IAP Response

Ref B2.4.WSH.OC

Outcome Delivery Incentives IAP Response

1 April 2019

Contents

1. Introduction

Ofwat have provided detailed feedback on our ODI package in their report "Dŵr Cymru: Delivering outcomes for customers detail actions". We have carefully considered Ofwat's actions and this document sets out our response. It also addresses the feedback provided by Ofwat in their "Technical Appendix 1: Delivering outcomes for customers" document.

We firstly provide an overview of our approach to responding to these actions. The document then provides further details on the actions required for each specific ODI. In light of additional information from companies' Business Plans and Ofwat's feedback in the IAP we have revised several of our ODI rates, deadbands, caps and collars. Tables 1 and 2 provide a summary of the changes.

Table (1)- Summary of changes to ODI rates

	Underperformance Rate (£m per Unit)		Underperformance Rate (£m per Unit)	
	September Business Plan	IAP Response	September Business Plan	IAP Response
Water Supply Interruptions	(0.6)	(0.3)	1.3	0.2
Pollution Incidents from Wastewater	(0.5)	(0.2)	0.6	0.2
Sewer flooding on customer property (internal)	(10.3)	(1.8)	10.7	0.3
Sewer flooding on customer property (external)	(0.3)	(0.2)	0.3	0.2
Leakage	(1.0)	(0.2)	1.3	0.1
Customer Trust	(12.8)	(6.4)	25.6	12.8

Table (2)- Summary of changes to Deadbands, Caps and Collars

	Element	September Business Plan	IAP Response
Water and Wastewater Treatment works compliance	Deadband	97%	99%
Compliance Risk Index	Underperformance Collar	12	9
Business Customer Satisfaction	Outperformance Cap	4.7	4.6
Business Customer Satisfaction	Outperformance Deadband	4.5	4.4

2. Summary of our approach

2.1. Overview

Ofwat's feedback on our ODI package consists of five key areas:

1. the application of financial incentives to several measures,
2. the application of non-financial incentives to several measures,
3. the magnitude of several of our ODI rates,
4. the appropriateness of our P10 and P90 values and
5. our use of caps and collars.

This section provides an overview of Ofwat's feedback and how we have addressed the actions.

1. Ofwat have asked us to provide further evidence on customers' preferences for financial incentives on a number of our ODIs. Our original approach was to apply financial incentives to all measures by default. We did not apply financial incentives for those measures that a) have an inherent 'built-in' financial incentive, b) are a supporting measure, or c) are a new (and hence uncertain) measure. We are now undertaking further customer research to test customer support (or otherwise) for financial incentives for those measures subject to this challenge from Ofwat. When the results of the research are available we will update our ODI package if required. We plan to submit the results and the final ODI package to Ofwat by 30th April.
2. Ofwat have used us to provide further evidence to justify the use of non-financial incentives on three of our measures. Section 31 outlines our justification of the use of non-financial incentives. We are now undertaking further customer research to test customer support (or otherwise) for non-financial incentives for those measures subject to this challenge from Ofwat. When the results of the research are available we will update our ODI package if required. We plan to submit the results and the final ODI package to Ofwat by 30th April.
3. Ofwat note that several of our ODI incentives are high relative to industry comparators. Ofwat have asked for us to provide further evidence from our own customer base or wider studies to demonstrate that our ODI incentive rates are reflective of customer valuations. We have outlined our approach in section 2.2. For those measures where we have new industry data and Willingness to Pay data is available we have updated our rates to reflect this new information.
4. Our approach to customer protection in our September Business Plan was to include caps and collars for each ODI at the P10 and P90 level of performance. Ofwat have asked for us to review our P10 and P90 estimates for individual ODIs to ensure that they are robust and are a fair reflection of extreme performance outcomes. We have reviewed our approach for determining the P10 and P90 and have made changes where appropriate. Further information is provided on the specific ODI feedback in sections 5 to 30.

5. Ofwat have asked us to

   - provide ODI-specific evidence to support our use of caps and/or collars on particular ODIs, whilst considering how the use of these features aligns with our broader approach to customer protection;
   - reconsider our widespread application of caps and collars and note that we should consider applying these features more selectively; and
   - provide evidence for the levels at which all of its caps and collars are set and explain why these levels are appropriate and in customers' interests.

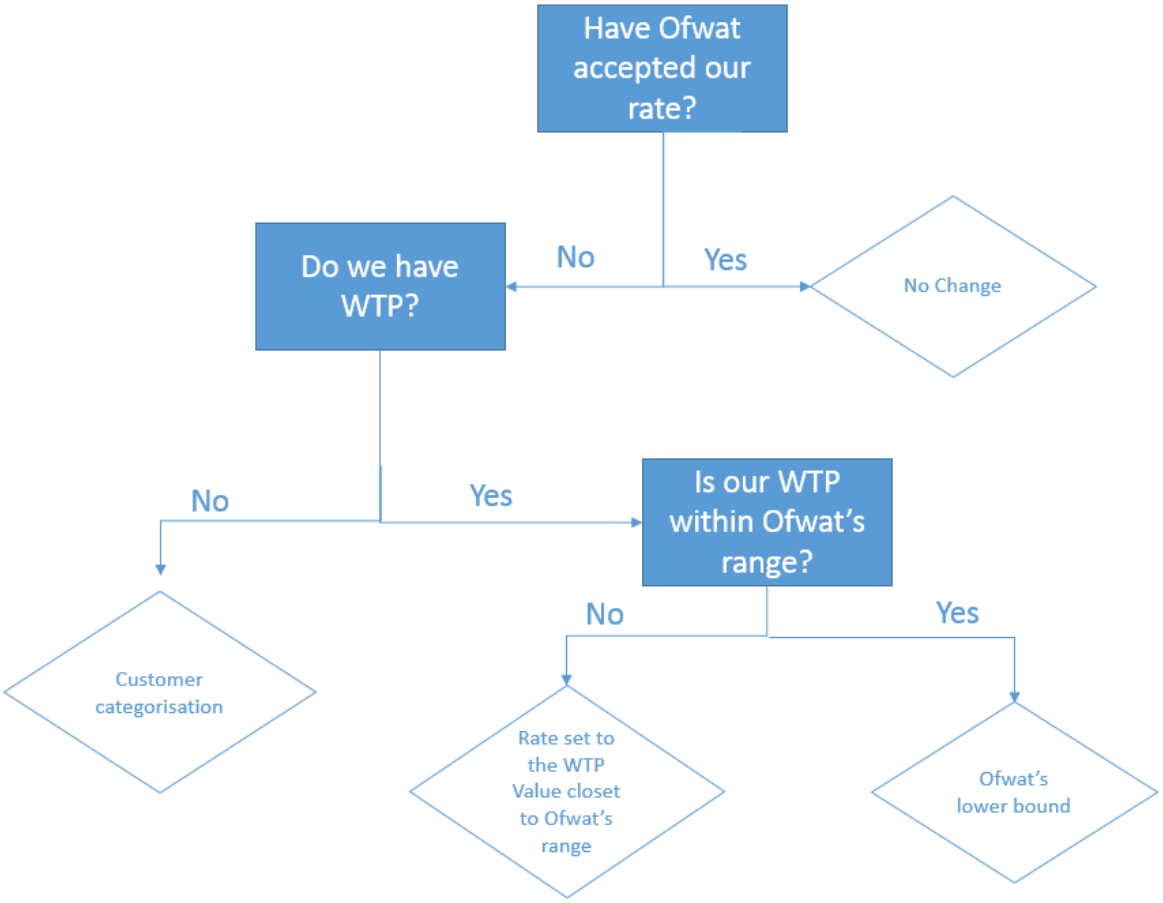
Our approach to caps and collars is outlined in section 2.3. We have reviewed the appropriateness of caps and collars in light of the financial risk (both upside and downside) associated with each of the ODIs, the level of uncertainty/volatility around each, and the comparability (or lack thereof) of each measure with other companies' measures. Following this review, we have decided to retained caps and collars on all of our ODIs. This is in line with the results of our original qualitative customer research. However we are undertaking further quantitative customer research to confirm if this approach still has customers' support.

2.2. ODI rates

Ofwat have reviewed the ODI rates submitted in companies' plans and have outlined their reasonable ODI rates for common and comparable PCs in 'Technical Appendix 1: Delivering outcomes for customers'. Ofwat highlight that for several of our measures, our ODI rates are outside of this 'reasonable range'.

While the variation in ODI rates across the industry may partly reflect genuine differences in customer valuations, some of the differences will also be explained by 'measurement error', or differences in the detailed methodology of the research. We therefore think it is valid to 'cross-check' our customer valuations with the industry range for ODIs, information for which is now available. On the assumption that other companies' ODI rates are determined from stated preference from their customers, these ODI rate ranges provided by Ofwat represent new customer data (albeit not Welsh Water customers), and should be taken into account in setting our ODI rates. Where our ODI rates are outside the industry 'reasonable range', we have therefore adjusted them to be within this range, taking into account also the wider views of our customers.

The 'Decision Tree' below outlines our approach to revising ODI rates on this basis, taking into the availability of the new cross-industry information and feedback from the IAP. We have followed this decision tree for those measures on which Ofwat has questioned the chosen ODI rate. For those measures for which Ofwat have not set out any IAP Actions, we have currently kept these unchanged.



Background on Willingness to Pay Range

As part of our original customer research programme, we ran a Willingness to Pay research project, the results of which were used both for the cost-benefit analysis for the purposes of target-setting, and for setting ODI rates. The nature of the Willingness to Pay methodology is such that it can only legitimately be applied to a limited range of measures, essentially those which customers can reasonably assign a 'value' for the impact of the improvement or deterioration in service level to them personally. For those measures for which we had Willingness to Pay results, we also had an alternative value, derived from a different, less statistically robust but more intuitive methodology around performance service levels.

These two values, where available, were triangulated to generate a Willingness to Pay 'range', as explained in our original Business Plan documentation. This range represents the range of values that could be considered to be consistent with our customer's valuations.

Measures with Willingness to Pay

For those PCs for which Ofwat have questioned our ODI rate and for which we have Willingness to Pay data, we have reviewed our ODI rates in-light of the new industry data. If our proposed ODI rate is outside of Ofwat's 'reasonable range' we have chosen to set a revised ODI rate at the value in our Willingness to Pay range closest to the lower bound of Ofwat's 'reasonable range'.

Our customer research at both PR14 and PR19 indicated that customers in general were sceptical of the concept of rewards and penalties, particularly given our not-for-profit model. These concerns were partly allayed when it was explained that the likely impact on their bills would be minimal. We draw the conclusion that lower ODI rates, other things being equal, are in general more consistent with our customers' views than higher rates, generally speaking. Our proposal to adjust our ODI rates at the lower bound of Ofwat's 'reasonable range' therefore aligns with our customers' views.

Measures without Willingness to Pay

For those measures queried by Ofwat where we do not have Willingness to Pay data, the ODI rate has been determined by reflecting the level of importance that customers place on the measures, as set out in our original ODI document 'Ref 5.5-PR19 Outcome Delivery Incentives'.

Deriving customer views that can be directly applied to the setting of ODI rates, especially in the absence of Willingness to Pay data, is a complex and inherently imperfect exercise. We stand by our original methodology as a reasonable approach to have taken, but we acknowledge that further customer research would yield additional information that could be used to test customer support for ODIs in setting the relative ODI rates. In considering how to approach such research, we have examined the research methodologies employed by other companies during the preparation of their ODI schemes, and in particular those companies that were praised by Ofwat for their customer research (notably Anglian and South West). We are now implementing a new piece of customer research that draws heavily in its design on the ODI research conducted by these companies.

When the results of this supplementary research are available, we may choose to alter the rates for the measures in this category. We aim to submit the results and our final set of ODI proposals to Ofwat by 30th April.

2.3. Customer Protection and Caps and collars

Our approach to customer protection on financial incentives for ODIs in September was to include caps and collars on all measures at the P10 and P90 value. This was to ensure that customers did not incur either underperformance or outperformance payments beyond a given range. The caps and collars were set at the P10 and P90 performance levels. The removal of caps and collars would increase the risk of companies facing inappropriately high financial benefits, or inappropriately high financial penalties, resulting from performance levels at an extreme beyond that which could possibly be determined by good or bad operational performance alone. Performance at these levels would much more likely be caused by either very benign or extremely difficult operating conditions. Should performance fall below this extreme level, the negative reputational impact on the company would in any case likely outweigh the effect of any additional financial penalties applied.

Ofwat's Technical Appendix 1: Delivering outcomes from customers, outlines several potential customer protection approaches to ensure customers are protected against significant outperformance payments. We recognise the importance of customer protections and we have also extended these protections to underperformance payments to ensure that

our approach is symmetrical. Our original ODI customer research indicated that customers support caps and collars to protect against large bill increases (on the outperformance side) and a reduction in revenue for future investment (on the underperformance side).

In addition, Ofwat requires companies to share with customers, through bill reductions, 50% of their incremental outperformance payments once the outperformance payments in any year reach 3% of their wastewater or water RoRE for that year.

In considering the appropriate design of customer protection measures in relation to ODIs, our non-shareholder model and our WaterShare mechanism should be taken into account. WaterShare means that 50% of any net outperformance payments are returned directly to customers through lower bills. The other 50% will be set aside in a WaterShare fund which is reinvested to improve performance, the environment, or resilience, or to benefit communities. Further information can be found in section 6.2.2. of our "Ref 5.5 - PR19 Outcome Delivery Incentives" PR19 Business Plan document.

Ofwat also specifically requires companies to place caps and collars on potentially 'financially significant' performance commitments. Companies are expected to put caps and collars at their P10/P90 performance levels (on an annual basis) where ODIs make up a significant proportion of the overall financial incentives, or where the level of the financial incentives is particularly subject to uncertainty. We consider both of these in turn:

Proportion of overall financial Incentives

Ofwat outlines that caps and collars should be included for those measures where the P90 'reward' value is forecast to be at least 10% of the total P90 level of rewards for either wastewater (wastewater network plus activities and bioresources) or water (water network plus activities and water resources). Table 3 reports the level of rewards and penalties for each measure attributed to Water and Wastewater Network+. The table highlights those measures that make up a significant proportion of our ODI package for Water and Wastewater Network+. Ten of our measures exceed the 10% threshold. Another measure (Pollution incidents) is also close to exceeding the threshold (9%).

Table 3- Financial Significance of ODIs

	Underperformance Financial Incentives		Outperformance Financial Incentives	
	Percentage of Total Water Network+ Incentives	Percentage of Total Wastewater Network+ Incentives	Percentage of Total Water Network+ Incentives	Percentage of Total Wastewater Network+ Incentives
Customer Trust	5%	7%	5%	7%
Tap Water Quality Compliance Risk Index	15%	0%	0%	0%
Water Supply Interruptions	11%	0%	4%	0%
Leakage	3%	0%	2%	0%
Sewer Flooding on Customer Property (Internal)	0%	3%	0%	1%
Pollution Incidents from Wastewater	0%	9%	0%	8%
Acceptability of Drinking Water	11%	0%	11%	0%
Km of River Improved	0%	11%	0%	11%
Total Complaints	4%	6%	4%	6%
Asset Resilience (Reservoirs)	11%	0%	11%	0%
Asset Resilience (Water Network+ Above Ground)	11%	0%	11%	0%
Asset Resilience (Water Network+ Below Ground)	11%	0%	11%	0%
Asset Resilience (Waste Network+ Above Ground)	0%	11%	0%	11%
Asset Resilience (Waste Network+ Below Ground)	0%	11%	0%	11%
Water Mains Burst	6%	0%	0%	0%
Sewer Collapses	0%	6%	0%	0%
Water and Wastewater Treatment Works Compliance	0%	11%	0%	0%
Sewer Flooding on Customer Property (External)	0%	4%	0%	4%
Business Customer Satisfaction	0%	0%	0%	0%
Visitors to Recreational Facilities	6%	0%	6%	0%
Community Education	2%	3%	2%	3%
Surface Water Removed from Sewers	0%	6%	0%	6%
Bioresources Product Quality	0%	6%	0%	6%
Bioresources Disposal Compliance	0%	6%	0%	0%
Lead Supply Pipes Replaced	6%	0%	6%	0%

Uncertainty

Ofwat notes that caps and collars should be applied for those measures where there is considerable uncertainty. Ofwat suggests that this depends on:

- The potential for outperformance beyond the P90 performance level.
- The level of certainty associated with the forecast future performance of the measure. Factors affecting this could include the availability of historical data for an ODI, or the existence of a robust baseline performance estimate; and
- The uniqueness of each company's ODIs, that is, the extent to which other companies have proposed similar ODIs that could be used as comparators.

We have examined each ODI against these three criteria, specifically:

1. Uncertainty due to factors beyond management control. This is most relevant to PCs that are impacted by extreme weather conditions.
2. Uncertainty due to a lack of historical and comparative data.
3. The extent to which other companies have proposed similar ODIs.

The table below shows the measures which meet the 'financially significant' criteria or one of the 'uncertainty' criteria for caps and collars. We provide further evidence on the categorisation of each ODI in their individual sections later on in this document. The table

shows that caps and collars are in fact justified on all of our ODIs according to Ofwat's criteria.

	Financially Significant	Uncertainty-Weather	Uncertainty-Lack of historical Data	Uncertainty - uniqueness
CRI	✓		✓	
Water supply interruptions	✓	✓		
Mains bursts		✓		
Acceptability of water	✓			
Internal sewer flooding		✓		
External sewer flooding		✓		
Treatment works compliance	✓	✓		
Wastewater treatment works compliance	✓	✓		
Bioresources disposal compliance				✓
Leakage		✓		
Pollution incidents cat 1-3 Wastewater per 10,000 km		✓		
Lead supply pipes replaced			✓	
Bioresources product quality				
Business customer satisfaction				✓
Total complaints		✓		
Surface water removed from sewers				✓
Asset resilience (reservoirs)	✓		✓	✓
Asset resilience (Water network+ above ground)	✓		✓	✓
Asset resilience (Water network+ below ground)	✓		✓	✓
Asset resilience (Wastewater network+ above ground)	✓		✓	✓
Asset resilience (Wastewater network+ below ground)	✓		✓	✓
Community education			✓	✓
Visitors to recreational facilities			✓	✓
Sewer collapses		✓		
Km of river improved	✓			
Customer trust				✓

2.4. **P10s and P90s**

Ofwat has asked us to review our P10 and P90 estimates for individual ODIs to ensure that they are robust and a fair reflection of extreme outcomes. The P10 and P90 are the levels of performance for which there is a 10% chance of the actual performance being above (P90) or below (P10) that level. As such, performance below the P10 level would be expected to occur once every ten years, and similarly for performance above the P90 level. We employed two approaches to determining the P10/P90 value for each measure as set out in our September Business Plan submission. Where

historical monthly data was available we estimated the probability distribution using 'bootstrapping'. Where there is a lack of monthly historical data, management judgement was used. We provide below a review of our P10 and P90 values for each measure. We were only able to find a limited number of companies' P10 and P90 values in their PR19 Business Plan submissions. We have compared our P10 and P90 values to those submitted by Anglian and South West, which were the only ones for which data was readily available. Following this review we have revised the P10 value for CRI. In all other cases, we believe our original P10 and P90 values are robust.

3. Asset Health ODI Package

Ofwat have asked us to provide sufficient evidence that our customers support our proposed asset health payments in action WSH.OC.A7. In our September Business Plan submission we categorised six measures as 'Asset Health' based on the long list included in Ofwat's Final Methodology Appendix 2- Outcomes. We have removed our performance commitment wastewater treatment works 'look-up table' compliance as we found there was a risk that customers were confused between this measure and Water and Wastewater Treatment Works Compliance. Three of the five ODIs only have underperformance payments. Acceptability of Water and External Sewer Flooding have ODI outperformance payments as well as underperformance payments. Whilst acceptability of water and external sewer flooding are categorised by Ofwat as an asset health measure, they are primarily considered as a service measure as it directly impacts customers. Acceptability of water and external sewer flooding were included within our Willingness to Pay customer research and the results demonstrate Willingness to Pay for significant improvements in these measures.

The table below provides a list of those measures that are considered as 'Asset health' and the P10 underperformance payments and P90 outperformance payments in £m and as a percentage of RoRE.

	Underperformance Payments over 5 years (£m)	Underperformance Payments (% of Regulatory Equity)	Outperformance payments over 5 years (£m)	Outperformance Payments (% of Regulatory Equity)
Acceptability of drinking water	13	0.11%	13	0.11%
Sewer Collapses	7	0.06%	-	-
Water and Wastewater Treatment Works Compliance	13	0.11%	-	-
Sewer Flooding on Customer Property (External)	5	0.04%	5	0.04%
Water Mains Burst	7	0.06%	-	-
Total	**45**	**0.37%**	**18**	**0.15%**

4. Customer Protection ODIs

We have a significant amount of investment planned on three major projects in our PR19 plan: reservoir safety, Cwm Taf strategy and Acceptability of Water. We have introduced customer protection ODIs for each of these investments. These ODIs will effectively return any of our PR19 allowance for these projects that is not spent by the 31st of March 2025 to customers. In effect we would be removing this expenditure from the totex sharing mechanism.

The tables below outline the ODIs for the investment cases. The ODI rate takes into account the interactions with the Totex Menu. If the actual level of expenditure is lower than the allowance, then one minus the outperformance rate will be returned to customers through the totex mechanism. Our ODI mechanism returns the remaining proportion. These measures are underperformance only ODIs and they are end of period ODIs.

	Reservoir Safety Enhancement Expenditure in AMP7
Allowance	£69.5m
Underperformance Financial Incentives	(Allowance- AMP7 Actual Expenditure)*Outperformance Sharing Rate
Timing	End of Period ODI

	Cwm Taf Enhancement Expenditure in AMP7
Allowance	£72.9m
Underperformance Financial Incentives	((Allowance- AMP7 Actual Expenditure)*Outperformance Sharing Rate
Timing	End of Period ODI

	Water Network Improvement Enhancement Expenditure in AMP7
Allowance	£90.7m
Underperformance Financial Incentives	((Allowance- AMP7 Actual Expenditure)*Outperformance Sharing Rate
Timing	End of Period ODI

5. Wt1- Tap Water Quality Compliance Risk index (CRI)

5.1. **Deadbands**

In our original PR19 submission we proposed a deadband equal to the 'upper third' level of actual performance of companies in the industry in a given year. This approach, we argue, is appropriate given the inherent volatility of individual companies' performance against the measure.

In its IAP publication, Ofwat has mandated a deadband of 1.50 for this measure, as the average of the observed upper quartile performance of companies in 2017-18, and the level of deadbands proposed by companies.

We do not accept that this approach strikes the appropriate balance between incentivising excellent performance on this measure while allowing for uncertainty around this new measure. We have therefore retained our original proposed deadband. Our arguments are set out in more detail in our document B2.1.WSH.OC Performance commitments IAP Response.

5.2. **P10/P90s and Collars**

Our September Business Plan proposed a P10 and collar level 12 points below the performance received by the top third of customers in England and Wales. CRI is a new measure and since then new industry data has become available. We have therefore revised our P10 and collar to a score of 9, which is consistent with the collar score accepted by Severn Trent as published in the IAP.

6. Wt2- Water Supply Interruptions

6.1. ODI Rates

As per the overall approach set out in Section 2, we have reviewed our ODI rates for water supply interruptions in light of the industry data in Ofwat's IAP Appendix 1: Delivering outcomes for customers. Accordingly we have now set our ODI rate at the lower bound of Ofwat's 'reasonable range', which is also within the range of ODI Willingness to Pay valuations derived from our customer research. The underperformance ODI rate has been revised to £0.31m per minute and the outperformance ODI rate has been revised to £0.24m per minute lost per property, as shown in the table below.

	Penalty Rate (£m per Unit)
WTP (Highest Value)	(1.37)
Ofwat Higher Bound	(1.02)
Ofwat Mean	(0.66)
Current	(0.57)
Ofwat Lower Bound	***(0.31)***
WTP (Lowest Value)	(0.16)

	Reward Rate (£m per unit)
WTP (Highest Value)	1.37
Current	1.27
Ofwat Higher Bound	0.70
Ofwat Mean	0.47
Ofwat Lower Bound	***0.24***
WTP (Lowest Value)	0.16

Calculation of the ODI rate

The calculation of our ODI rate for underperformance uses the formula outlined in Ofwat's final methodology. However, in choosing the lower bound underperformance rate, the outperformance payment using Ofwat's formula reported in App1a produces an outperformance rate higher than Ofwat's lower bound. Given customers views, we have set the outperformance rate at a lower value, in line with Ofwat's lower bound.

Response to 'Technical Appendix 1: Delivering outcomes for customers'

Increments tested with customers

We undertook two pieces of research to derive marginal benefits. The table below shows the range of performance values that were tested with customers, from 12 minutes lost per property down to 5 minutes lost. These levels of performance are consistent with our performance commitment target of 8 minutes per property by 2024/25.

Customer minutes lost (Minutes)	Status Quo	Status Quo+1	Status Quo+2
WTP	12	8	5
MOS	12.2	10	7

Calculation of the WTP values

The calculation of our WTP is outlined in '1.1A PR19 Customer Engagement Willingness to Pay' and our MOS research is outlined in '1.1F P19 Customer Engagement- Performance Targets quantitative research'. Within our WTP research we tested both increments and decrements with customers. The results indicated that customers were not willing, on average, to accept any service deterioration in exchange for bill reduction.

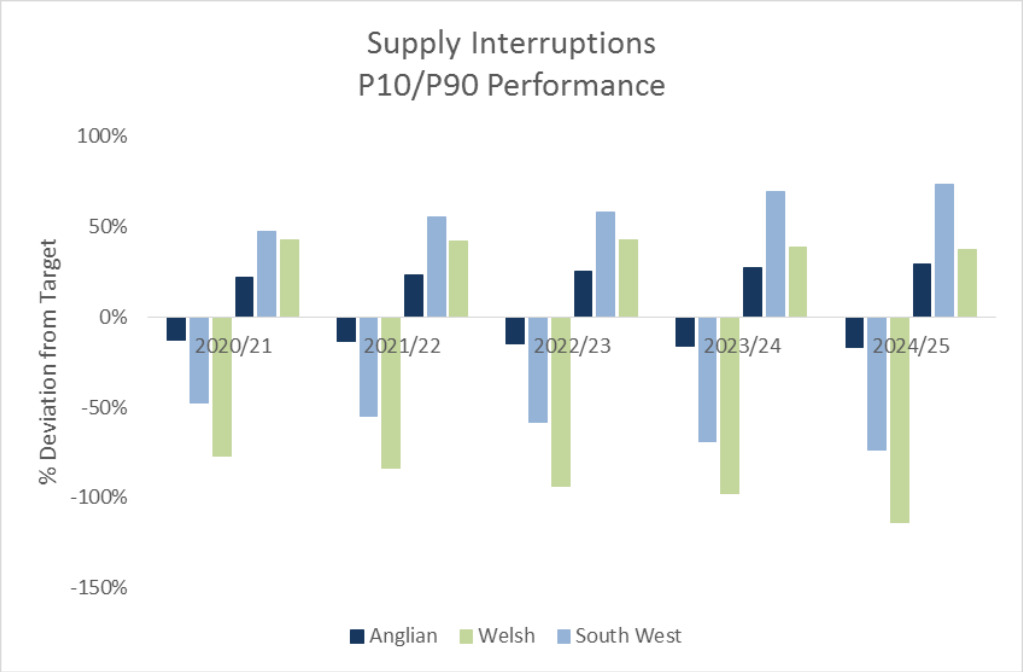
Scaling

No scaling has been applied.

6.2. P10/P90 levels

Following the feedback in the IAP, we have reviewed our P10 and P90 levels to ensure that they are robust and are a fair reflection of extreme outcomes. To determine the appropriate P10 and P90 performance we undertook 'bootstrapping' on monthly data.

As explained in Section 2 above, we have reviewed South West and Anglian's P10 and P90 performance. The graph shows the percentage deviation from the target. Our P10 percentage deviation from the target is the largest out of the three companies. We have therefore looked carefully at our proposed ranges and conclude that the values are appropriate, particularly given recent impact of serve weather on our performance.



6.3. Caps and Collars

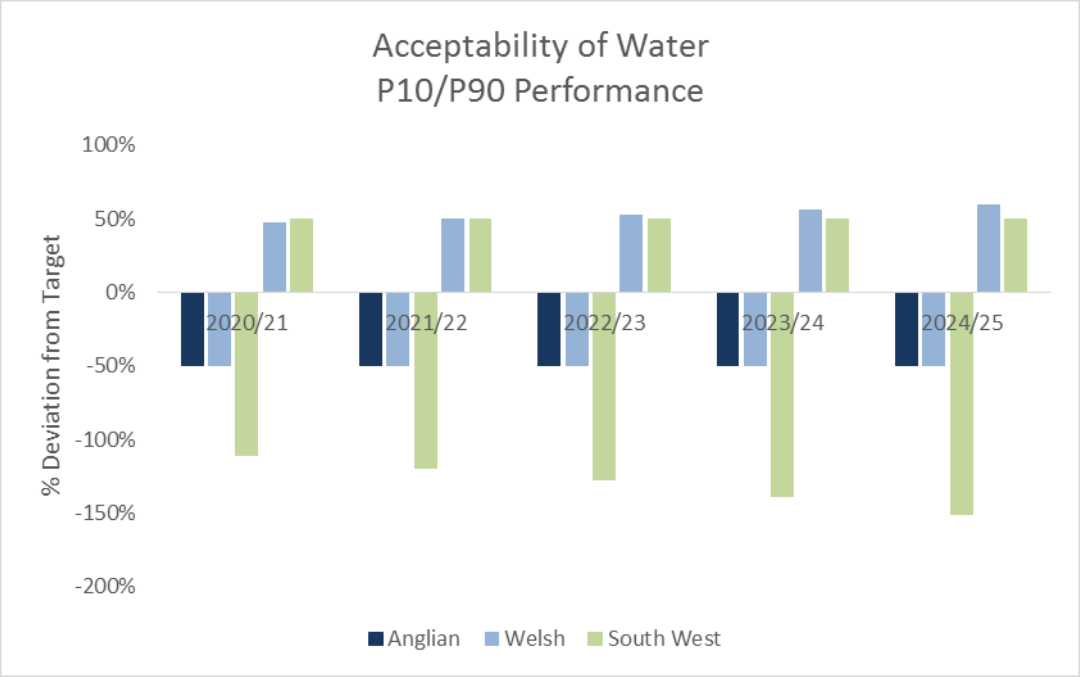
Ofwat outlines that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. Supply interruptions is one of our financially significant performance commitments with a maximum underperformance payment of £19m when performance is at the P10 performance level. Severe weather, such as 2018's freeze/thaw, and significant events outside our control such as third party damage of our pipelines, have the potential to push performance outside the P10/P90 range. We have therefore retained our cap and collar at the P10 and P90 level of performance.

7. Wt3- Acceptability of drinking water

7.1. P10 and P90 levels

Following the feedback in the initial assessment of plans, we have reviewed our P10 and P90 to ensure that they are robust and are a fair reflection of those probability levels. Our approach in our September submission was to determine the appropriate P10 and P90 performance by undertaking bootstrapping on monthly data. Given the level of stretch in the target, we made an adjustment to the P10 performance arising from the bootstrapping exercise to increase the P10 from 2.5 to 3. This was to ensure that the P10 and the collar was a fair reflection of extreme performance. We continue to think this is a valid approach.

As explained in Section 2 above we have reviewed our proposals in relation to South West and Anglian's P10 and P90 performance. The graph shows the percentage deviation from the target. We note that our P10 is similar to Anglian's and our P90 is similar to South West's. This does not suggest that our levels are unreasonable.



7.2. Caps and Collars

Ofwat outlines that PCs should have additional customer protection if they are financially significant or have a degree of uncertainty. Acceptability of water is one of our financially significant performance commitments with a maximum underperformance payment of £13m (11% of Water Network+ total financial out/underperformance payments) when performance is at the P10 performance level. Our level of performance on acceptability of water is influenced by extreme weather events. The number of contacts can increase as a result of a higher level of mains bursts, which can result in discoloured water. The number of mains bursts can increase in severe weather events such as the freeze/thaws in 2010 and 2018. Given the above we have believe a cap and collar for this measure at the P10 and P90 levels are justified.

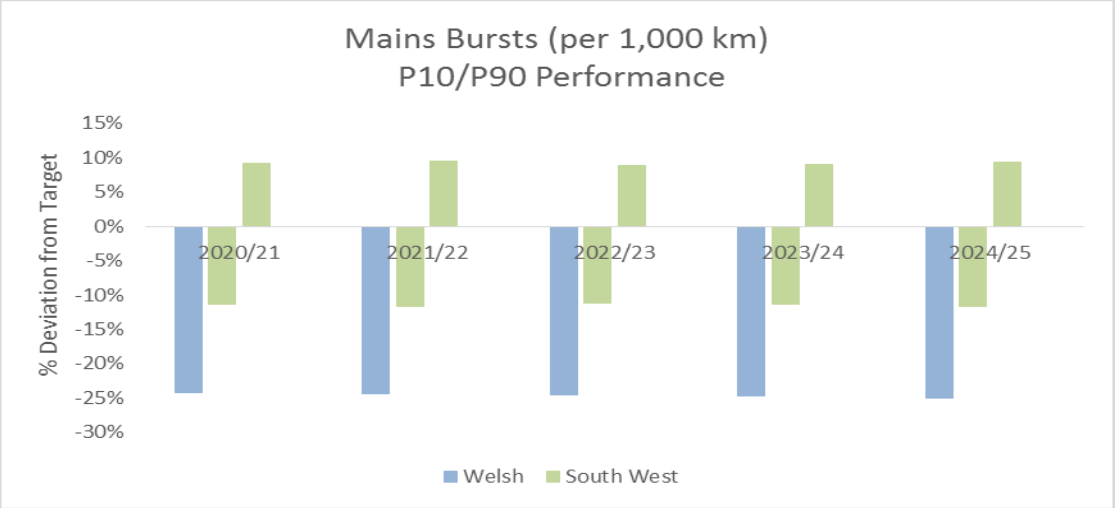
8. Wt4- Water Mains Bursts

Responding to 'Technical Appendix 1: Delivering outcomes for customers'

As explained in Section 2 WTP was not undertaken for this measure as this is an asset health measure, not a service measure. Instead, the proposed underperformance ODI rate for mains bursts was based on the customer prioritisation exercise. The underperformance rate is inferred by the P10 level of performance.

8.1. P10 and P90 Performance

Following the IAP feedback we have reviewed our P10 and P90 for Mains Bursts to ensure that they are robust and are a fair reflection of extreme outcomes. Our proposals were set according to 'bootstrapping' but we chose to widen the P10 value to provide a fair reflect of the level of performance in extreme events. Our P10 and P90 levels are set at the level that reflects the average level of performance during the adverse weather events in 2010 and 2018. We have compared our P10 and P90 levels to those reported by South West as shown in the graph below. Our P10 is set at a higher deviation than South West's. However we believe our P10 level is appropriate given the level of variation in performance due to severe weather.



8.2. Caps and Collars

Ofwat states that PCs should have additional customer protection if they are financially significant or have a degree of uncertainty. Mains Bursts are subject to significant uncertainty as they are impacted by severe weather events. The freeze-thaw events in 2010 and 2018 significantly increased our levels of bursts due to movements in the ground as a result of wet/dry weather and freeze/thaw events. We therefore believe it is justified and in the customer interest to retain caps and collars on this measure.

9. Wt8- Lead Supply Pipes Replaced

9.1. P10 and P90 Performance

Following the IAP feedback, we have reviewed our P10 and P90 levels to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 and P90 are set at approximately 40% above and below our target level of performance. We continue to believe this is set at an appropriate level.

9.2. Caps and Collars

Ofwat outlines that PCs should have additional customer protection if they are financially significant, have a degree of uncertainty, or are unique. We have reviewed other companies' Business Plans and four other companies have an ODI for lead supply pipes. The targeted level of lead pipes replaced varies widely between the companies. Given the lack of comparators we consider that additional customer protection is required and we have proposed caps and collars on this measure.

10. En1- Water and Wastewater Treatment Works Compliance

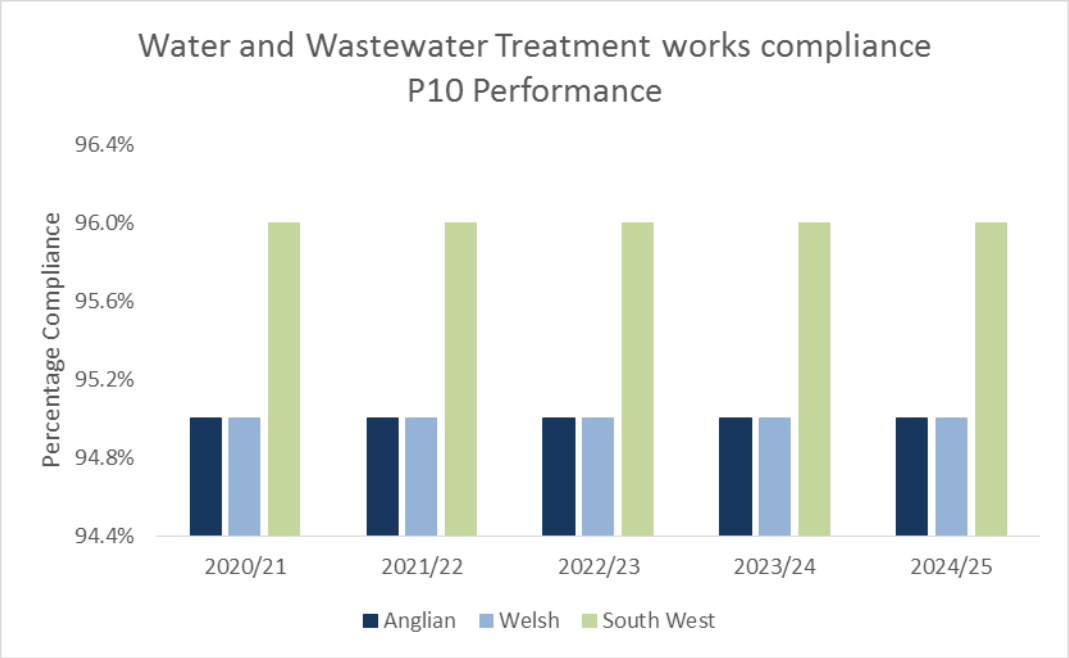
Responding to 'Technical Appendix 1: Delivering outcomes for customers'

As explained in Section 2, since it was not possible to do Willingness to Pay research on this measure, the proposed underperformance ODI rate was based on the customer prioritisation exercise. The underperformance rate is inferred by the P10 level of performance.

10.1. P10 and P90 levels

Following the IAP feedback, we have reviewed our P10 and P90 levels for each measure to ensure that they are robust and are a fair reflection of extreme outcomes. We have reviewed our P10 level relative to South West and Anglian's P10 level. Anglian has proposed a P10 at the same level of performance as ours, and South West's P10 is set at a better level of performance. This comparison does not suggest that our P10 level is unreasonable.

Our performance has shown significant improvement since 2011-12, and we would consider returning to that level (below 95%) as an unlikely and undesirable outcome with 10% likelihood. We therefore think it is justified to set 95% as our P10 level.



10.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. Water and wastewater treatment works compliance is one of our financially significant performance commitments with a maximum underperformance payment of £13m (11% of Wastewater Network+ total financial out/underperformance payments) when performance is at the P10 performance level. It is also subject to uncertainty as it is impacted by extreme weather events, including prolonged

dry weather and extreme rainfall. The extreme weather events cause variability in the level of flow entering the treatment works which can impact on the level of treatment. As a result we believe that applying caps and collars at the P90 and P10 levels is justified.

11. EN2- Wastewater treatment works 'look-up table' Compliance

We have removed this performance commitment as we found that there was a risk that customers were confused between this measure and "Water and Wastewater Treatment work Compliance" B2.1.WSH.OC Performance Commitments IAP response.

12. En3- Pollution Incidents from Wastewater

12.1. ODI Type

Ofwat requested further evidence of customer support for the use of a financial incentive on this measure. Whilst there were concerns expressed in our original qualitative research about the use of outperformance payments, our WTP research indicates that customers are willing to pay for performance improvements. To provide further evidence one way or another, we are undertaking further (quantitative) customer research to test customer views on the use of financial incentives for this measure. The ODI for this measure will be adjusted accordingly.

12.2. ODI rates

As explained in Section 2, we have reviewed our ODI rates in light of the industry data now available. The outperformance and underperformance ODI rates proposed in our September Business Plan are outside Ofwat's 'reasonable range'. The range of ODI valuations from our research is shown in the table below. To determine our revised ODI rate we have followed the approach set out in Section 2 and have set our underperformance and outperformance ODI rates at (£0.21m) and £0.20m per pollution incident per 10,000km of sewers, which is consistent with Ofwat's lower bound.

	Penalty Rate (£m per Unit)
Current	(0.48)
Ofwat Higher Bound	(0.42)
Ofwat Mean	(0.32)
WTP (Highest Value)	(0.30)
Ofwat Lower Bound	**(0.21)**
WTP (Lowest Value)	(0.20)

	Reward Rate (£m per Unit)
Current	0.58
Ofwat Higher Bound	0.34
WTP (Highest Value)	0.30
Ofwat Mean	0.26
WTP (Lowest Value)	**0.20**
Ofwat Lower Bound	0.18

Calculation of the ODI rate

The calculation of our ODI rate for underperformance uses Ofwat's formula outlined in the final methodology. In setting the underperformance rate at Ofwat's lower bound, the outperformance payment using Ofwat's formula reported in App1a produces an outperformance rate of £0.214m. We have therefore marginally decreased the rate to set the outperformance rate at our lowest WTP value. This is in line with our 'decision tree' set out in Section 2.

Responding to Technical Appendix 1: Delivering outcomes for customers

Increments tested with customers

The table below shows the range of performance levels that were tested with customers on in our ODI valuations research. Our research tested performance from 112 incidents to 50

incidents. These levels are consistent with our performance commitment target of 90 pollution incidents by 2024/25.

Pollution Incidents	Status Quo	Status Quo+1	Status Quo+2
WTP Category 1-3 Pollution Incidents	112	81	50
Category 3 Pollution Incidents	103	90	70

Calculation of the WTP values

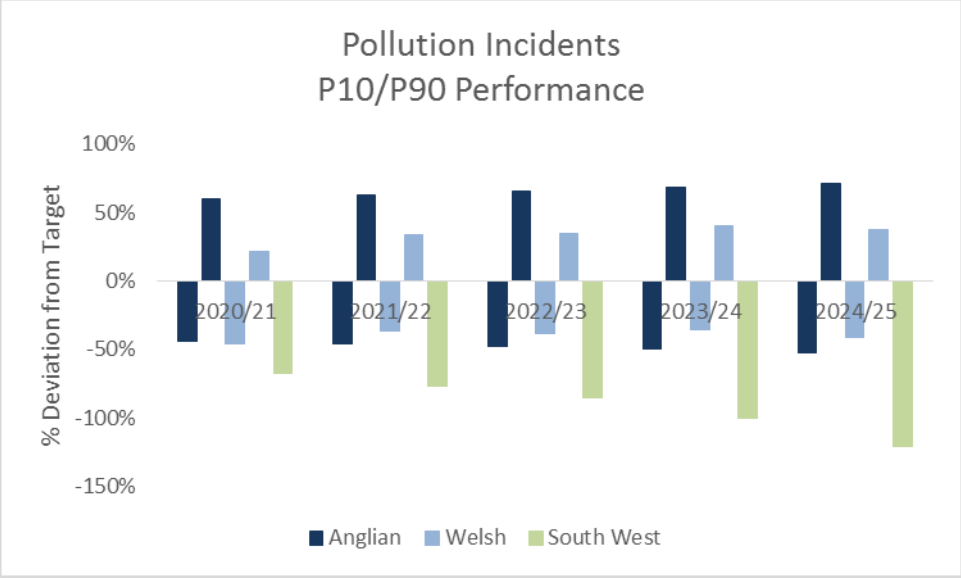
The calculation of our WTP is outlined in '1.1A PR19 Customer Engagement Willingness to Pay' and our MOS research is outlined in '1.1F P19 Customer Engagement- Performance Targets quantitative research'. Within our WTP research we tested both increments and decrements with customers. The results indicated that customers were not willing, on average, to accept any service deterioration in exchange for bill reduction.

Scaling

No scaling has been applied.

12.3. P10 and P90 levels

Following the IAP feedback, we have reviewed our P10 and P90 levels for each measure to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 has been determined through 'bootstrapping' historical monthly data. We have compared the deviation of our P10 and P90 level of performance to the target with South West and Anglian. The graph below shows that our P10 level of performance is in line with Anglian's and close to South West's 2020/21 value. We note that in 2024/25 South West's P10 is significantly higher than ours. This could be as a result of significant reduction in the number of pollution incidents proposed over the AMP. This comparison provides no justification for amending our P10 and P90 levels.



In response to the IAP we have revised our target for pollution incidents. We have revised the P10 and P90 level to reflect the change in the target. The tables below outline the changes:

September 2018 Business Plan

En3- Pollution Incidents from Wastewater (Incidents per 10,000km of sewers)					
	2020-21	2021-22	2022-23	2023-24	2024-25
Outperformance Cap	22	18	17	15	15
P90	22	18	17	15	15
Target	28	27	26	25	24
P10	41	37	36	34	34
Underperformance Collar	41	37	36	34	34

IAP Response

En3- Pollution Incidents from Wastewater (Incidents per 10,000km of sewers)					
	2020-21	2021-22	2022-23	2023-24	2024-25
Outperformance Cap	19	15	14	12	12
P90	19	15	14	12	12
Target	25	24	23	22	21
P10	38	34	33	31	31
Underperformance Collar	38	34	33	31	31

12.4. **Caps and Collars**

Ofwat states that PCs should have additional customer protection if they are financially significant or have a degree of uncertainty. Whilst this measure is not financially significant at the 10% threshold it does account for 9% of the Wastewater Network+ total financial incentives. If the P10 were to be exceed by a small number of incidents, this would become a financially significant ODI. The measure is subject to significant uncertainty as it is impacted by severe weather events. We therefore believe it is justified and in the customer interest to retain caps and collars on this measure.

13. En4- Leakage

13.1. ODI Rates

The outperformance and underperformance ODI rates proposed in our September Business Plan are outside Ofwat's 'reasonable range'. We have reviewed our ODI rates in light of the industry data now available. Our ODI valuation range is shown in the table below. We have set our underperformance and outperformance ODI rate at (£0.17m) and £0.14m per Ml/D, consistent with Ofwat's lower bound, as explained in Section 2.

	Penalty Rate (£m per Unit)
Current	(1.00)
WTP (Highest Value)	(0.96)
Ofwat Higher Bound	(0.40)
Ofwat Mean	(0.28)
Ofwat Lower Bound	**(0.17)**
WTP (Lowest Value)	(0.04)

	Reward Rate (£m per Unit)
Current	1.25
WTP (Highest Value)	0.59
Ofwat Higher Bound	0.36
Ofwat Mean	0.25
Ofwat Lower Bound	**0.14**
WTP (Lowest Value)	0.04

Calculation of the ODI rate

The calculation of our ODI rate for underperformance uses Ofwat's formula outlined in the final methodology. Our customer research gave us a wide range of marginal benefit values, therefore given the wider industry data, we have weighted this appropriately to achieve Ofwat's lower bound. In setting the underperformance rate at Ofwat's lower bound, the outperformance payment using Ofwat's formula reported in App1a produces an outperformance rate of £0.168m. We have marginally decreased the rate to set the outperformance rate at Ofwat's lower bound, in line with our 'decision tree' set out in Section 2.

Responding to Technical Appendix 1: Delivering outcomes for customers

Increments tested with customers

The table below shows the range of leakage levels that were tested with customers in our ODI valuations research. Our WTP research tested performance from 169Ml/D to 115Ml/D which is consistent with our performance commitment target.

Pollution Incidents (Number)	Status Quo	Status Quo+1	Status Quo+2
WTP	169	154	115
MOS	175	169	165

Calculation of the WTP values

The calculation of our WTP is outlined in '1.1A PR19 Customer Engagement Willingness to Pay' and our MOS research is outlined in '1.1F P19 Customer Engagement- Performance

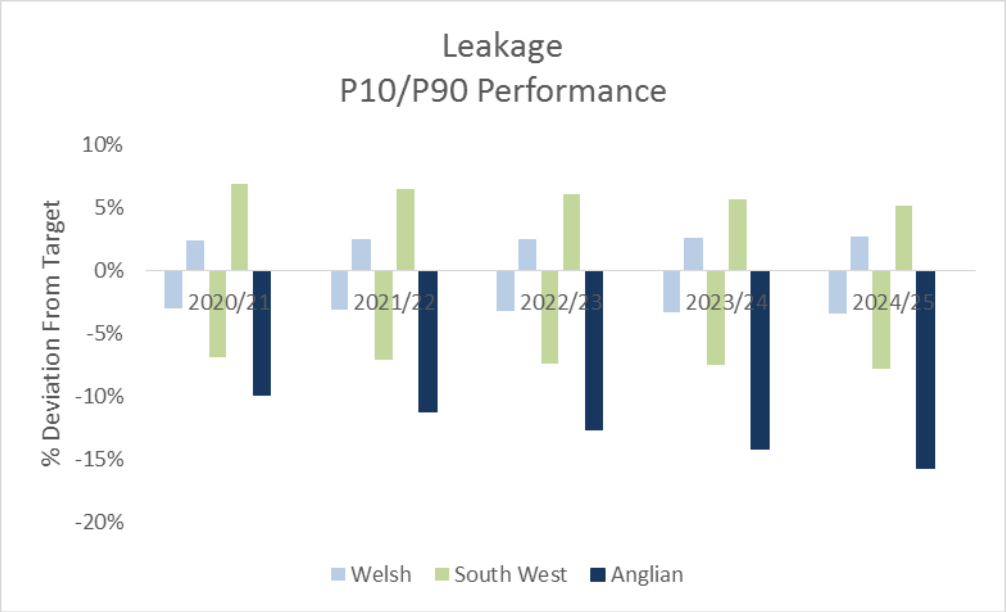
Targets quantitative research'. Within our WTP research we tested both increments and decrements with customers. The results indicated that customers were not willing, on average, to accept any service deterioration in exchange for bill reduction.

Scaling

No scaling has been applied.

13.2. P10/P90 levels

Following the IAP feedback, we have reviewed our P10 and P90 for each measure to ensure that they are robust and are a fair reflection of extreme outcomes. We have reviewed our percentage deviation compared to South West and Anglian's. Whilst we have the lowest deviation of the three companies. We have reviewed our P10 level of performance in light of this and we believe that the P10 level we proposed is appropriate given our historical performance.



13.3. Caps and Collars

Ofwat states that PCs should have additional customer protection if they are financially significant or are subject to significant uncertainty. Leakage is subject to uncertainty as performance is impacted by severe weather events. We therefore believe it is justified and in the customer interest to retain caps and collars on this measure.

14. En6- Km of River Improved

14.1. P10 and P90 Performance

Following the IAP feedback, we have reviewed our P10 and P90 levels for each measure to ensure that they are robust and are a fair reflection of extreme outcomes. The kilometres of river improved is a regulatory driver in our National Environment Programme. The P10 and P90 level is set at 14% above and below our target level of performance. We continue to believe this is set at an appropriate level.

14.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. Kilometres of rivers improved is one of our financially significant performance commitments with a maximum underperformance payment of £13m (11% of Wastewater Network+ total financial out/underperformance payments) when performance is at the P10 performance level.

15. EN7- Bioresources Product Quality

15.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

15.2. P10 and P90 Performance

Following the IAP feedback, we have reviewed our P10 and P90 levels for each measure to ensure that they are robust and are a fair reflection of extreme outcomes. Our projected P10 and P90 levels have been set based on a forecast of the level of unplanned shutdowns and the availability of our sludge treatment centres at a 10 percent probability. We continue to believe this is a reasonable and justified approach.

15.3. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant, have a degree of uncertainty or are unique in the industry. This measure is unique within the industry, therefore we believe caps and collars are justified.

16. EN8- Bioresources Disposal Compliance

16.1. P10 Performance

Following the IAP feedback, we have reviewed our P10 and P90 levels for each measure to ensure that they are robust and are a fair reflection of extreme outcomes. We continue to believe this is set at an appropriate level.

16.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. The inclusion of a cap and collar for this measure is consistent with our overall approach to customer protection.

17. Sv3 - Customer Trust

17.1. ODI Rate

Ofwat note that several of our ODI incentives are high relative to industry comparators. As explained in Section 2, for a number of our key measures we have revised our ODI rates given the availability of additional information from other companies' Willingness to Pay research. Our original proposal was set the rates for outperformance and underperformance rates in line with Ofwat's enhanced outperformance and underperformance payment for C-Mex, as Customer Trust is our 'flagship' PC. However, in light of the new information, and in response to Ofwat's challenge on this measure, we have reduced our ODI rate to be in-line with Ofwat's standard outperformance and underperformance rates for C-Mex. However we are testing the appropriate level of financial incentives as part of our supplementary customer research. The results from the research may require us to adjust the rate further.

17.2. P10 and P90 Performance

Following the IAP feedback, we have reviewed our P10 and P90 levels for each measure to ensure that they are robust and are a fair reflection of extreme outcomes. The P10 and P90 levels were set based on the range of performance scores experienced by the industry over the last two years. On average over the last two years the worst performing water and sewerage company's trust score was 0.5 points lower than the upper quartile. We continue to believe that this is a reasonable and justified approach.

17.3. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. Customer trust is not financially significant at a price control level as the incentives are split between Water and Wastewater. However, Customer Trust is our flagship PC and has the highest level of overall financial incentives. Given the overall level of incentives and the potential level of ODIs if performance were above and below the cap and collar, we believe it is appropriate to ensure customers are protected against large financial payments. We therefore propose to retain caps and collars on this measure.

18. SV3- Business Customer Satisfaction

18.1. Deadbands

Ofwat's IAP challenges the use of a deadband for this measure. In our original submission we set a target of 90% and a deadband of 88%, reflecting the particularly challenging nature (in comparison with recent performance and industry comparators) of a 90% customer service measure. We have reviewed this target since September 2018 in light of published information on customer satisfaction, and have decided to revise our target down to 88%. We believe this is still a stretching target, but we are content not to have a deadband at this level.

18.2. P10 and P90 levels

Following the IAP feedback, we have reviewed our P10 and P90 to ensure that they are robust and are a fair reflection of extreme outcomes. Our P90 performance level is set at a sore of 4.6, 0.2 higher than the target level. The P90 has been reduced in-line with the change to the target, to ensure symmetry between the under and outperformance payments. We believe a value lower than the maximum score of 5 as we believe achieving a 'perfect score' is unachievable. The P10 is set a value of 4, which we believe is justified given our historical performance on this measure.

18.3. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. This ODI is financially significant for the business retail price control. This measure is also unique within the industry, therefore it is appropriate to provide customer protection for significant under or outperformance.

19. Rt1 - Sewer Flooding on Customer Property (Internal)

19.1. ODI Rates

Our proposed ODI rates in our September Business Plan are outside Ofwat's 'reasonable range'. We have reviewed our ODI rates in light of the information in Appendix 1: Delivering outcome for customers. The table below shows the range of ODI valuations from our customer research. In accordance with the approach set out in Section 2, we have set our underperformance and outperformance ODI rates at (£1.8m) and £0.3m per incident per 10,000 sewer connections. The revised underperformance and outperformance rate is lower than Ofwat's lower bound, however it is consistent with our Willingness to Pay data.

	Penalty Rate (£m per Unit)
Current	(10.3)
Ofwat Higher Bound	(10.1)
Ofwat Mean	(6.9)
Ofwat Lower Bound	(3.7)
WTP (Highest Value)	**(1.8)**
WTP (Lowest Value)	(0.8)

	Reward Rate (£m per Unit)
Current	10.7
Ofwat Higher Bound	6.6
Ofwat Mean	4.7
Ofwat Lower Bound	2.9
WTP (Highest Value)	**0.3**
WTP (Lowest Value)	0.2

Calculation of the ODI rate

The calculation of our ODI rate for underperformance uses Ofwat's formula outlined in the final methodology. Our customer research gave us a wide range of marginal benefit values. Therefore, given the wider industry data, we have weighted this appropriately to achieve Ofwat's lower bound. In setting the underperformance rate at Ofwat's lower bound, the outperformance payment using Ofwat's formula reported in App1a produces an outperformance rate of £1.83m, which is higher than our largest outperformance payment calculated through our WTP. We have reduced the rate to set the outperformance rate at our highest outperformance payment informed from our WTP research, in line with our decision tree.

Responding to Technical Appendix 1: Delivering outcomes for customers

Increments tested with customers

To understand customers' marginal benefits, two pieces of research were undertaken. A range of performance levels were examined with customers. The table below outlines the range of performance levels that were tested with customers. Our research tested performance from 225 incidents to 150 incidents. These are consistent with our performance commitment target of 273 properties by 2024/25, because of changes in the definition of internal sewer flooding which has resulted in a higher number of incidents.

Internal Flooding (Properties)	Status Quo	Status Quo+1	Status Quo+2
WTP Properties	220	175	150
MOS Research	225	200	180

Calculation of the WTP values

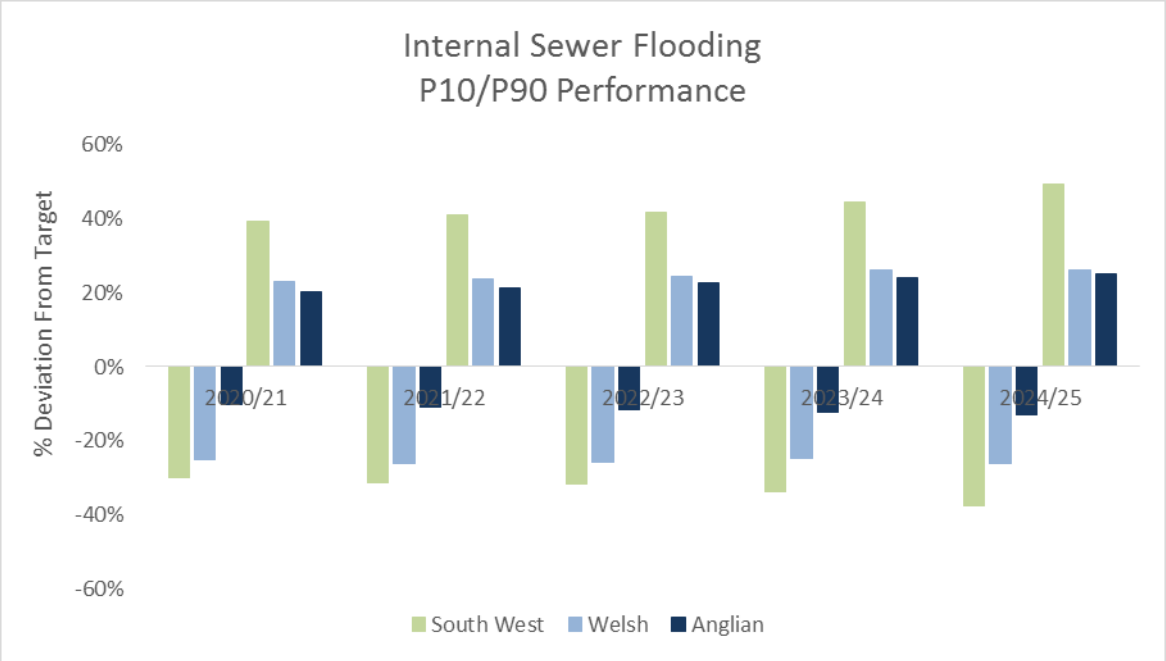
The calculation of our WTP is outlined in '1.1A PR19 Customer Engagement Willingness to Pay' and our MOS research is outlined in '1.1F P19 Customer Engagement- Performance Targets quantitative research'. Within our WTP research we tested both increments and decrements with customers. The results indicated that customers were not willing, on average, to accept any service deterioration in exchange for bill reduction.

Scaling

No scaling has been applied.

19.2. **P10/P90 levels**

Following the IAP feedback, we have reviewed our P10 and P90 to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 and P90 estimates were based on 'bootstrapping' monthly performance data to estimate the probability distribution function. The P10 and P90 range was widened to ensure the values reflected a realistic view of likely outcomes. We have compared our P10 and P90 to those reported by South West and Anglian. The graph below reports the percentage deviation from the target, which indicates that our P10 and P90 level sits between the values for South West and Anglian. There is therefore no suggestion from this comparison that we should change our levels.



In response to the IAP we have revised our target for internal sewer flooding. We have revised our P10 and P90 level to reflect the change in the target. The tables below outline the changes:

September Business plan

Rt1- Sewer Flooding on Customer Property (Internal) (Incidents per 10,000 sewer connections)					
	2020-21	2021-22	2022-23	2023-24	2024-25
Outperformance Cap	1.533	1.482	1.433	1.377	1.335
P90	1.533	1.482	1.433	1.377	1.335
Target	1.994	1.941	1.895	1.863	1.805
P10	2.496	2.446	2.383	2.322	2.274
Underperformance Collar	2.496	2.446	2.383	2.322	2.274

IAP Response

Rt1- Sewer Flooding on Customer Property (Internal) (Incidents per 10,000 sewer connections)					
	2020-21	2021-22	2022-23	2023-24	2024-25
Outperformance Cap	1.401	1.356	1.304	1.233	1.203
P90	1.401	1.356	1.304	1.233	1.203
Target	1.862	1.814	1.766	1.719	1.672
P10	2.364	2.319	2.255	2.178	2.142
Underperformance Collar	2.364	2.319	2.255	2.178	2.142

19.3. **Caps and Collars**

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. Whilst this measure is not financially significant, the level of performance could go beyond the P10 and P90 level of performance as a result of extreme weather events. Given the potential for large variations in performance, and the associated uncertainty, we continue to believe that caps and collars for this measure are justified.

20. Rt2- Sewer Flooding on Customer Property (External)

20.1. ODI Rates

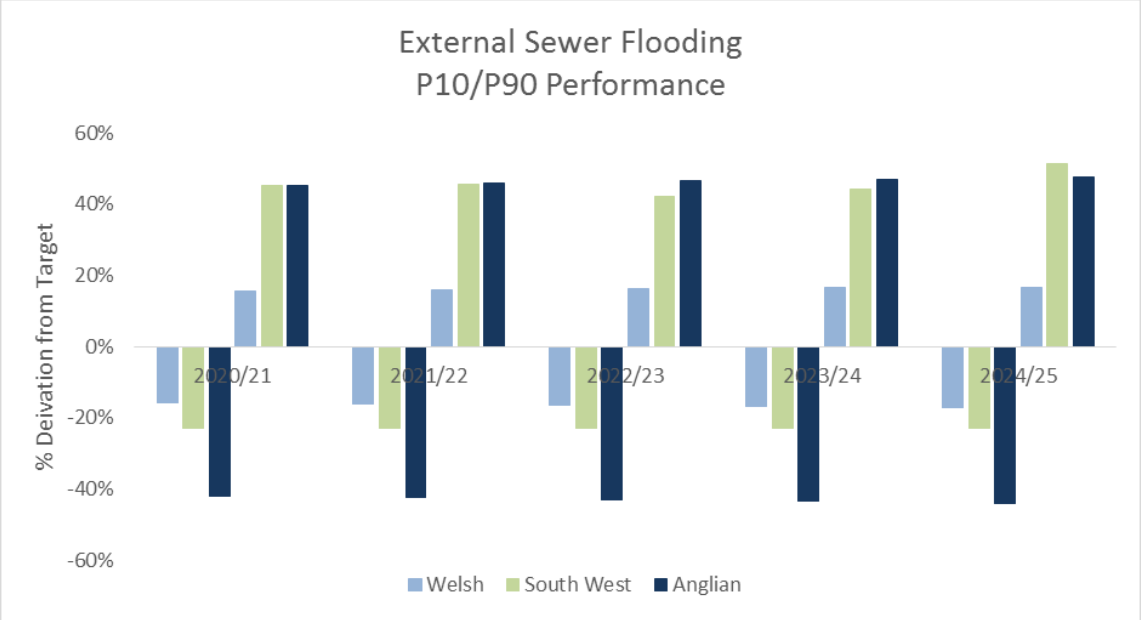
The outperformance and underperformance ODI rates in our September Business Plan are outside Ofwat's 'reasonable range'. We have reviewed our ODI rates in light of the information in Appendix 1: Delivering outcome for customers. The table below shows the range of ODI valuations from our customer research. To determine our revised ODI rate we followed the decision tree outlined in Section 2. We have set our underperformance and outperformance ODI rate at (£0.23m) and £0.23m per incident per 10,000 sewer connections. The revised underperformance and outperformance rate is higher than Ofwat's lower bound. However it is consistent with our Willingness to Pay data.

	Penalty Rate (£m per Unit)
WTP (Highest Value)	(0.42)
Current	(0.32)
WTP (Lowest Value)	**(0.23)**
Ofwat Higher Bound	(0.18)
Ofwat Mean	(0.13)
Ofwat Lower Bound	(0.09)

	Reward Rate (£m per Unit)
WTP (Highest Value)	0.42
Current	0.32
WTP (Lowest Value)	**0.23**
Ofwat Higher Bound	0.15
Ofwat Mean	0.10
Ofwat Lower Bound	0.05

20.2. P10/P90 levels

Following the IAP feedback, we have reviewed our P10 and P90 to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 and P90 estimate was based on 'bootstrapping' monthly performance data to estimate the probability distribution function. We have compared our P10 and P90 to those reported by South West and Anglian. The graph below reports the percentage deviation from the target, which indicates that our P10 and P90 is lower than that of South West and Anglian. We have therefore looked again at our P10 and P90 and we believe that the levels are appropriate.



20.3. **Caps and Collars**

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. The performance on the level of external sewer flooding is partly influenced by the weather, for example during an extreme storm. Given this level of uncertainty we believe that our proposed caps and collars on this measure are justified.

20.4. **Additional Information**

Increments tested with customers

To understand customers' marginal benefits, two pieces of ODI valuation research were undertaken and a range of performance levels were examined with customers. The table below outlines the range of minutes lost that were tested with customers. Our research tested performance from 6,500 incidents to 3,500 incidents. The values tested with customers are higher than our Business Plan target as a result of changes in the definition through the convergence. The percentage reduction from our historical performance to our Business Plan targets in 2024-25 is in line with the percentage reduction tested with customers in the research.

External Flooding (Incidents)	Status Quo	Status Quo+1	Status Quo+2
WTP Properties	6,500	5,000	3,500
MOS Research	6,500	6,300	6,100

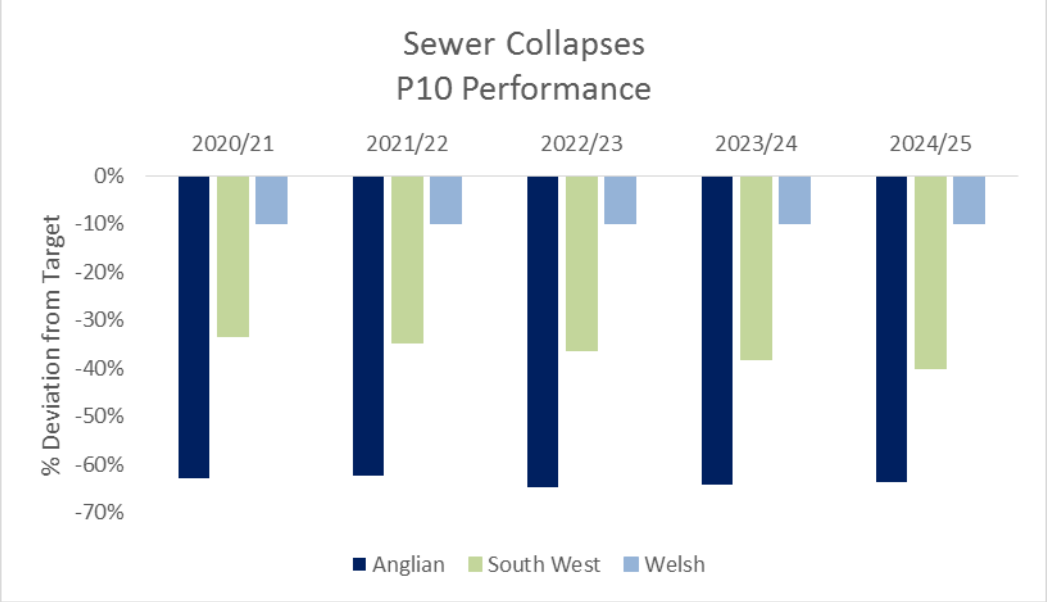
21. Rt3- Sewer Collapses

Response to Technical Appendix 1: Delivering outcomes for customers

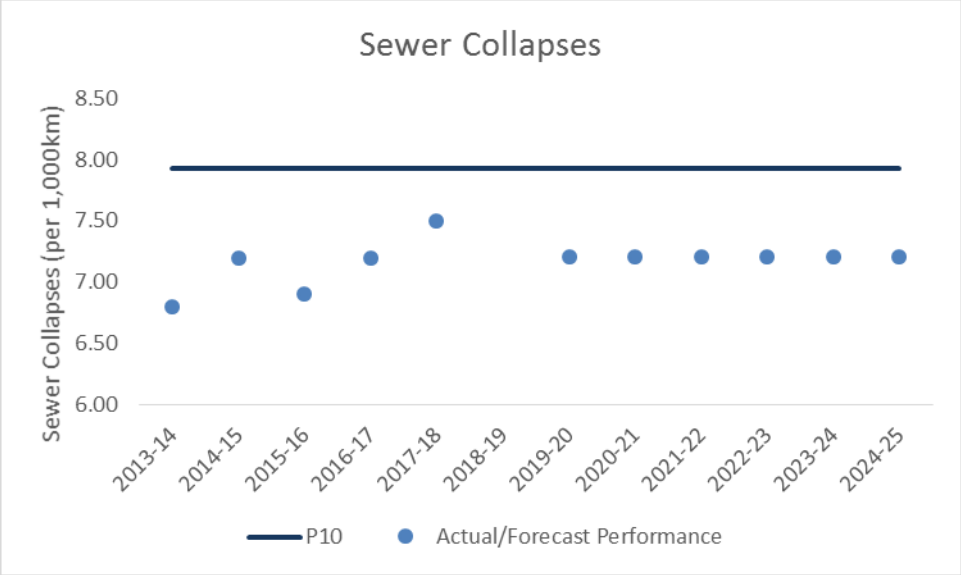
As explained in Section 2 Willingness to Pay was not undertaken for this measure as this is an asset health measure, not a service measure. Instead, the proposed underperformance ODI rate for mains bursts was based on the customer prioritisation exercise. The underperformance rate is inferred by the P10 level of performance.

21.1. P10 and P90 levels

Following the IAP feedback, we have reviewed our P10 and P90 levels to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 and P90 levels were based on 'bootstrapping' monthly performance data to estimate the probability distribution function. We have now compared our P10 and P90 to those reported by South West and Anglian. The graph below reports the percentage deviation from the target for the three companies.



Our P10 is smaller than the other two companies. However our number of sewer collapses has historically been a relatively stable measure. The graph shows our historical performance for this measure. Given our historical performance we believe that the P10 value we have chosen is appropriate.



21.2. **Caps and Collars**

Ofwat states that ODIs should have additional customer protection if they are financially significant or are subject to a degree of uncertainty. This measure is not financially significant, however it is subject to significant uncertainty due to the potential impact of extreme weather events. Movements in the ground as a result of wet/dry weather and freeze/thaw events can significantly affect sewer collapses. We therefore believe it is justified and in the customer interest to retain caps and collars on this measure.

22. Rt4- Total Complaints

22.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

22.2. P10 and P90 levels

Following the IAP feedback, we have reviewed our P10 and P90 to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 a level of complaints 95% higher than our target whilst our P90 is 30% lower than our target. The P90 on the underperformance is significantly greater given our ambitious targets. Complaints are also influenced by factors that are beyond our control, so it is much more likely to have 'downside' risk than 'upside' variations.

22.3. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. Whilst this measure is not financially significant, the level of performance could go beyond the P10 and P90 level of performance as a result of extreme weather events. During extreme weather events we are likely to be subject to a significant number of complaints that are beyond our control. We therefore think it is justified to retain a collar on this measure, and it would not be appropriate to have a collar but no cap, so we have also set a cap to protect customers.

23. Ft4 - Surface Water Removed from Sewers

23.1. P10 and P90 Performance

Following the IAP feedback, we have reviewed our P10 and P90 to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 and P90 levels are 17% from the target performance in 2024-25. There is a level of uncertainty in our performance as we have made an assumption in our plan as to how often our 'Rainscape' solution will prove to be the optimal solution in areas where the network in under pressure. We have reviewed our P10 and P90 and believe these remain appropriate

23.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty or uniqueness. Whilst this measure is not financially significant, we are one of only three companies that has an ODI on surface water management. We note that whilst the other companies have a similar performance commitment, our target of 47,000 roof equivalents is of a much larger magnitude. It is therefore unique in its scale. As a result we believe that caps and collars are justified and in the customer interest.

24. Ft5- Asset Resilience (Reservoirs)

24.1. ODI Type

Ofwat has asked us to provide further evidence to justify the use of financial incentives for this PC, including evidence that customers support and are willing to pay for outperformance. We are undertaking further customer engagement on this measure to understand customers' preferences for financial and non-financial incentives. Given the results of the customer research we will update our ODI package if it is required and we will submit a revised package no later than the 30th of April.

24.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. This measure is financial significant, as it accounts for more than 10% of the total outperformance payments at the P10 and P90 level of performance. Asset resilience is a new measure and is bespoke to us, as there is a lack of data we have applied at cap and collar as the P10 and P90 to protect customers against the possibility of performance deviating from this level.

25. Ft6- Asset Resilience (Water Network+ above ground)

25.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

25.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. This measure is financial significant, as it accounts for more than 10% of the total outperformance payments at the P10 and P90 level of performance. Asset resilience is a new measure and is bespoke to us, as there is a lack of data we have applied at cap and collar as the P10 and P90 to protect customers against the possibility of performance deviating from this level.

26. Ft7- Asset Resilience (Water Network+ below ground)

26.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

26.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. This measure is financial significant, as it accounts for more than 10% of the total outperformance payments at the P10 and P90 level of performance. These asset resilience are new and bespoke to us. A there is a lack of historical or comparative data we have applied at cap and collar as the P10 and P90 to protect customers against the possibility of performance deviating from this level.

27. Ft8- Asset Resilience (Wastewater Network+ above ground)

27.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

27.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. This measure is financial significant, as it accounts for more than 10% of the total outperformance payments at the P10 and P90 level of performance. These asset resilience are new and bespoke to us. A there is a lack of historical or comparative data we have applied at cap and collar as the P10 and P90 to protect customers against the possibility of performance deviating from this level.

28. Ft9- Asset Resilience (Wastewater Network+ below ground)

28.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

28.2. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty. This measure is financial significant, as it accounts for more than 10% of the total outperformance payments at the P10 and P90 level of performance. These asset resilience are new and bespoke to us. A there is a lack of historical or comparative data we have applied at cap and collar as the P10 and P90 to protect customers against the possibility of performance deviating from this level.

29. Ft10- Community Education

29.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

29.2. P10/P90

Following the IAP feedback, we have reviewed our P10 and P90 for this measure to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 and P90 were set based on the risk to changes in school curriculums and the potential increase in students through our 'Water resilient communities'. We have reviewed these and believe they are reflective of extreme outcomes.

29.3. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty or uniqueness. Whilst this measure isn't financially significant there is uncertainty with regards to the forecast future performance. The performance of this measure could be subject to changes to school curriculums for example. We have also examined whether other companies have a similar ODI or whether the measure is unique. Wessex Water appears to be the only other company with a similar ODI. Whilst the Business Plan tables does not report the associated P10 and P90 values we have back calculated these from the rates and we note that our P10 is of a similar magnitude but our P90 is of a smaller magnitude given our target performance. Our conclusion from this review is that caps and collars are appropriate and in the interest of customers given the uncertainty and the lack of comparators from other companies.

30. Ft11- Visitors to recreational facilities

30.1. ODI Type

Ofwat has asked us to provide further evidence of customer support for the use of outperformance payments for this ODI. We are undertaking further customer engagement on this measure to test customers' support for financial incentives. As set out in Section 2 we will update our ODI scheme according to the results.

30.2. P10/P90

Following the IAP feedback, we have reviewed our P10 and P90 for visitor attractions to ensure that they are robust and are a fair reflection of extreme outcomes. Our P10 and P90 levels are set at approximately 50% above and below our target level of performance. There is a potential variation in the forecast target depending on the dates when our new facilities become available, the take-up, and competition from other nearby attractions. We have set a stretching target for this measure of 830,000 visitors per year by 2024/25 and our P10 is just below our current number of visitors. We believe this is a fair reflection of the P10, given the number of new visitor centres we are opening over the AMP.

30.3. Caps and Collars

Ofwat states that ODIs should have additional customer protection if they are financially significant or have a degree of uncertainty or uniqueness. Whilst this measure isn't financially significant there is uncertainty with regards to the forecast future performance. The performance of this measure will be influenced by the timing of our new facilities being available and the take up rate of these facilities. This measure is also unique within the industry, therefore it is appropriate to provide customer protection for significant under or outperformance.

31. Reputational incentives

In its IAP feedback, Ofwat requested evidence of customer support for the proposal to use reputational incentives on three of our measures; per capita consumption, unbilled properties and unplanned outages.

Per Capita Consumption

In our September Business Plan we proposed to have a reputational ODI for this new common performance measure. Most of the other companies put forward financial ODIs, and in the IAP Ofwat asked us to provide "*…further evidence to justify the use of a non-financial incentive for this PC and evidence of customer support for this approach."*

We have given Ofwat's feedback careful consideration, and have noted the position of other companies. However, it remains our position that we think a financial ODI for per capita consumption would be wrong for our customers, for the following reasons.

First, for a financial incentive to be meaningful it must pertain to matters that are substantially within management control. Reported per capita consumption does not meet this condition. We saw, with the drought of 2018, an increase in per capita consumption in our region. Whilst we put in place elevated customer communication strategies to persuade customers to use water sparingly and not to waste water, we saw an inevitable and significant increase in usage. Had we had a financial ODI for per capita consumption we would have been penalised for events that were outside our control. In addition, we do not think it makes sense to apply a financial ODI to per capita consumption until differences in reporting between companies have been eliminated and a common standard is in place. Otherwise, companies will earn rewards and pay penalties solely for reasons to do with adjustments in definitions whilst the convergence process takes place, not matters within management control. One answer to these points would be to set deadbands at appropriate levels to capture potential fluctuations in matters outside of company control, but this would negate the effect of the financial ODI, because the potential magnitude of such factors dwarfs the sort of changes in per capita consumption that a management can achieve from one year to the next.

Second, unlike most other performance measures it is not unambiguously the case that movement in per capita consumption in one direction or another is always "a good or a bad thing". Water in Wales is a precious and valuable resource, and we firmly support its efficient use. But it does not follow that incremental reductions in PCC are always in customers' interests, nor that increases are invariably to be frowned upon. For example, customers in Wales are encouraged to reduce their use of single-use plastic, including bottled water, and to make more use of tap water, an initiative that we strongly support. It would be perverse for us to earn financial rewards as a result of customers nonetheless choosing bottled water over tap water..

Finally, customers have made it clear to us that they do not support a financial ODI for per capita consumption. As we stated in our Business Plan, when we explored their views they indicated that they thought it was important for us to monitor consumption, measure supply/demand and ensure future supplies for everyone. However, they disliked financial incentives on per capita consumption because they felt this would be counter intuitive to have customers paying more for using less. Examples of statements that were made

include: *"it seems odd to put bills up if we use less water"* and "*you can't tell people to use less water*".

In the light of Ofwat's IAP feedback we are consulting with customers once again to confirm that this is their position. This information will be available by 30th April.

Unbilled properties

In our September Business Plan we proposed to have a reputational ODI for this new common performance measure. In the IAP Ofwat asked us to provide "*…further evidence to justify the use of a non-financial incentive by demonstrating why a financial incentive would not be in the interests of customers."*

At present we already face incentives, both financial and non-financial, to manage the level of unbilled properties efficiently and effectively. If we allowed numbers of voids to increase we would collect less revenue which would mean higher bills for all our billed properties at the wholesale level, and lower turnover for us at the retail level, thus depressing profits. A failure to bill occupied properties would also damage our reputation and undermine customer trust.

We do not think that a financial incentive would work, and it would not be in the interests of customers, for the following reasons.

First, for a financial incentive to be effective it must relate to matters that are substantially within management control. The stock of unoccupied properties is in large part a function of wider macroeconomic factors, including the level of economic activity and the housing market, both of which are outside the control of management.

Second, for a financial incentive to be justified it has to drive the right behaviours. If it encourages perverse outcomes then it is not in the interests of customers. However, a financial incentive for unbilled properties would do just that. For example, if a reward is available to reduce the number of reported unbilled properties a company may be encouraged to commit resources to step up its records-cleansing activities beyond what would be normal or optimal. Similarly, under the APR definition of void properties, an occupied unbilled property where it would be uneconomical to send a bill is not included in the count. There is a range of possible interpretations of the application of the "uneconomical" principle, and the introduction of financial incentives could encourage companies to re-examine the approach that they take. (Indeed, the presence of a financial incentive could itself have an impact on what was "uneconomical" in a way that benefits the company, at the margin, but is to the detriment of customers). Rather than encouraging companies to do what a financial incentive would be intended to achieve, therefore, we think there would inevitably be a tendency to exploit ways of improving reported figures on unbilled properties, without necessarily incurring any effort to find occupied unbilled properties over and above the range of activities that the company already carries out.

We are testing the acceptability of this approach with customers in our additional customer research.

Unplanned outages

In our Business Plan we did not propose a financial incentive for this measure. In the IAP Ofwat stated "*The company should propose an underperformance incentive rate for this PC, supported by evidence to justify the customer valuation and forecast efficient marginal cost inputs it proposes.*"

We have thought about Ofwat's position carefully, but we do not agree that a financial incentive for this measure would provide any benefit for customers. Our systems are configured and managed in such a way that unplanned outages at treatment works generally have no effect on service. Since customers are unaffected, their valuation of such outages is likely to be zero. Where, exceptionally, outages do affect customers, this will be picked up in one of our service performance measures, typically supply interruptions, for which ODI rewards and penalties apply. It would be incoherent to supplement this with a specific ODI for unplanned outages.

To put the point another way, there is an optimal level of water process outages which balances the effect of outages on performance (usually zero) with the incremental cost of making processes "failsafe". Were a financial incentive to be introduced we would be encouraged to reduce the expected level of outage, which would mean higher bills for customers but little or no change in the service they receive. We think it would be much better if financial ODIs were concentrated on the things that directly matter to customers. Trying to influence how companies deliver those, risks distorting planning and operational decisions in a way that benefits nobody.

We are testing the acceptability of this approach with customers in our additional customer research.