APPENDIX SES028

COST ADJUSTMENT CLAIM: REGIONAL WAGES

Contents

1. Introduction

In this appendix, we present a cost adjustment claim for the additional, unavoidable, external costs SES Water faces due to the relatively high labour costs in the South East of England, where we operate.

In this claim we show that regional wages in our area of operation have been, on average, 22.5% higher than the average in the industry over 2011/12 to 2021/22. We also show that the impact of higher regional wages in the South East of England is not fully captured in Ofwat's base cost models and, therefore, a Cost Adjustment Claim is required.

A. Claim structure

1. This document is structured in line with Ofwat's assessment criteria for base cost adjustment claims:
   - Section 1 provides a brief summary of our cost adjustment claim, its rationale and relevant context
   - Section 2 sets out the need for an adjustment, including the unique circumstances leading to the requirement; the degree to which management has controlled the need for an adjustment; and our estimate of the required adjustment and its materiality.
   - Section 3 sets out our work to demonstrate the costs we incur in this area are efficient.
   - Section 4 briefly discusses the customer protections that are in place from Ofwat granting this additional allowance to the base cost models.
   - Two annexes provide supporting material including further evidence to justify our claim and regression results that have informed our analysis.

B. Summary

2. Our claim relates to the relatively higher labour costs we are exposed to due to us operating in the South East of England. Generally, we and our suppliers, are required to recruit heavily from the local labour market, where, as we evidence in this claim, prevailing wages are typically higher than the average across England and Wales. While we can, and do, partially mitigate this through strategic partnerships with suppliers who recruit from elsewhere within the UK, there is still a residual non-controllable impact on our cost base.
3. In this claim we show that regional wages in our area of operation have on average, been 22.5% higher than the average in the industry over 2011/12 to 2021/22. We demonstrate through the econometric models that we present, that exposure to higher regional wages is particularly prevalent in the Treated Water Distribution (TWD) element of the value chain that is subject to Ofwat price controls.
4. There is an economic rationale for regional wages being outside of management control, particularly for our TWD activities. The maintenance and renewals of our distribution network requires labour to be based locally for long periods. As such, it is often more efficient to recruit locally. This means that we are more exposed to the higher labour costs

in the South East of England compared to many other water companies operating in England and Wales.

5. Ofwat is proposing to account for the differences in regional wages indirectly via a population density variable in its PR24 base cost models. We consider this to be insufficient. We show in this claim, that for the TWD models in particular, adding a variable on regional wages improves the models' predictive power, as measured by R-squared. Under these models, the coefficients for both the density and regional wage variables maintain their significance.

6. There is also regulatory precedent for the use a direct regional wage cost driver. Ofgem has recently applied a regional wages variable in its RIIO-ED2 and RIIO-GD2 using a three-region approach – London, South East and elsewhere.[1]

7. We estimate that SES Water will need an allowance of £5.7m over AMP8 (approximately £1.1m per annum) in 2022/23 prices, in addition to what is implied within Ofwat's proposed base cost models. To make sure that our claim is efficient:

   (a) We have taken an econometric approach to estimating the impact and included a catch-up efficiency adjustment. As such, we are looking at the industry-wide impact of regional wage differences on costs, as opposed to undertaking a company-specific empirical exercise. We have also relied on the base cost models published by Ofwat as the basis of our claim, only adding an additional variable to reflect regional wage differences.

   (b) We have limited our claim to the wholesale business, where we have greater exposure to higher regional wages and less ability to mitigate its impact.

   (c) We take a cautious approach to projecting our cost drivers. Namely, we assume that future wages will stay constant at 2021-22 levels.

8. The associated costs from higher regional wages make up 1.9% of our AMP8 totex.

1 Ofgem (2022), RIIO-ED2 Final Determinations Core Methodology Document. Available on Ofgem website.

2. Need for adjustment

In this section we explain why being located in the South East of England, means that we are exposed to higher-than-average wage costs, and why the impact of our cost base is largely outside of management control.

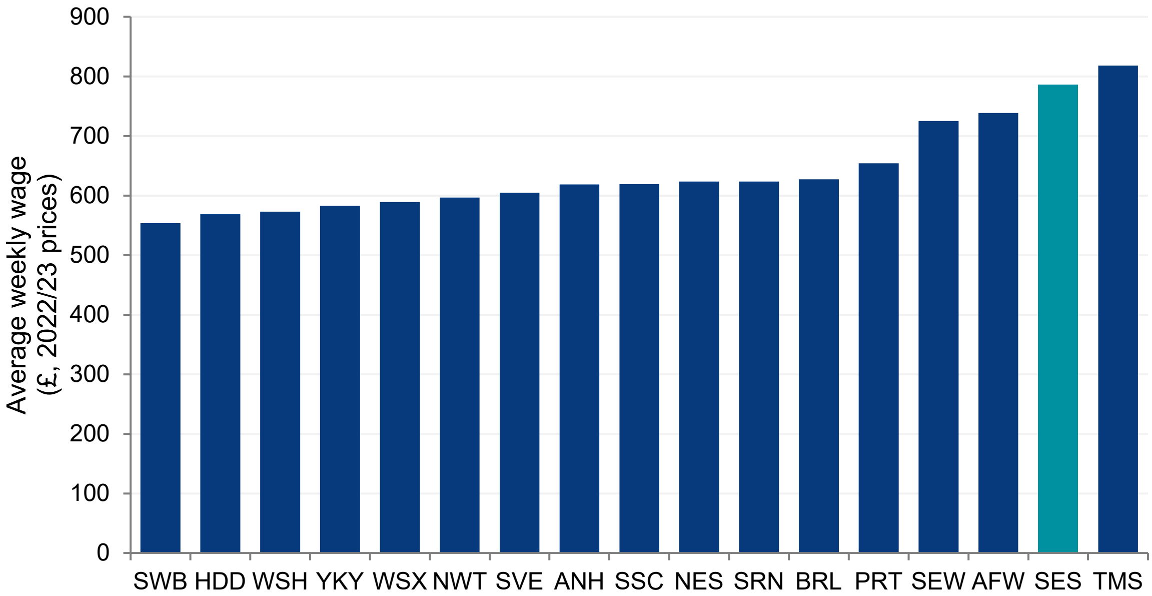
We also explain why Ofwat's existing base cost models do not fully account for this effect. Finally, we present the size of the adjustment required to account for these extra costs, taking into account our estimate of what is implicitly captured through Ofwat's existing models.

A. SES Water's unique circumstances

Wages in SES Water's operating area are higher than most other water companies in England and Wales

9. In Figure 1 below, we show weekly wage rates by water company area, averaged over the period 2011/12 and 2021/22. We have constructed this using data on weekly gross wages for local authority districts from the Annual Survey of Hours and Earnings (ASHE) and the mapping of local authorities to water companies as published by Ofwat.[2]

Figure 1. Gross weekly wages by company area, 2011/12-2021/22 (£, 2022/23 prices)



Source: SES Water analysis of ONS data

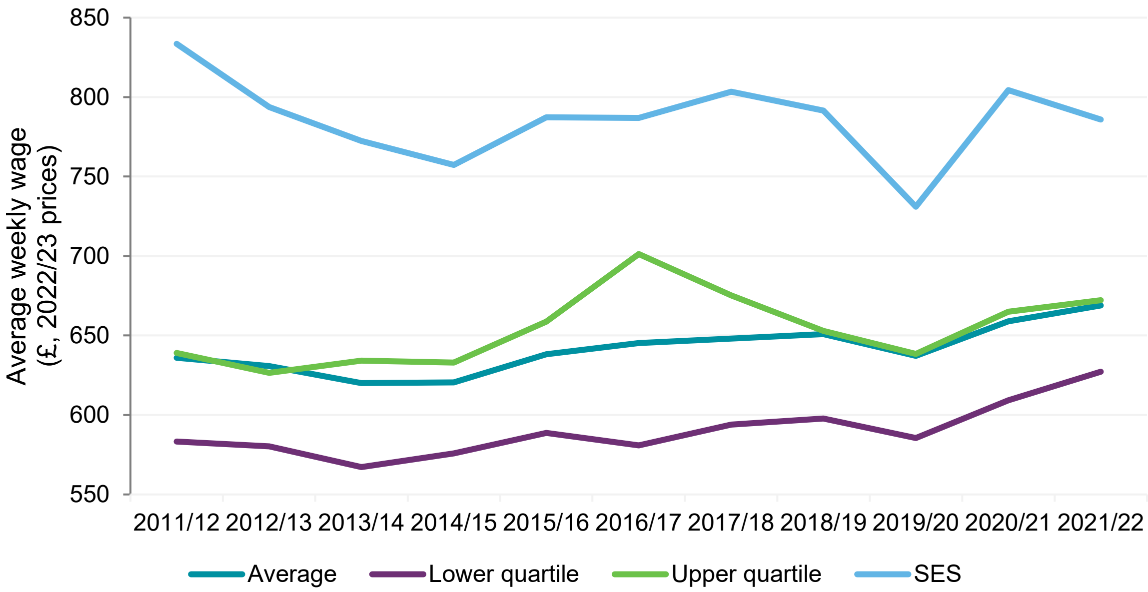
10. We can see from the figure that SES Water's service area has amongst the highest weekly wages on average in the sector, second only to Thames Water's service area. We can also observe from the average wage rates in the areas served by South East Water, Affinity

2 ONS, *Earnings and hours worked, place of residence by local authority: ASHE Table 8.* Available on ONS website.

Water, SES Water, and Thames Water, a clear differential in the average wage rates reported by the ONS in the South East of England and in London, relative to other water company service areas in England and Wales.

11. In Figure 2 below, we show how weekly wages in the areas served by SES Water has changed over time, and how it compares against the median, upper quartile and lower quartile wages reported by the ONS by water company operating area.

Figure 2. Average and quartiles of gross weekly wages by company service area, 2022/12- 2021/22 (£ 2022/23 prices)



Source: SES Water analysis of ONS data

12. We can see from the figure above that the trend of higher average wages in the area served by SES Water holds across a number of years. As such, it is reasonable to expect such a trend to continue into AMP8.

There is a case for including a specific cost driver within the base cost models to account for regional wage differences.

13. Given the data presented above on wage differentials in the South East, we consider there is a strong case for Ofwat considering including a variable that directly reflects regional wage differentials in its base cost models.

14. Regional wage rates, which reflect local labour market conditions, are largely outside of companies' control. As shown above, wage rates in our service area are relatively higher to that of other companies, with the exception of Thames Water. This is mostly caused by structural factors in the labour markets. Labour demand is high in the service area of SES Water, where companies compete for labour with London and the regional transport hub that is Gatwick. In addition, the wages we pay must also reflect the relatively higher housing costs in the region. Labour costs should, therefore, be considered a valid external cost driver in the case that companies are required to source their labour locally.

15. Our geographical location means that we have to draw a significant proportion of our labour from the South East, which also holds for the staff of our main contractors. While in some instances and for some roles, it is possible to use staff from outside our local labour market, this is not true for most of our critical activities.

(a) Our base operational and capital activities within our wholesale business, e.g. the operation of treatment plants, the maintenance and renewals of the distribution network, etc., require staff to be located relatively close to our assets. As such, it is necessary and more efficient to recruit staff from the local labour market.

(b) There is no strong economic rationale for why wage rates for technicians, engineers, etc., would be dictated by the national labour market as opposed to the local labour market.

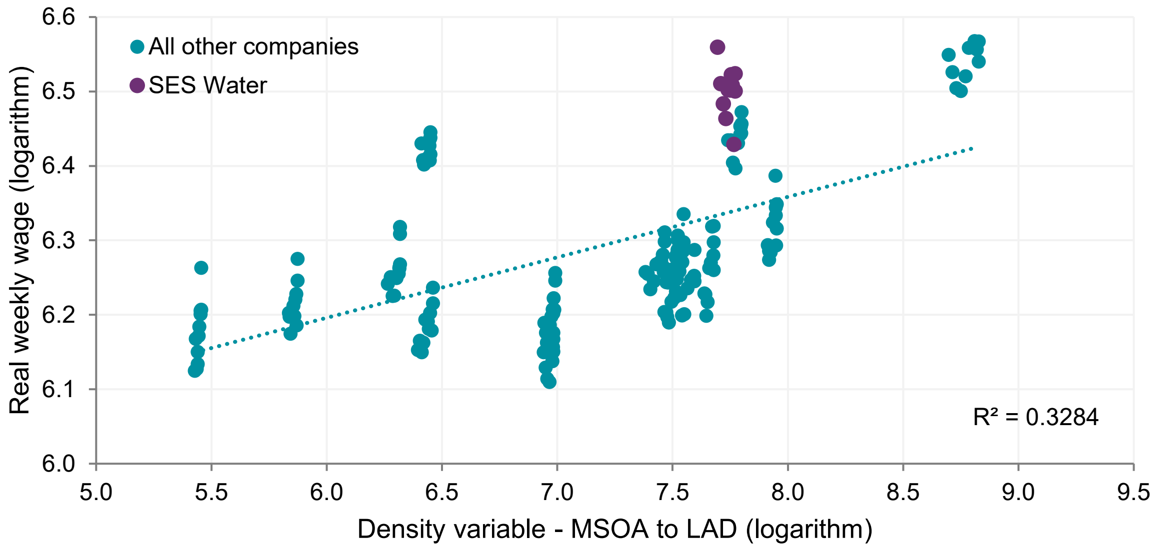
The density variable in Ofwat's models does not adequately account for regional wages.

16. Ofwat proposes that the population density variable in its Wholesale Water base cost models indirectly controls for the impact of regional wage differentials on water company costs. The models differ by the type of density variable used with three different measures used; two density variables based on the Middle Super Output Area (MSOA) level population data and a variable measuring properties per length of mains.

17. Ofwat has argued that the density variable captures several impacts population density can have on costs, including the reduction in costs from scale effects and efficient use of resources. Factors that may lead to higher costs in areas of higher population density include greater travel time from operating in more congested operating areas or because more densely populated service areas are correlated with areas of higher wage rates. Ofwat suggests that adding a quadratic form of the density variable allows for the models to account for the two opposing effects of population density.

18. In Figure 3 below, we show the correlation between a regional wage index variable constructed using ASHE wage data from the ONS (see Section 3 below for further discussion) and Ofwat's density variable based on MSOA data mapped onto local authority districts. The correlation between the two variables is 0.57.[3]

Figure 3. Correlation between an ASHE regional wages variable and the MSOA to local authority district density variable



Source: SES Water Analysis

3 Correlation between this regional wage variable and the two other density variables proposed by Ofwat for use in its base cost models can be found in the annex to this document.

19. We can see from the figure above that while there is a correlation between the density variable used in Ofwat's models and prevailing regional wages, it is not a strong correlation. In particular, we can see from the figure above that for SES Water's service area, our data points sit above the line of best fit, meaning that the wage rates in the areas we serve are higher than the average but that this is not fully accounted for through the density variable. We observe a similar effect with the other variables, as shown in the annex.

20. Given the above, we consider Ofwat's density variables do not fully capture the impact of regional wage differences within the base cost models, particularly for SES Water's area. We also show in the econometric models we use to estimate the size of our claim, that the inclusion of a regional wage variable improves the predictive power of the TWD base cost models, and both the regional wage and density variables retain their significance.

21. We consider that the impact of regional wages on costs is clear, easy to measure, and exogenous, unlike many other effects related to population density. This warrants the inclusion of a dedicated variable within Ofwat's base cost models.

22. We acknowledge that the density variables within the base cost models are trying to capture a range of factors. As such, we propose adding a variable that reflects regional wage differences rather than replacing the density variables proposed by Ofwat. Adding one additional variable to reflect regional wages will keep the models relatively parsimonious and avoid overfitting.

23. The addition of a regional wages variable is unlikely to lead to multicollinearity in the models. The correlation between the logarithmic form of the regional wages variable and the three density variables in the Ofwat specification is between 0.57-0.63, which we consider to be reasonably low.

B. Management control

24. The enduring gap between the wages in SES Water's and other companies' supply areas, as seen in Figure 2 above, speaks to the structural differences in labour markets which are outside of companies' control to manage.

25. We note the possibility of hiring our employees or suppliers from other regions or fully outsourcing operations, but as discussed above, this is not possible for a material proportion of our activities. For many activities, our workers need to be located near the assets they maintain to be ready to respond in a timely fashion to issues that arise. This necessitates the hiring of local staff. For other roles, where there is greater scope for remote working, or where prevailing wage rates are dictated through the national labour market rather than local labour market, there is more potential for management to mitigate the effect of higher regional wage rates.

C. Calculation of required adjustment

26. We have calculated our required adjustment as follows:

    (a) To estimate our gross claim, we have calculated the allowance for SES Water over AMP8 when using a variant of Ofwat's published wholesale base cost models.

    Specifically, we include a regional wage variable in all Wholesale Water base cost models, including the TWD bottom-up models, the top-down wholesale water (WW) and bottom-up WRP models.[4]

4 Ofwat, *PR24 – Cost assessment datasets and guidance.* Available on Ofwat website.

(b) Our calculation of the implicit allowance for SES Water then uses the unchanged Ofwat base cost models (i.e. without the regional wage variable).

(c) Further details of the model specification, the construction of the regional wage variable and the model results are provided in Section 3 and in the annex.

27. In Table 1 below, we show the size of our cost adjustment claim and outline the main steps taken to calculate the adjustment.

Table 1: Calculation of cost adjustment claim over AMP8 (£m, 2022-23 prices)

	2025/26	2026/27	2027/28	2028/29	2029/30	Total
Gross claim – Models with regional wage variable						
Modelled costs	42.3	42.6	42.9	43.2	43.5	**214.4**
Catch-up adjustment			96.3%			
UQ efficient costs (a)	40.7	41.0	41.3	41.6	41.8	**206.4**
Implicit allowance – Models without regional wage variable						
Modelled costs	38.1	38.4	38.7	38.9	39.2	**193.3**
Catch-up adjustment			103.8%			
UQ efficient costs (b)	39.5	39.8	40.1	40.4	40.8	**200.7**
Net claim (a) - (b)	**1.2**	**1.2**	**1.1**	**1.1**	**1.2**	**5.7**

Source: SES Water analysis

D. Materiality

28. Our claim amounts to 1.9% of forecast water network plus totex during AMP8. As this is above the 1% materiality threshold, we consider our cost adjustment claim passes Ofwat's materiality criterion.

E. Symmetrical cost adjustment

29. We consider this claim is likely to be symmetric. We have not estimated symmetrical adjustments for other water companies, as these would depend on each company's forecast for cost drivers over PR24.

3. Cost efficiency

In this section we set out in further detail the basis on which we have calculated our proposed regional wage adjustment claim.

We set out the approach that we have taken to construct the regional wage index we use as a variable within Ofwat' base cost models and provide further detail on how we have calculated the proposed cost adjustment claim.

A. Calculation and supporting evidence

Constructing the regional wages variable

30. We begin with calculating average regional wages for the areas served by all the water companies in England and Wales. We use ASHE gross weekly wage rates as published by ONS. Our rationale for using gross weekly wage rates is that it takes into account differences in working hours across different regions.
31. The ASHE wage data from ONS is disaggregated by local authorities, and so the first step in our analysis was to map the local authorities that are located in each water companies service area. To map each local authority in England and Wales onto water companies service areas we used the allocation factors published by Ofwat.[5] Sometimes local authorities are served by more than one water company, which is reflected in the allocation factors. We also accounted for the merging of local authorities over time.
32. Many water company service areas contain multiple local authorities. To reflect the relative importance of the local authorities to a water company, we use population data to calculate local authority weights for each water company.
33. By applying the water company-specific local authority weights to wage data, we calculate weighted average wages for each company in each year. For this, we used data from Table 8.1 in the ASHE dataset for the period 2011/12 to 2021/22.[6]
34. Figure 1 in Section 2 above depicts the average the regional weighted average wage between 2011/12 and 2021/22 for each water company.

Including regional wages in Ofwat's base cost models

35. Our proposed regional wages variable is the weighted average wage rate for each water company across the time period in question. The variable reflects regional wage differences between companies calculated at a local authority level. We have used the weighted average gross weekly wage directly as a cost driver, rather than in index form or as a relative wage metric. This means that the models account for not just the impact of regional wage differences between companies, but the impact of wages on costs more generally.

5 These are published as part of the data set that Ofwat published alongside the base cost models it consulted on for PR24. The data set is available here: https://www.ofwat.gov.uk/regulated-companies/price-review/2024-price-review/data-tables-and-models/econometric-base-cost-models-for-pr24/

6 ONS, *Earnings and hours worked, place of residence by local authority: ASHE Table 8*. Available on ONS website.

36. We consider there is a strong argument for taking such an approach. Including direct representation for wages ensures consistency between Ofwat's treatment of labour-related real price effects on a forward-looking basis (where wage growth is accounted for), and its treatment of wage growth on a backward-looking basis for the purposes of efficiency benchmarking.

37. In the models, we have captured the regional wage variable in logarithmic form, in all of Ofwat's Wholesale Water base costs models, including the bottom-up TWD and WRP models, the top-down WW models.

38. The full model results are presented in the annex. While the coefficients are not significant in all of the models, the signs of the coefficients are significant and the model performance is generally improved by the inclusion of the variable.

Calculating the cost adjustment claim

39. Our calculation of the cost adjustment claim is based on the following approach:

    (a) We re-estimated the base cost models to obtain model coefficients where each model specification contains the proposed regional wages variable in addition to the variables specified by Ofwat in its published base cost models.

    (b) The model coefficients were then multiplied with the corresponding forecast of explanatory variables. Our forecast of the explanatory variables over the period of PR24 was specific to SES Water.

    (c) We reversed the logarithmic transformation to obtain the model predicted costs.

    (d) We averaged the predicted costs over all models to derive a single modelled cost estimate for each year when the regional wage rate variable is included in the base cost models.

    (e) We repeated the above steps from (a) to (d) for the original Ofwat base cost model specifications, i.e., without the regional wage variable, to be able to calculate the difference in predicted costs.

    (f) To align our analysis with that of Ofwat, we uplifted the results from the modelling to be in a 2022/23 price base.

40. We also replicated the analysis for the period of 2017/18 – 2021/22, which follows the same approach but without the need to forecast the explanatory variables. The results for this historical period are shown in Table 2 with a £6.01m higher predicted cost from the model specification including the regional wage variable, after adjusting for catch-up efficiency for the period 2017/18 to 201/22 (the last year in Ofwat's base cost model dataset).

Table 2: Calculation of size of the adjustment over 2017/18-2021/22 (£m, 2022/23 prices)

	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Predicted modelled cost – Models with regional wage variable						
Modelled costs	41.4	41.2	39.8	42.1	41.9	**206.39**
Catch-up adjustment			96.3%			
UQ efficient costs (a)	39.8	39.6	38.3	40.6	40.4	**198.68**
Predicted modelled cost – Models without regional wage variable						
Modelled costs	36.62	36.76	37.21	37.29	37.68	**185.56**
Catch-up adjustment			103.8%			

	2017/18	2018/19	2019/20	2020/21	2021/22	Total
UQ efficient costs (b)	38.02	38.17	38.64	38.72	39.12	**192.67**
Net claim (a) - (b)	**1.78**	**1.43**	**-0.34**	**1.88**	**1.28**	**6.01**

Source: SES Water analysis

41. We have taken a cautious approach to forecasting the explanatory variables, including an assumption of constant real wages. This is reflected in the lower required adjustment in PR24 compared to modelled gap in the 2017/18-2021/22 estimation.

42. More information on our assumptions to forecasting the explanatory variables can be found in the annex.

B. Ensuring the efficiency of our cost adjustment claim

43. We have taken the following steps to ensure the efficiency of our cost adjustment claim:

    (a) **Adopting a benchmarking approach to estimating the size of the claim.** We use Ofwat's base cost models as the basis for our claim rather than developing a bespoke model, and instead of undertaking a company-specific empirical exercise. This means that the size of our claim is restricted to what can be determined through industry-wide data rather than SES Water specific data.

    (b) **Limiting our claim to the wholesale business.** We have limited the extent of our claim to the parts of our business that we consider most affected by higher prevailing regional wages. While a large proportion of our retail costs also relate to the wages we pay our staff, we are challenging ourselves to manage our exposure to higher regional wages rather than submitting a separate claim.

    (c) **Taking a conservative approach to forecasting our cost drivers.** Real wages have fallen in our water supply area (as shown in Figure 2 earlier). Rather than assuming a recovery in wages, we assume wages will stay at their 2021/22 level, and have fallen relative to the median water company. We assume wages will stay at their 2021/22 level rather than assuming rates will recover back to their historic levels (or beyond).

44. As a top-down sense check of the size of our claim, we compare it against the symmetric adjustment proposed for SES Water by Affinity Water in its regional wage claim. As the proposed symmetric adjustment over AMP8 is £11.8m (in 2022/23 prices) before the application of catch-up efficiency, we consider this compares favourably to our net claim of £6.0m.

4. Customer protection

45. To ensure that customers are protected, we have minimised the size of our claim to what we consider to be the absolute minimum. As our claim largely relates to the wages that we (and our suppliers) pay engineering staff, we consider this claim is linked to a large proportion of our Performance Commitments (PCs).

46. In particular, failure to attract key staff to operate, maintain and replace our assets will risk our ability to deliver on a number of our PCs, including:

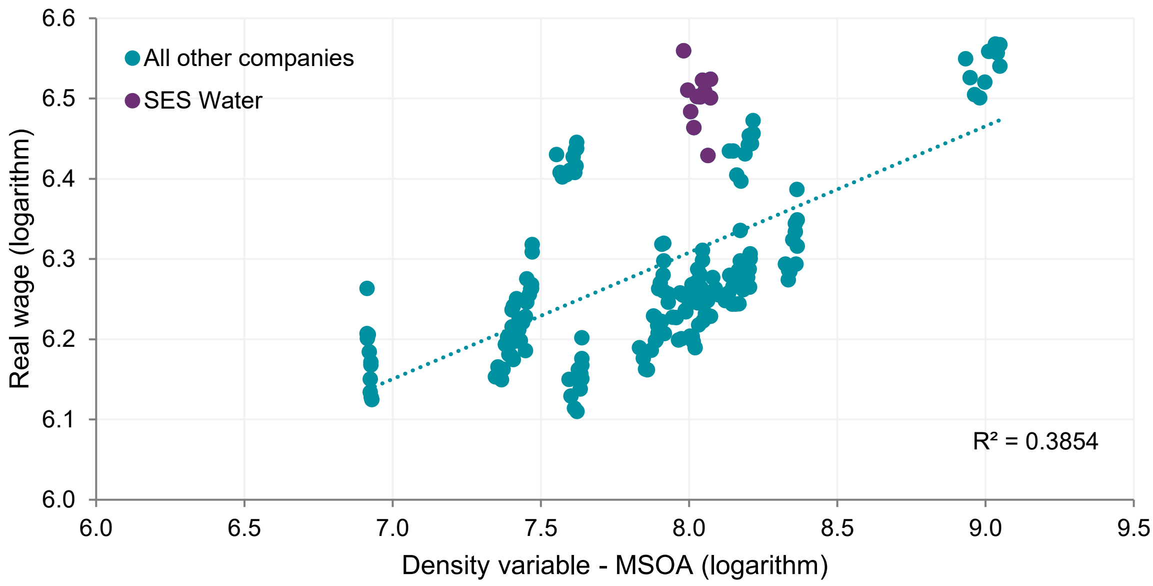
    (a) Leakage;
    (b) Water supply interruptions;
    (c) Mains repairs;
    (d) Unplanned outages; and
    (e) Compliance risk index.

Annex: Further evidence in support of cost adjustment claim

A. Supporting evidence of claims made in this submission

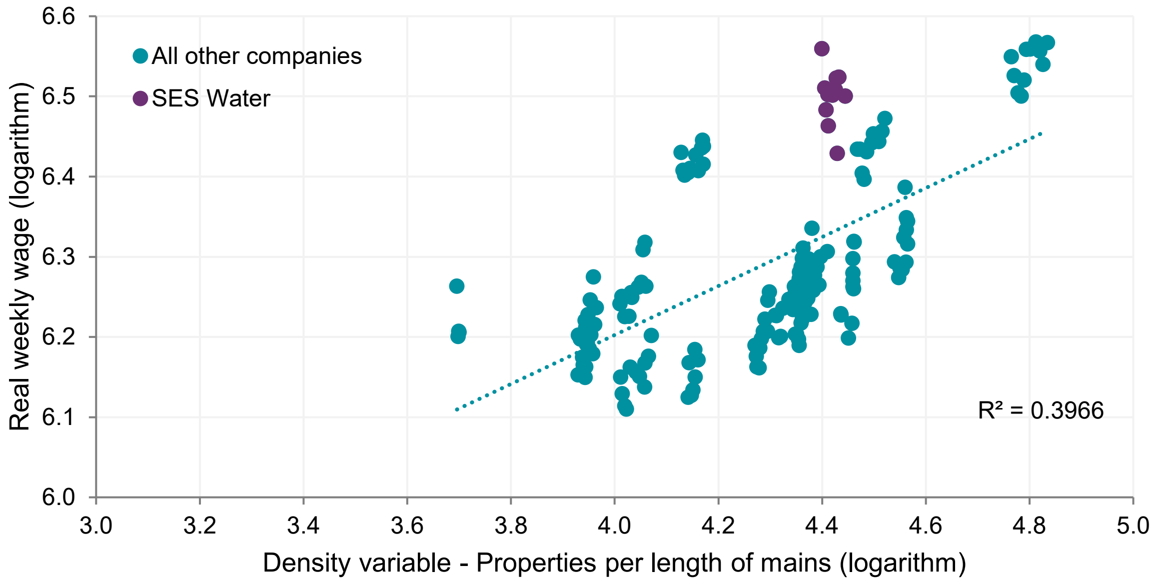
47. In Figure 4 we show the correlation between the regional wage in different water companies' supply areas and the MSOA density variable in Ofwat's base cost models. In Figure 5, we show the correlation between regional wages and the number of properties per km of mains.

Figure 4: Correlation between the regional wages variable and the density variable based on MSOA data



Source: SES Water analysis

Figure 5: Correlation between the regional wages variable and the density variable based on properties per length of mains



Source: SES Water analysis

48. We can see from both charts that while there is some correlation between the density variables in Ofwat's models and prevailing regional wages, they are not strongly correlated. We can also see that, for each of the density variables, SES Water's position sits above the line of best fit. In other words, the higher-than-average prevailing regional wage in SES' water supply area is not fully captured by the density variables.

Table 3: Correlation matrix for the regional wages variable and the density variables

Correlation matrix	Real weekly wage	Density variable (MSOA to Local Authority District)	Density variable (MSOA)	Density variable (Properties per length of main)
Real weekly wage	1.00	-	-	-
Density variable (MSOA to Local Authority District)	0.57	1.00	-	-
Density variable (MSOA)	0.62	0.96	1.00	-
Density variable (Properties per length of main)	0.63	0.91	0.92	1.00

Source: SES Water Analysis
Notes: All of the correlations are calculated using the logarithmic form of the variables. Real wage is the regional wages variable. MSOA to LAD population is the weighted average density variable using MSOA level data mapped to local authority districts. MSOA population directly maps MSOA data to water company areas.[7]

7 Ofwat (2023), *Econometric base cost models for PR24*. Available on Ofwat website.

B. Forecast of cost drivers

49. To calculate our claim, we make the following assumptions around how each of the cost drivers are expected to grow:

- **Connected properties**: We extrapolate based on the compound annual growth rate (CAGR) between 2011/12 and 2022/23, at 0.67% growth per annum.
- **Length of mains**: We extrapolate based on the compound annual growth rate (CAGR) between 2011/12 and 2022/23, at 0.22% growth per annum.
- **Booster pumping stations per length of mains**: We assume the number of booster pumping stations per length of mains, when averaged across the industry, remains constant at the 2021/22 value.
- **SES' APH**: We assume APH for each of the price controls will be the same as in 2022/23 for the whole forecast period.
- **Distribution input**: We extrapolate based on the compound annual growth rate (CAGR) between 2011/12 and 2022/23, at 0.40% growth per annum.
- **Weighted average density - MSOA population data mapped to Local Authority Districts**: We extrapolate based on the compound annual growth rate (CAGR) between 2011/12 and 2022/23, at 0.76% growth per annum.
- **Weighted average density - MSOA population data mapped directly to water company service areas:** We extrapolate based on the compound annual growth rate (CAGR) between 2011/12 and 2022/23, at 0.92% growth per annum.
- **Regional wages**: We assume that regional wages remain constant at the 2021/22 value.

C. Regression results including regional wage variable

	WRP1	WRP2	WRP3	WRP4	WRP5	WRP6
Connected properties (log)	1.083***	1.083***	1.035***	1.038***	1.017***	1.017***
	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}
Water treated at complexity levels 3 to 6 (%)	0.004***		0.004***		0.005***	
	{0.009}		{0.005}		{0.002}	
Weighted average density - LAD from MSOA (log)	-1.406**	-1.360*				
	{0.038}	{0.066}				
Weighted average density - LAD from MSOA (log) squared	0.085*	0.081				
	{0.073}	{0.108}				
Weighted regional wage (log)	0.348	0.338	0.119	0.08	0.272	0.228
	{0.622}	{0.621}	{0.851}	{0.895}	{0.639}	{0.688}
Weighted average treatment complexity (log)		0.288		0.302		0.33
		{0.256}		{0.202}		{0.159}
Weighted average density – MSOA (log)			-4.391**	-4.443**		
			{0.021}	{0.034}		
Weighted average density – MSOA (log) squared			0.265**	0.267**		
			{0.026}	{0.041}		
Properties per length of mains (log)					-6.238*	-6.004
					{0.086}	{0.117}
Properties per length of mains (log) squared					0.669	0.637
					{0.126}	{0.166}
Length of mains (log)						
Booster pumping stations per length of mains (log)						
Average pumping head TWD (log)						
Constant	-7.918	-8.058	6.582	6.985	2.194	1.939
	{0.165}	{0.145}	{0.501}	{0.503}	{0.818}	{0.846}
R_squared	0.908	0.9	0.905	0.9	0.914	0.909
RESET_P_value	0.503	0.448	0.658	0.628	0.207	0.133

	TWD1	TWD2	TWD3	TWD4	TWD5	TWD6
Connected properties (log)						
Water treated at complexity levels 3 to 6 (%)						
Weighted average density - LAD from MSOA (log)	-1.991***			-2.529***		
	{0.000}			{0.000}		
Weighted average density - LAD from MSOA (log) squared	0.159***			0.191***		
	{0.000}			{0.000}		
Weighted regional wage (log)	1.194***	0.979**	0.835**	0.879*	0.830*	0.716
	{0.002}	{0.015}	{0.038}	{0.097}	{0.093}	{0.159}
Weighted average treatment complexity (log)						
Weighted average density – MSOA (log)		-4.297***			-6.011***	
		{0.000}			{0.000}	
Weighted average density – MSOA (log) squared		0.302***			0.404***	
		{0.000}			{0.000}	
Properties per length of mains (log)			-11.406***			-14.065***
			{0.000}			{0.000}
Properties per length of mains (log) squared			1.449***			1.736***
			{0.000}			{0.000}
Length of mains (log)	1.082***	1.025***	1.049***	1.073***	1.033***	1.043***
	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}
Booster pumping stations per length of mains (log)	0.518***	0.395***	0.397***			
	{0.000}	{0.000}	{0.003}			
Average pumping head TWD (log)				0.315***	0.343***	0.301***
				{0.000}	{0.000}	{0.000}
Constant	-5.412**	5.035	12.864**	-4.704	9.909	16.798*
	{0.045}	{0.293}	{0.028}	{0.310}	{0.195}	{0.053}
R_squared	0.968	0.965	0.967	0.964	0.967	0.967
RESET_P_value	0.036	0.017	0.141	0.636	0.712	0.907

	WW1	WW2	WW3	WW4	WW5	WW6
Connected properties (log)	1.082***	1.073***	1.033***	1.030***	1.026***	1.022***
	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}
Water treated at complexity levels 3 to 6 (%)	0.003**		0.002**		0.003***	
	{0.014}		{0.028}		{0.006}	
Weighted average density - LAD from MSOA (log)	-1.390***	-1.289***				
	{0.001}	{0.002}				
Weighted average density - LAD from MSOA (log) squared	0.094***	0.087***				
	{0.001}	{0.003}				
Weighted regional wage (log)	0.803*	0.719*	0.569	0.481	0.634*	0.548*
	{0.055}	{0.068}	{0.155}	{0.185}	{0.072}	{0.071}
Weighted average treatment complexity (log)		0.274**		0.264**		0.308**
		{0.041}		{0.037}		{0.011}
Weighted average density – MSOA (log)			-3.818***	-3.599***		
			{0.003}	{0.007}		
Weighted average density – MSOA (log) squared			0.240***	0.225***		
			{0.003}	{0.006}		
Properties per length of mains (log)					-8.584***	-8.055***
					{0.001}	{0.001}
Properties per length of mains (log) squared					0.980***	0.914***
					{0.001}	{0.002}
Length of mains (log)						
Booster pumping stations per length of mains (log)	0.500***	0.486***	0.409***	0.394***	0.307**	0.289**
	{0.000}	{0.000}	{0.002}	{0.001}	{0.022}	{0.015}
Average pumping head TWD (log)						
Constant	-8.248***	-8.209***	3.64	3.161	6.447	5.671
	{0.010}	{0.007}	{0.534}	{0.597}	{0.269}	{0.303}
R_squared	0.969	0.97	0.967	0.968	0.969	0.971
RESET_P_value	0.079	0.034	0.047	0.011	0.017	0.003

	WW7	WW8	WW9	WW10	WW11	WW12
Connected properties (log)	1.075***	1.069***	1.042***	1.040***	1.022***	1.020***
	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}
Water treated at complexity levels 3 to 6 (%)	0.002		0.002		0.002*	
	{0.111}		{0.202}		{0.061}	
Weighted average density - LAD from MSOA (log)	-1.905***	-1.838***				
	{0.000}	{0.000}				
Weighted average density - LAD from MSOA (log) squared	0.124***	0.120***				
	{0.000}	{0.000}				
Weighted regional wage (log)	0.588	0.505	0.506	0.424	0.572	0.477
	{0.220}	{0.273}	{0.218}	{0.266}	{0.144}	{0.173}
Weighted average treatment complexity (log)		0.217		0.189		0.244*
		{0.171}		{0.187}		{0.071}
Weighted average density – MSOA (log)			-5.624***	-5.516***		
			{0.000}	{0.000}		
Weighted average density – MSOA (log) squared			0.346***	0.339***		
			{0.000}	{0.000}		
Properties per length of mains (log)					-10.678***	-10.392***
					{0.000}	{0.000}
Properties per length of mains (log) squared					1.208***	1.173***
					{0.000}	{0.000}
Length of mains (log)						
Booster pumping stations per length of mains (log)						
Average pumping head TWD (log)	0.325***	0.321***	0.329***	0.325***	0.255**	0.241*
	{0.002}	{0.002}	{0.004}	{0.005}	{0.046}	{0.063}
Constant	-8.155*	-7.936**	8.421	8.416	9.324*	9.241*
	{0.055}	{0.048}	{0.211}	{0.204}	{0.094}	{0.058}
R_squared	0.964	0.964	0.962	0.963	0.966	0.968
RESET_P_value	0.841	0.783	0.943	0.927	0.517	0.376