WSH31-ODI Rates Commentary

Contents

1. Introduction and context

The ODI regime is a key component of Ofwat's broader regulatory framework. It is intended to ensure that companies have the right incentives to deliver the levels of performance customers want.

In developing their PR24 business plans, companies must decide what incentive rates to propose, within their ODI package. Ofwat's final methodology states that, to meet its 'minimum expectations' under its quality and ambition assessment (QAA), companies should adopt its proposed incentive rates for common PCs. The regulator's method also states that companies can deviate from its proposed rates and still meet its minimum expectations, if they provide 'compelling evidence' as to why this is appropriate. In addition, companies are financially incentivised to adopt Ofwat's incentive rates under the QAA.

In deciding what rates to adopt, companies must therefore balance: (a) their own objective view as to what incentive rates are in the best interests of customers; the environment and other stakeholders; against (b) the risk of financial penalty under any deviation from Ofwat's proposals (where those diverge from the former). This has been made more challenging, due to the (understandable) change in Ofwat's proposed method.

In this document, we set out how we have balanced the above considerations, and arrived at our ODI rate proposals for PR24. It is structured as follows:

- First, we set out our views of Ofwat's indicative rates for PR24, alongside the views provided by Economic Insight.
- Second, we set out our proposed incentive rates for all PCs except biodiversity, combined sewer overflows, and greenhouse gas emissions, including: (i) our decision to reject Ofwat's indicative incentive rates; and (ii) the methodology used to arrive at an alternative set of rates.
- Third, we set out the rates for combined sewer overflows and greenhouse gas emissions, for which we have developed unique methodologies to arrive at each set of rates.
- Finally we set out our analysis of the risk and return range, compared to our regulatory equity (RoRE), arising from our proposed ODI rates, and comparing it with Ofwat's guidelines.

We believe the set of rates we are proposing build on the valid elements of the approach used by Ofwat to calculating its indicative set of rates; while addressing some of the concerns that have been identified. Namely, our proposed rates:

  i.   Benefit from being based on Ofwat's top-down approach, which both ensures a level of consistency between companies, and does not rely on uncertain calculations of marginal costs and benefits;
  ii. Build on Ofwat's approach, due to being calculated on a larger and more robust sample of data than is used by Ofwat, and allow for greater consistency between price control periods, which maintains the incentive power of the ODI regime.

2. Ofwat's indicative PR24 ODI rates

In its final methodology, Ofwat stated that it would generally adopt a 'bottom-up' approach to calculating ODI rates, based on the 'collaborative customer research' it was commissioning. One of Ofwat's objectives in its final methodology was to improve the consistency of ODI rates across companies, and its approach was expected to deliver on this.

However, Ofwat subsequently concluded that it was not appropriate to set ODI rates based on the collaborative customer research alone. Its reservations related to challenges of interpreting the survey results, and robustly mapping the results to performance commitments.

On 2nd June 2023, Ofwat informed companies that it would move away from this bottom-up approach, and instead adopt a 'top-down' approach to setting incentive rates for all common PCs. This consists of allocating an amount of RoRE at risk to each PC, and then dividing it across a performance range to derive a unit incentive rate. On 15th June 2023, Ofwat shared its proposed indicative incentive rates for Welsh with us.[1] Ofwat's approach to the QAA is unchanged by it adopting this revised method (i.e. it remains the case that Ofwat's minimum expectation is that companies adopt its indicative incentive rates, or provide compelling evidence otherwise). Ofwat has also requested feedback on its top-down approach.

This approach did not produce rates for 2 PCs: greenhouse gas emissions, and biodiversity, and indicative rates will not be provide for these PCs ahead of business plan submissions. Ofwat has told companies that we can propose our own rates for these PCs in our Business Plan, if we wish.

3. Our consideration of Ofwat's indicative incentive rates

The incentive rates that we are subject to are an important factor in the decisions that we make; our financial performance and our risk-return balance; and the amount of capital that we have to invest for customers. It is therefore important that the ODI regime, including incentive rates, at PR24 is well designed. Carefully reviewing Ofwat's indicative incentive rates with this in mind raised a number of concerns.

First, we are concerned with the indicative incentive rates proposed because they increase the risk that is placed upon us to an inappropriate degree. In our PR19 customer research on ODIs, we found that customers struggled with the concept of ODIs and the link to bills on the one hand, and company profits on the other. Welsh Water's 'not for profit' model added to the confusion and concern of customers around the ODI framework. This is one of the reasons why we proposed an ODI RoRE range at PR19 that was towards the smaller end of Ofwat's recommended range.

The totality of risk should also be seen in the context of Ofwat's allowed equity return, which currently stands at a mid-point of 4.14%.[2] Whilst Ofwat considers that a notionally efficient company should have +/- 1% to +/-3% RoRE at risk for ODIs, it has not provided any robust evidence that its proposed incentive rates are consistent with this risk range. Specifically, it is not clear how the additive ranges for the PCs (of 4-5% for water and wastewater companies) align with this +/-1% to +/-3% range. Furthermore, given our customers' preferences, as outlined above, we would expect to be towards the lower end of any range.

Second, the increase in risk is driven by the fact that Ofwat's indicative rates are materially higher for a large proportion of PCs, compared to those that applied to us in PR19. Ofwat has not put

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[1]   On June 15th Ofwat shared Welsh Water's full set of rates, excluding river water quality. Rates for some PCs were shared in advance of this date. Ofwat shared its full suite of models on July 19th. A subset of models were shared on July 7th.

[2]   PR24 Final Methodology, Appendix 11 – Allowed return on capital, Ofwat, December 2022, page 55.

forward any compelling evidence why incentive rates should increase to the extent that it is proposing.

In addition to the above key concerns: (i) the substantial nature of the change in method, compared to Final Methodology position; (ii) the calculation errors that were subsequently corrected; and (iii) the fact that change occurred relatively late in the PR24 process. We encourage Ofwat to consider the appropriateness of financially incentivising companies (through the QAA) to adopt Ofwat's 'indicative' rates, particularly given the level of uncertainty as to what the final rates will be.

4. An independent review of Ofwat's indicative rates

Given our concerns, and in view of Ofwat's suggestion that companies submit with their PR24 plans a critique of Ofwat's methodology on ODI rates, we commissioned Economic Insight to:

- undertake a critique of Ofwat's approach;
- advise us on whether to adopt Ofwat's indicative rates or not (either on an individual PC basis, for example due to company-specific circumstances, or the whole set); and
- in the event of us not adopting Ofwat's incentive rates, advise us on what appropriate alternative approach could be used to determine our incentive rates.

As set out in their report (see ref WSH32), Economic Insight suggest that we should not accept any of Ofwat's indicative ODI rates at this time. The two principal reasons for this are as follows:

First, Ofwat's application of the top-down approach lacks reliability and robustness in assumptions made and data used. In particular:

- Ofwat's choice of the average amount of RoRE to allocate to each PC (0.5% RoRE) is arbitrary. Based on Ofwat's logic and the evidence it presented, it could have selected a materially different number.
- The alignment between the customer research Ofwat has relied on and the definitions of PCs is weak. The amount of RoRE that Ofwat has initially allocated to each PC is therefore highly subjective.
- A number of issues have been identified related to the performance ranges Ofwat has used to divide its selected RoRE at risk over. Specifically, identified issues include: (i) unbalanced samples, whereby some companies contribute more observations and likely skew resulting performance ranges; (ii) small sample sizes, which means performance ranges are unlikely to be an accurate reflection of the full range of likely performance; and (iii) Ofwat's distribution for demand PCs (leakage, PCC, and business demand) is calculated based on an aggregation, which is not based on sound logic and is inconsistent with Ofwat's broader approach. Ofwat also makes arbitrary choices in relation to the performance range used for asset health measures (in order increase the median unit rate by a specific amount).

Second, Ofwat's approach does not provide consistency over time, and therefore damages long-term incentive properties. For ODIs to be most effective, there needs to be a degree of consistency between price controls. This is because material changes in incentive rates between price controls will both: (i) damage the credibility and incentive power of the PR24 rates; and (ii) more widely damage incentive power and increase regulatory risk, because investment decisions over PR19 will have been based on the PR19 rates and an expectation that they will not change significantly between price controls. However, Ofwat's indicative ODI rates for PR24 differ materially from those set at PR19 – and there is no compelling evidence that Ofwat's indicative rates for PR24 are more appropriate than those at PR19 (either because the method used objectively better reflects the

benefits and costs of delivering performance; and / or because benefits and costs have changed since PR19). Ofwat's indicative rates would also likely increase the amount of RoRE that would be at risk from ODIs at PR24, and there is no evidence that this should be the case.

Economic Insight is also concerned that Ofwat's top-down approach lacks a conceptual basis, and that it is not designed to result in incentive rates that will encourage companies to focus their efforts in the right areas. However, we consider that a top-down approach is a pragmatic solution given the inherent challenges of bottom-up approaches.

As a result of their review, Economic Insight suggest that either: (i) PR19 incentive rates are broadly retained, where possible; or (ii) Ofwat's top-down approach is adjusted (or some combination of the two). This is because:

- Using the PR19 incentive rates will provide consistency and therefore support the incentive power of the ODI regime. Given the limitations in Ofwat's approach, there is no reason to believe it objectively provides better incentive rates than those set at PR19. The PR19 rates were also, in general, based on a bottom-up approach that in-principle gives rates that encourage companies to focus their efforts in the right areas.[3] Nevertheless, questions have been raised about the PR19 rates given the variation between the rates that were proposed by companies. Therefore, company-specific PR19 rates could be retained, or alternatively industry average PR19 could be adopted. In any case, adjustments would have to be made for inflation and growth in e.g. customer numbers / connections.
- Adjusting Ofwat's top-down approach can: (i) ensure a degree of consistency across companies, in line with one of Ofwat's key objective for the outcomes framework at PR24; whilst (ii) addressing some of the issues with Ofwat's indicative approach – specifically in terms of consistency over time, and reliability and robustness issues. Economic Insight also note that parameter choices can also be selected to ensure a degree of consistency with the PR19 rates.

5. Calculation of alternative incentive rates

Our decision to propose alternative rates

Based on our concerns, and Economic Insight's independent review, we have not adopted Ofwat's indicative incentive rates; and instead propose an alternative set. The key reasons for this decision are as follows:

- Ofwat's indicative rates increase the level of risk that we are exposed to, and this is not consistent with the views of our customers. Ofwat's rates also do not appear to be consistent with its view of a +/-1% to +/-3% RoRE risk range.
- Ofwat's indicative incentive rates are materially higher than our rates from PR19, which distorts the incentives that we face. Given the limitations in Ofwat's approach, there is no reason to believe that its indicative PR24 rates are superior to the PR19 rates. As such, we consider that a high evidential bar would be required to deviate from the PR19 rates to the extent that Ofwat is proposing – and no such evidence has been provided.

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[3]   Welsh Water adopted a top-down approach in the rates that it proposed. These were subsequently subjected to Ofwat's triangulation approach / application of a 'reasonable range'.

- Ofwat's approach lacks reliability and robustness in relation to the calculation of certain parameters, including the initial RoRE at risk per PC and the performance distributions for certain PCs.

Our approach to developing a new set of rates

We propose an alternative set of incentive rates based on a modified version of Ofwat's top down approach. We apply this approach to all PCs, except for combined sewer overflows, biodiversity, and greenhouse gas emissions, for which we put forward separate proposals. Please see Section 5 for further details for the rates we are proposing for these PCs.

We agree with Ofwat that a top-down approach is appropriate because: (i) there are inherent challenges of a bottom-up approach in terms of accurately estimating marginal benefits and marginal costs, and we (and likely other companies) have not undertaken new customer research to form the basis of an alternative approach; (ii) a top-down approach can be used to target an overall RoRE risk range; and (iii) a top-down approach can provide a degree of consistency across companies.

Our proposed alternative top-down approach is closely aligned with Ofwat's. We make a number of adjustments to the assumptions and data used to address the reasons why we have rejected Ofwat's rates. Specifically:

- We have reduced the starting percentage of RoRE at risk per PC from Ofwat's average of 0.5% RoRE to 0.35% RoRE. This is to more closely align the total amount of RoRE at risk with our position at PR19, Ofwat's view of +/- 1% to +/-3% RoRE risk on ODIs , and our customers' preferences.
- To address the reliability and robustness issues in Ofwat's performance ranges, we have made a series of adjustments on a PC by PC basis. These account for: (i) unbalanced samples; (ii) small sample sizes; and (iii) the calculation of the distributions for demand PCs. We nevertheless recognise that, given the small number of observations available (even when samples are reasonably expanded), historical observations will always be an imprecise approach to assessing the range of performance risk that companies face in the future.
- Once the above adjustments have been made, we then use the industry average PR19 rates for each PC as a cross-check, to ensure that there is a level of consistency in rates over time. Specifically, we cap the rates for each PC at a + / - 25% change compared to the PR19 average rate.

The historical data used to calculate our proposed alternative set of rates also includes 2022/23 data (which was not available to Ofwat when it calculated its rates).

Below, we detail our proposed alternative approach (adapted top-down) in terms of the changes that we have made to: (i) the starting RoRE at risk for each PC; and (ii) the performance distributions used to divide RoRE at risk over; and (iii) the caps we have implemented in relation to the variance of the rates produced compared to the PR19 rates.

Adjustment 1: starting percentage of RoRE per PC

To reduce the total amount of RoRE at risk, we have reduced the initial RoRE allocated to each PC. Ofwat starts with 0.5% RoRE, and we have reduced this to 0.35%.   Furthermore, where Ofwat has allocated 'lower importance' and 'higher importance' PCs 0.4% and 0.6% RoRE, we have instead used 0.3% and 0.4% RoRE. This is detailed in the table below.

Table 1: RoRE initially allocated to each PC

	Ofwat's approach	Our approach
Lower importance PCs	0.4%	0.3%
Medium importance PCs	0.5%	0.35%
Higher importance PCs	0.6%	0.4%

Whereas Ofwat supported its 0.5% RoRE as the mid-point between the UQ and P90 of hypothetical historical ODI payments per PC, 0.35% is around the UQ level on Ofwat's analysis. That is, 0.35% would be an equally arbitrary choice based on results of Ofwat's analysis – but helps ensure an appropriate among of RoRE at risk.

Adjustment 2: Performance range calculations

Our draft alternative incentive rates also include changes to a number of performance ranges. These reflect the following main issues that Economic Insight identified in relation to the reliability and robustness of performance ranges.

- **First, that Ofwat uses an unbalanced data sample.** Economic Insight identified that Ofwat has used more years of data for some companies than others. This means that greater weight is placed upon the performance data of companies who have more years included within the sample, which may lead to a sample selection bias.
- **Second, that the data sample Ofwat has used is too limited.** Some PCs are calculated with only a few years of data. This means that the performance range is not robust and is unlikely to reflect the full range of likely performance. For example, if only 2 years' worth of data are included, it is unlikely that the sample will include the effect of a 1-in-10 year weather event.
- **Third, that there are a number of issues relating to Ofwat's decision to aggregate all the demand PCs.** Ofwat's approach is not based on sound logic and is inconsistent with its broader approach.

Given the above issues, we have applied the following adjustments to Ofwat's P90 ranges:

- We have balanced the data sample by making maximum use of the company performance data available. Ofwat's data sample is unbalanced because not all companies have PCLs for some years. We have therefore balanced the data by estimating proxy PCLs for companies who do not have one – we have done so using Ofwat's methodology.[4] We have then recalculated the P90 over a longer time period.
- The above method also increases the data sample used to estimate P90s. This allows us to address the limited sample size issue at the same time.
- We have calculated individual performance ranges for PCC, leakage and business demand.
- We have included the most recent year of data (2022-23) in our P90 calculations. This represents an additional year of data to that available to Ofwat when it set its indicative rates.

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4   Proxy PCLs are calculated by using the industry upper quartile performance for each year, e.g. a proxy PCL for internal sewer flooding in 2021/22 would be equal to the upper quartile performance across all firms in 2021/22.

In the table below, we present Ofwat's original P90 performance range and our updated estimates.

Table 2: Recalculated P90 levels

PC	Ofwat Performance Range	Updated Performance Range
Internal sewer flooding	95%	107%
External sewer flooding	18%	31%
Bathing water quality	4%	6%
Customer contacts	123%	117%
CRI	6.54	6.63
Water supply interruptions	122%	366%
Mains repairs	20%	20%
Unplanned outage	130%	130%
Sewer collapse	100%	100%
Total pollution incidents	41%	41%
Leakage	5%	10%
PCC	5%	14%
Business demand	5%	16%
River water quality	N/A	N/A
Discharge permit compliance - WaSCs	2.53	2.50
Serious pollution incidents	1.3	1.3

Source: Economic Insight analysis of 'Ofwat - top-down ODI rates - full models'. Note: updated P90s use 2022/23 data.

Adjustment 3: Capping the ODI rate change at + / - 25% compared to PR19

Our final step has been to cross-check the rates produced after implementing the above two adjustments against the industry average ODI rates that were set at PR19. This is to ensure that material changes in rates between regulatory periods are limited and thus the incentive power of the ODI regime is not compromised.

To do this, we have capped the change in the rate of each ODI compared to the industry average PR19 rate by + / - 25%. This adjustment has only been possible where there are equivalent PCs at PR19, and as a result, we have not been able to undertake this cross check for bathing water quality; serious pollution incidents; business demand; and river water quality.

To calculate the industry average PR19 rate for each ODI (to ensure comparability to our proposed adjusted PR24 rates), we have:

- Adjusted the price base of the PR19 ODI rates from 2017/18 prices to 2022/23 prices.
- Converted the PR19 ODI rates into unit rates using the PR19 normalisation parameters,[5] e.g. for internal sewer flooding we divide the PR19 ODI rate by the number of sewer connections used to calculate PR19 rates.
- Calculated the median PR19 unit rate across all companies.
- Converted this unit rate into a comparable ODI rate with PR24 using the PR24 normalisation parameters, e.g. for internal sewer flooding we multiply the median PR19 unit rate by the number of sewer connections Ofwat has used to calculate its PR24 rates.

6. Proposed alternative rates

The table below sets out our proposed rates, based on the adapted top-down approach explained above. We present both our proposed rates after completing adjustments 1 and 2; and our final proposed rates, having applied the + / - 25% cap to the change compared to the industry average PR19 rate for each ODI. This is to illustrate for which PCs the cap 'bites'.

We also include Ofwat's proposed indicative rates for comparison.

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[5]   For discharge permit compliance and unplanned outages the PR19 normalisation parameters are unavailable so we use the PR24 normalisation parameters instead.

Table 3: Our proposed rates

	Average PR19 rates	Ofwat's PR24 indicative rates	Our proposed rates (pre-cap)	Our proposed rates (cap of + / - 25%)
Internal sewer flooding	5.50	6.51	3.86	**4.12**
External sewer flooding	1.06	2.91	1.15	**1.15**
Bathing water quality	NA	5.93	2.78	**2.78**
Customer contacts	2.54	8.21	5.74	**3.18**
CRI	0.77	0.82	0.54	**0.58**
Water supply interruptions	0.55	0.88	0.16	**0.42**
Mains repairs	0.15	0.24	0.15	**0.15**
Unplanned outage	1.24	1.58	1.15	**1.15**
Sewer collapse	0.29	0.80	0.56	**0.36**
Total pollution incidents	0.32	0.83	0.58	**0.40**
Serious pollution incidents	NA	1.14	0.80	**0.80**
Discharge permit compliance	1.83	4.40	3.12	**2.29**
Leakage	0.24	0.36	0.23	**0.23**
PCC	0.18	1.12	0.14	**0.14**
Business demand	NA	0.36	0.11	**0.11**
River water quality	NA	0.0007	0.0005	**0.0005**

Source: Economic Insight analysis of 'Ofwat - top-down ODI rates - full models'. Note: Ofwat does not use P90 values for mains repair and unplanned outages PCs.

As shown, our + / - 25% cap on the change compared to the average PR19 rate comes into effect for 7 PCs: internal sewer flooding; customer contacts; CRI; supply interruptions; sewer collapse; total pollution incidents; and discharge permit compliance.

7. Additional PCs

This section covers ODI rates for the following additional PCs: (i) CSO Harm (bespoke); (ii) CSO spills; (iii) greenhouse gas emissions; and (iv) biodiversity.

The reasons for our separate proposals, and the specific set of ODI rates we are putting forward, are detailed for each PC in turn.

i) CSO Harm

In line with Welsh Government policy and PR24 Forum's Strategic Steers, we are proposing that we should be incentivised to maximise reduction in harm to the environment rather than simply spill count reduction.

"We expect DCWW's performance on SOs to be monitored **and incentivised** based on reducing ecological harm and not on average spill numbers. Reductions in the numbers of spills are welcome but are not in themselves the priority for action, which should be focused on identifying and addressing SOs causing the greatest impact on the environment." (PR24 Strategic Steers – see ref WSH38).

We therefore propose ODI rates for our 'bespoke' CSO harm PC. Our bespoke performance commitment and ODI rates have been submitted alongside our business plan in our "WSH201-Additional BP Tables.xlsx". The additional BP table OUT7 outlines our proposed ODI rate for CSO harm. To calculate the ODI rate we have followed Ofwat's high level approach for the 'indicative' ODI rates. Ofwat's ODI proposals assigned CSO spills as of medium level importance and therefore a RoRE of 0.35% has been assigned to the performance commitment in line with our approach set out in table 1.

The ODI rate is calculated by dividing the regulatory equity at risk of £35.9m by the performance range. The performance range is based on a P10 value based on a scenario in which no improvement on the measure is achieved over the AMP.

	25-26	26-27	27-28	28-29	29-30	Total
Target	52.9%	53.3%	55.9%	58.4%	61.0%	
P10 Performance (%)	52.9%	52.9%	52.9%	52.9%	52.9%	
Deviation from Target (%)	0.0%	0.4%	3.0%	5.5%	8.1%	
ODI Rate (£m per %)	2.12					

ii) CSO Spills

As a consequence of the above, the common CSO spills measure (the common performance commitment based on spills) should have a zero ODI rate (i.e. a reputational ODI).

iii) Greenhouse gas emissions

For greenhouse gas emissions, Ofwat has not provided indicative PR24 rates based on its revised top-down approach. Ofwat has instead invited companies to put forward rates for this PC as part of their business plan, should they wish.

In our view, it is appropriate to calculate rates for this PC using the 'cost of' carbon values as calculated by BEIS. These values are based on a 'marginal abatement approach', whereby the value of carbon is set at the level consistent with the level of abatement costs required to reach the net

zero targets that the UK has adopted. In addition, this value is measured in £s per TC02e, consistent with the PC definition. Therefore we have proposed a rate of £309 per TC02e[6] .

iv) Biodiversity

Again, here Ofwat's methodology states that the ODI rate for this PC will be based on external valuations. We do not have a view at this time on the appropriate unit rate, we would welcome the opportunity to work with Ofwat over the coming months on the ODI rate.

8. Comparison of Welsh Water and Ofwat 'indicative' ODI rates

The graph below provides an illustration of the potential outperformance and underperformance payments that we could expect to incur with a 10% probability over the AMP (2025-30), further information on the calculation of these amounts is provided in Section 9. The graph compares our ODI rates alongside Ofwat's indicative ODI rates.

The graph shows an overall reduction in the ODI rates arising from our proposed rates, resulting in a lower RoRE risk, though it remains within Ofwat's suggested range.

The chart also shows that for certain measures Ofwat's indicative ODI rates put a very large amount of revenue at risk for certain performance commitments, notably PCC, bathing water quality and river water quality.

Outperformance and Underperformance Payment Range (£m)

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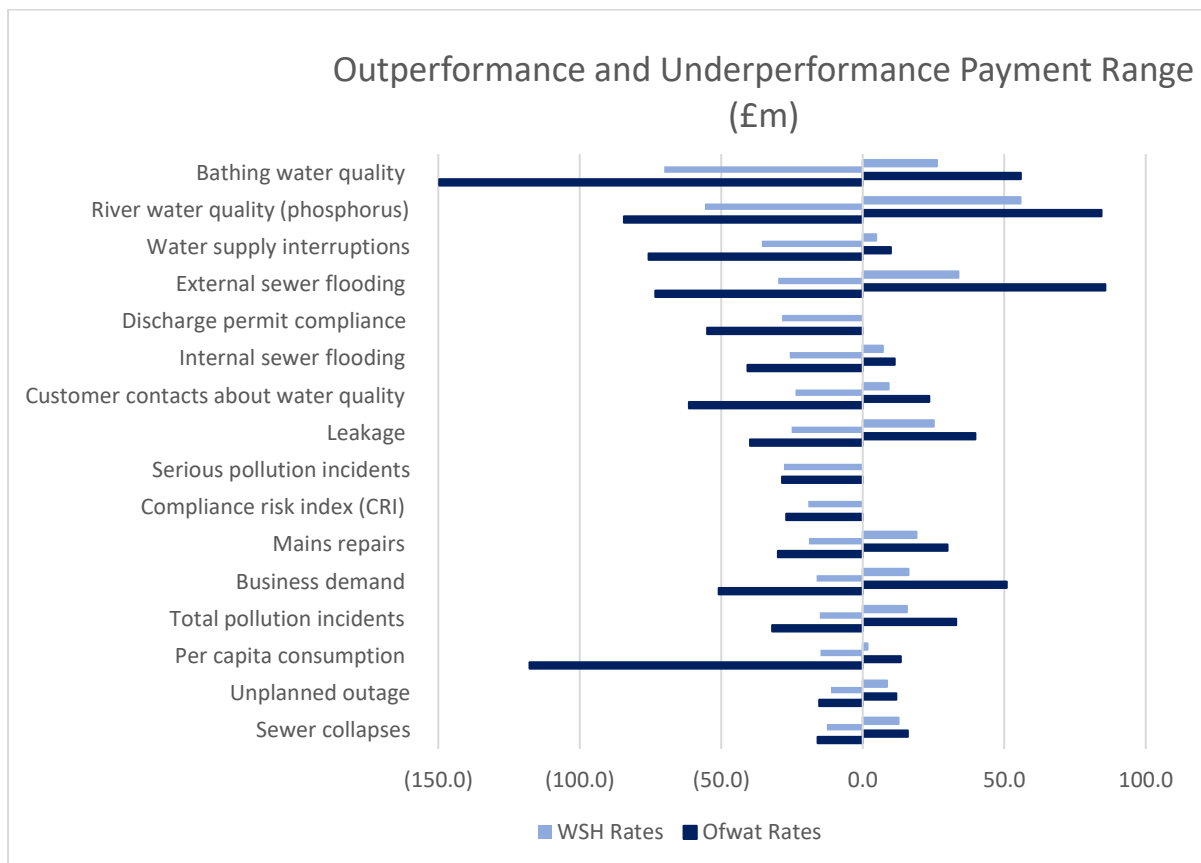
9. Analysis of RoRE range

The RoRE range expresses the potential range of outperformance and underperformance payments as a percentage of the regulatory equity at the notional gearing level. The potential payments are examined at a 'P10' and 'P90' level of performance, which reflect a positive and negative performance level judged to be consistent with a probability of 10% (or '1 in 10 years') above or below the targeted level.

Ofwat has indicated an expectation that the range of ODI outperformance payments and underperformance payments will be in the range of +/-1% to +/- 3% RoRE.

Calculation of the RoRE Range

The table below provides an estimate of the RoRE range for underperformance and outperformance payments that could be achieved per year for all of the ODIs. The RoRE range is calculated by calculating the outperformance and underperformance payments at the P10 and P90 performance level. The RoRE range is calculated using an additive approach across the performance commitments.

	2025-26	2026-27	2027-28	2028-29	2029-30	AMP Average
ODIs- High Scenario (£m)	43.5	50.6	56.1	63.6	74.0	57.5
ODIs- Low Scenario (£m)	(85.5)	(92.9)	(98.4)	(105.8)	(112.2)	(99.0)

Average Regulated Equity (£m)	3,212	3,333	3,485	3,623	3,707	3,472

	2025-26	2026-27	2027-28	2028-29	2029-30	AMP Average
ODIs- RoRE High Scenario (%)	1.4%	1.5%	1.6%	1.8%	2.0%	1.6%
ODIs- RoRE Low Scenario (%)	(2.7%)	(2.8%)	(2.8%)	(2.9%)	(3.0%)	(2.8%)

2022-23 Prices

Performance Distributions

The RoRE is calculated by examining the P10 and P90 level of performance. The P10 level is the point at which there is a 10% probability of performance being worse, and the P90 level is the point at which there is a 10% probability of performance being better than the target. A two-stage approach is used to calculate the P10 and P90 level of performance.

Step 1: The first step for the calculation of the P10s and P90s draws on the approach used by Ofwat to set the 'indicative' ODI rates.

- Take a historical data set of the percentage variances between target and actual performance, for each company for a particular PC.
- Take the upper 'decile' (P90) and the lower 'decile' (p10) of that set of percentage performance variances.
- Apply that percentage variation to the forward-looking targets to generate a P90 and P10.

New performance ranges

PC	New P10	New P90	New performance range
Internal sewer flooding	-107%	30%	107%
External sewer flooding	-27%	31%	31%
Bathing water quality	-6%	2%	6%
Customer contacts	-117%	45%	117%
CRI	-6.63	-0.33	6.63
Water supply interruptions	-366%	48%	366%
Mains repairs			20%
Unplanned outage			130%
Sewer collapse			100%
Total pollution incidents	-40%	41%	41%
Storm overflows	-36%	39%	39%
Leakage	1%	10%	10%
PCC	-14%	2%	14%
Business demand	-3%	16%	16%
River water quality			29%
Discharge permit compliance - WaSCs	-2.50	-0.28	2.50
Serious pollution incidents	-1.34	1.08	1.34

The performance range data is available in our "WSH123-ODI Rates Calculation Model.xlsx" which updates Ofwat's indicative ODI data, including updating for 2022-23 data.

Step 2: The first stage of the process relies on a relatively short timeseries of historical data. The approach also takes the P10 and P90 of the data. If there is only a limited number of observed P10 and P90 results, such as a 1 in 10-year storm, then the approach may not appropriately reflect a 1 in 10 year event. Expert judgement is used to review the results to determine whether they reflect appropriate P10s and P90s. An adjustment has been to 4 out of the 16 performance measures.

- Leakage - the historical data indicates that the P10 performance range is a 1% deviation. As a result of the 2022/23 freeze thaw event, our performance deviation from target was 11.5%. The approach of taking the P10 of the historical data does not sufficiently report the potential performance deviations. Therefore, the maximum of the P10 and P90 performance range has been used which is in line with our experiences from 2022-23.
- Business Demand - the historical data indicates a P10 deviation of 3% from the target. The period of the data considered was influenced by COVID-19 which substantially reduced business demand. The performance deviation has been calculated based on the maximum of the P10 and P90 deviation.
- Serious pollution incidents - the Ofwat approach produced a P10 of 5 incidents. The P10 has been reviewed against historical data which would show that this level would have been exceeded for 3 out of the last 10 years. To ensure the P10 represents the risk, this has been widened to 7 pollution incidents.

		AMP8 Average		
		Target	P90	P10
Water supply interruptions	Time	00:04:42	00:21:54	00:02:26
Compliance risk index (CRI)	score	0.0	6.6	N/A
Customer contacts about water quality	Contacts per 1,000 population	1.3	2.8	0.7
Internal sewer flooding	Incidents per 10,000 connections	1.2	2.4	0.8
External sewer flooding	Incidents per 10,000 connections	19.0	24.0	13.1
Operational greenhouse gas emissions (water)	Tonnes	19,374	28,433	14,999
Operational greenhouse gas emissions (wastewater)	Tonnes	55,914	64,882	49,784
Leakage	% change from 2019/20 baseline	14%	4%	24%
Per capita consumption	% change from 2019/20 baseline	5%	-10%	6%
Business demand	% change from 2019/20 baseline	5%	-11%	21%
Total pollution incidents	Incidents per 10,000 km of Sewer	19.1	26.7	11.2
Serious pollution incidents	Number	0.0	7.0	N/A
Discharge permit compliance	%	100.0%	97.5%	N/A
Bathing water quality	%	89%	84%	91%
River water quality (phosphorus)	%	22%	29%	16%
Mains repairs	Bursts per 1,000km of mains	124.8	149.7	99.8
Unplanned outage	score	2%	3%	0%
Sewer collapses	Collapses per 1,000km of sewer	7.0	14.0	0.0
CSO Harm	%	58%	54%	61%

RoRE

The total AMP8 underperformance and outperformance payments at the P10 and P90 are reported in the table below. The table shows the breakdown of the +1.7% and -2.9% RoRE by performance commitment.

	WSH Rates	
	AMP8 Total P10 Underperformance Payments (£m)	AMP8 Total P90 Outperformance Payments (£m)
Water supply interruptions	(35.7)	4.7
Compliance risk index (CRI)	(19.2)	N/A
Customer contacts about water quality	(23.8)	9.1
Internal sewer flooding	(25.8)	7.2
External sewer flooding	(29.8)	33.8
Operational greenhouse gas emissions (water)	(14.0)	6.8
Operational greenhouse gas emissions (wastewater)	(13.9)	9.5
Leakage	(25.1)	25.1
Per capita consumption	(14.9)	1.7
Business demand	(16.3)	16.2
Total pollution incidents	(15.2)	15.6
Serious pollution incidents	(27.9)	N/A
Discharge permit compliance	(28.6)	N/A
Bathing water quality	(70.2)	26.2
River water quality (phosphorus)	(55.8)	55.8
Mains repairs	(19.0)	19.0
Unplanned outage	(11.2)	8.6
Sewer collapses	(12.7)	12.7
CSO Harm	(35.9)	35.9

Total	(494.9)	287.7
Average Regulatory Equity (£m)	3,472.0	3,472.0
Average RoRE per Year	(2.84%)	1.65%

10.   Annex- Calculation of P10s and P90s for each performance commitment

PR24_WSI: Water Supply Interruptions

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	HH:MM:SS		00:04:54	00:04:48	00:04:42	00:04:36	00:04:30
P10	HH:MM:SS	366%	00:22:50	00:22:22	00:21:54	00:21:26	00:20:58
P90	HH:MM:SS	48%	00:02:32	00:02:29	00:02:26	00:02:23	00:02:20

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.415	£415k per Customer Minute
Outperformance Rate	0.415	£415k per Customer Minute

	£m		2025/26	2026/27	2027/28	2028/29	2029/30
Underperformance Payment at P10	£m		(7.4)	(7.3)	(7.1)	(7.0)	(6.8)
Outperformance Payment at P90	£m		1.0	1.0	0.9	0.9	0.9

Frequency of measurement	Annual
Price Control Allocation	100% Water Network Plus

PR24_CRI: Compliance Risk Index (CRI)

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Score		0.0	0.0	0.0	0.0	0.0
Deadband			2.0	2.0	2.0	2.0	2.0
P10	Score	6.63	6.63	6.63	6.63	6.63	6.63

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.579	£579k per Unit

	£m		2025/26	2026/27	2027/28	2028/29	2029/30
Underperformance Payment at P10	£m		(3.8)	(3.8)	(3.8)	(3.8)	(3.8)

Frequency of measurement	Annual
Price Control Allocation	100% Water Network Plus

PR24_WQC: Customer contacts about water quality

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Contact per 1,000		1.48	1.38	1.27	1.16	1.00
P10	Residential	117%	3.21	3.21	3.00	2.76	2.52
P90	Population	45%	0.82	0.76	0.70	0.64	0.61

ODI Operator	£m/Unit	Comment
Underperformance Rate	3.180	£3.18m per 1,000 Contacts
Outperformance Rate	3.180	£3.18m per 1,000 Contacts

	£m		2025/26	2026/27	2027/28	2028/29	2029/30
Underperformance Payment at P10	£m		(5.5)	(5.1)	(4.7)	(4.3)	(4.1)
Outperformance Payment at P90	£m		2.1	2.0	1.8	1.7	1.6

Frequency of measurement	Annual
Price Control Allocation	100% Water Network Plus

PR24_ISF: Internal Sewer Flooding

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Incidents per		1.28	1.22	1.17	1.12	1.07
P10	10,000 sewer	107%	2.64	2.53	2.42	2.32	2.21
P90	connections	30%	0.90	0.86	0.82	0.79	0.75

ODI Operator	£m/Unit	Comment
Underperformance Rate	4.122	£4.12m per Incident per 10,000 Sewer Connections
Outperformance Rate	4.122	£4.12m per Incident per 10,000 Sewer Connections

	£m						
Underperformance Payment at P10	£m		(5.6)	(5.4)	(5.2)	(4.9)	(4.7)
Outperformance Payment at P90	£m		1.6	1.5	1.4	1.4	1.3

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network Plus

PR24_ESF:External Sewer Flooding

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Incidents per		20.45	19.69	18.95	18.20	17.47
P10	10,000 sewer	27%	25.88	24.92	23.98	23.03	22.11
P90	connections	31%	14.10	13.58	13.06	12.55	12.05

ODI Operator	£m/Unit	Comment
Underperformance Rate	1.149	£1.15m per Incident per 10,000 Sewer Connections
Outperformance Rate	1.149	£1.15m per Incident per 10,000 Sewer Connections

	£m						
Underperformance Payment at P10	£m		(6.2)	(6.2)	(6.0)	(5.8)	(5.6)
Outperformance Payment at P90	£m		7.3	7.0	6.8	6.5	6.2

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network Plus

PR24_OGW: Operational greenhouse gas emissions (water)

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target			20,730	20,052	19,374	18,696	18,020
P10	Tonnes		25,901	27,090	28,281	29,473	31,419
P90			19,271	17,135	14,998	12,862	10,727

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.000309	£309 per Tonne
Outperformance Rate	0.000309	£309 per Tonne

	£m						
Underperformance Payment at P10	£m		(1.6)	(2.2)	(2.8)	(3.3)	(4.1)
Outperformance Payment at P90	£m		0.5	0.9	1.4	1.8	2.3

Frequency of measurement	Annual
Price Control Allocation	15% Water Resources, 85% Water Network+

PR24_OGWW: Operational greenhouse gas emissions (wastewater)

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target			57,001	56,457	55,914	55,370	54,827
P10	Tonnes		61,332	63,030	64,731	66,431	68,883
P90			55,958	54,370	52,784	51,196	34,610

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.000309	£309 per Tonne
Outperformance Rate	0.000309	£309 per Tonne

	£m						
Underperformance Payment at P10	£m		(1.3)	(2.0)	(2.7)	(3.4)	(4.3)
Outperformance Payment at P90	£m		0.3	0.6	1.0	1.3	6.2

Frequency of measurement	Annual
Price Control Allocation	85% Wastewater Network+ 15% Bioresources

PR24_LEA: Leakage

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target			7%	14%	15%	17%	18%
P10	%	10%	(3%)	3%	5%	6%	8%
P90		10%	17%	24%	25%	27%	29%

ODI Operator	£m/Ml/D	Comment
Underperformance Rate	0.227	£227k per Ml/D
Outperformance Rate	0.227	£227k per Ml/D

	£m						
Underperformance Payment at P10	£m		(5.0)	(5.0)	(5.0)	(5.0)	(5.0)
Outperformance Payment at P90	£m		5.0	5.0	5.0	5.0	5.0

Frequency of measurement	Annual

PR24_PCC: Per Capita Consumption

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target			2.3%	3.3%	4.6%	6.0%	7.4%
P10	%	14.4%	(12.2%)	(11.2%)	(9.8%)	(8.4%)	(7.0%)
P90		1.7%	3.9%	4.9%	6.3%	7.7%	9.0%

ODI Operator	£m/Ml/D	Comment
Underperformance Rate	0.142	£142k per l/p/d
Outperformance Rate	0.142	£142k per l/p/d

	£m						
Underperformance Payment at P10	£m		(3.0)	(3.0)	(3.0)	(3.0)	(3.0)
Outperformance Payment at P90	£m		0.3	0.3	0.3	0.3	0.3

Frequency of measurement	Annual
Price Control Allocation	50% Water Resources 50% Water Network+

PR24_NHH: Business Demand

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target			4%	5%	5%	5%	5%
P10	%	16%	(12%)	(11%)	(11%)	(11%)	(11%)
P90		16%	20%	21%	21%	21%	21%

ODI Operator	£m/Ml/D	Comment
Underperformance Rate	0.114	£114k per Ml/D
Outperformance Rate	0.114	£114k per Ml/D

Underperformance Payment at P10	£m		(3.3)	(3.3)	(3.3)	(3.3)	(3.3)
Outperformance Payment at P90	£m		3.2	3.2	3.2	3.2	3.2

Frequency of measurement	Annual
Price Control Allocation	50% Water Resources 50% Water Network+

PR24_POL: Pollution Incidents

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Incidents per		19.31	19.31	19.04	19.04	18.76
P10	10,000 km of	40%	27.04	27.04	26.66	26.66	26.27
P90	Sewers	41%	11.35	11.35	11.19	11.19	11.03

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.397	per Incident per 10,000km of Sewers
Outperformance Rate	0.397	per Incident per 10,000km of Sewers

Underperformance Payment at P10	£m		(3.1)	(3.1)	(3.0)	(3.0)	(3.0)
Outperformance Payment at P90	£m		3.2	3.2	3.1	3.1	3.1

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network+

PR24_SPL: Serious Pollution Incidents

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Number		-	-	-	-	-
P10			7.00	7.00	7.00	7.00	7.00

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.797	£797k per Incident

Underperformance Payment at P10	£m		(5.6)	(5.6)	(5.6)	(5.6)	(5.6)

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network+

PR24_DPC: Discharge Permit Compliance

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	%		100.00	100.00	100.00	100.00	100.00
P10		2.5%	97.50	97.50	97.50	97.50	97.50

ODI Operator	£m/Unit	Comment
Underperformance Rate	2.285	£2.285m per %

	£m						
Underperformance Payment at P10			(5.7)	(5.7)	(5.7)	(5.7)	(5.7)

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network+
Form of Incentive	Revenue
Timing of outperformance and underperformance payments	In-period

PR24_BQW: Bathing Water Quality

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target			88.9%	88.9%	88.9%	88.9%	88.9%
P10	%	5.6%	83.9%	83.9%	83.9%	83.9%	83.9%
P90		2.1%	90.8%	90.8%	90.8%	90.8%	90.8%

ODI Operator	£m/Unit	Comment
Underperformance Rate	2.782	£2.782m per %
Outperformance Rate	2.782	£2.782m per %

	£m						
Underperformance Payment at P10			(13.9)	(13.9)	(13.9)	(13.9)	(13.9)
Outperformance Payment at P90			5.2	5.2	5.2	5.2	5.2

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network+

PR24_RWQ: River Water Quality

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target			11%	23%	24%	27%	27%
P10	%	29%	15%	30%	30%	35%	35%
P90		29%	8%	17%	17%	19%	19%

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.000463	£462 per kg
Outperformance Rate	0.000463	£462 per kg

	£m						
Underperformance Payment at P10			(5.6)	(11.7)	(11.7)	(13.4)	(13.4)
Outperformance Payment at P90			5.6	11.7	11.7	13.4	13.4

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network+

PR24_MRP: Mains Repairs

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Bursts per 1,000km of Mains		127.2	125.9	124.8	123.6	122.4
P10		20%	152.7	152.7	151.1	149.7	148.3
P90		20%	101.78	100.71	99.80	98.87	97.90

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.152	per burst per 1,000km of mains
Outperformance Rate	0.152	per burst per 1,000km of mains

	Unit		2025/26	2026/27	2027/28	2028/29	2029/30
Underperformance Payment at P10	£m		(3.9)	(3.8)	(3.8)	(3.8)	(3.7)
Outperformance Payment at P90	£m		3.9	3.8	3.8	3.8	3.7

Frequency of measurement	Annual
Price Control Allocation	100% Water Network+

PR24_UNO: Unplanned Outage

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	%		1.5%	1.5%	1.5%	1.5%	1.5%
P10		130%	3.5%	3.5%	3.5%	3.5%	3.5%
P90		130%	0.0%	0.0%	0.0%	0.0%	0.0%

ODI Operator	£m/Unit	Comment
Underperformance Rate	1.149	£1.15m per %
Outperformance Rate	1.149	£1.15m per %

	Unit		2025/26	2026/27	2027/28	2028/29	2029/30
Underperformance Payment at P10	£m		(2.2)	(2.2)	(2.2)	(2.2)	(2.2)
Outperformance Payment at P90	£m		1.7	1.7	1.7	1.7	1.7

Frequency of measurement	Annual
Price Control Allocation	100% Water Network+

PR24_SCO: Sewer Collapes

	Unit	Multiplier	2025/26	2026/27	2027/28	2028/29	2029/30
Business Plan Target	Collapses per 1,000km of Sewers		7.06	7.04	7.00	6.96	6.95
P10		100%	14.11	14.09	14.01	13.92	13.90
P90		100%	-	-	-	-	-

ODI Operator	£m/Unit	Comment
Underperformance Rate	0.362	per collpase per 1,000km of Sewers
Outperformance Rate	0.362	per collpase per 1,000km of Sewers

	Unit		2025/26	2026/27	2027/28	2028/29	2029/30
Underperformance Payment at P10	£m		(2.6)	(2.5)	(2.5)	(2.5)	(2.5)
Outperformance Payment at P90	£m		2.6	2.5	2.5	2.5	2.5

Frequency of measurement	Annual
Price Control Allocation	100% Wastewater Network+