We deploy a range of prevention, awareness, location and fixing methods to ensure we deliver a portfolio of leakage control which represents good value for customers, communities and the environment. Through the approach we have taken to developing the costs for this claim, using data provided by all companies to Ofwat, we have put forward a cost adjustment claim which is benchmarked to ensure we are putting forward a cost adjustment claim which represents efficient expenditure.

c) Has the impact of the investment on performance commitments been quantified?

This investment will have an impact on the leakage performance commitment. Allowance of the amount requested would (along with the base implicit allowance) reflect the costs required for maintenance activity required (alongside the enhancement allowance) to deliver the leakage performance commitment level. If the expenditure covered by cost adjustment claim is made, we would expect to see a deterioration in leakage performance (notwithstanding any leakage-impacting enhancement allowances which are granted).

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?

No, as this cost adjustment claim covers activities which take place across our water supply network, it is not a discrete activity which would be suitable for delivery through a third-party through DPC.

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.

Customers tell us that leakage remains a consistent priority for investment. Our customers tell that that we must 'get our house in order' first before we look at ways to reduce customer consumption. We integrated customer views into both the development of our Water Resources Management Plan (WRMP) and our PR24 Plan.

This cost adjustment claim considers the efficient cost for maintaining leakage levels using a top-down econometric approach rather than the costs of delivering specific solutions to maintain leakage levels.

5. Customer protection

a) Are customers protected (via a price control deliverable or performance commitment) if the investment is cancelled, delayed or reduced in scope?

Customers are protected from the cancellation, delay or reduction in scope of this investment by the common performance commitment on leakage. If any of the leakage benefit within the scope of this CAC (or indeed any leakage enhancement) is not delivered, this will result in a greater penalty against this performance commitment. Accordingly, customers will not have to pay more if we fail to deliver this investment.

It must be stressed that Anglian faces a much more challenging performance commitment compared to other water companies. This was also the case for AMP7, where underperformance as against these challenging targets resulted in a proportion of leakage enhancement being returned to customers through the Tier 1 incentive rate.

b) Does the protection cover all the benefits proposed to be delivered and funded (eg primary and wider benefits)?

The common performance commitment and associated ODI are directly linked to the purpose of this investment (i.e. delivery of funded leakage levels).

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