
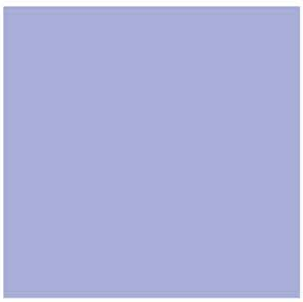









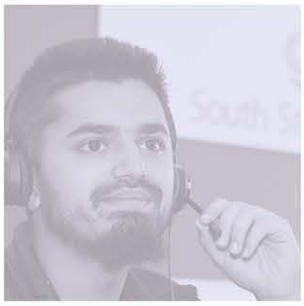

SSC20

Outcome delivery incentives risk range

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Supplementary appendices:

SSC20a: Oxera assessment of Ofwat's indicative ODI rates for PR24, September 2023

1. Outcome delivery incentive risk level

1.1 Introduction

For PR24, Ofwat has conducted sector-wide research into customer willingness to pay for the purposes of outcome delivery incentive (ODI) rate setting. This approach was selected to combat concerns from PR19 that differing methodologies across companies resulted in data which was difficult for Ofwat to benchmark. We supported the approach to undertake common research, but this type of research is complex and mapping of customer willingness to pay research to specific water sector outcomes is also complex. This is one of the reasons why there was variation across the sector at PR19, and is to be expected in complex research such as this. Ofwat has published a paper setting out its approach and the outcomes of this research on its website. The culmination of this research has been a set of ODI rates set on a top down basis against most of, but not all of, the common performance commitments. At the moment, greenhouse gas emissions and biodiversity are excluded and these ODI rates are expected at the draft determination stage.

Companies are required to use these ODI rates within their business plans as part of the quality gateway assessment, but are instructed to include any narrative that is required to raise concerns on these rates. We can confirm we have used the Ofwat derived marginal benefits and ODI rates when completing our business plan tables.

However we have serious concerns about these ODI rates. The absolute scale of the ODI rates is much larger than at PR19, and in conjunction with a package of performance commitments that is more stretching and includes several penalty-only measures, this results in a package significantly skewed to the downside and which presents a material risk to our financeability if penalties of this scale were to materialise.

Due to the willingness to pay research being undertaken centrally, which we still support as an approach, we do not have our own research data to demonstrate alternative rates that is compatible with these common performance commitments. However as Ofwat's approach has ultimately been a top down one, we believe there is scope within this process for additional calibration to ensure that the ODI rates being set, and the resultant risk profile, are appropriate to drive the right incentives for companies and to benefit customers, and are in line with the level of risk incorporated into the weighted average cost of capital.

1.2 Direct comparison of ODI rates from PR19 to PR24

The table below shows a direct comparison of the ODI rates that Ofwat proposes for the common performance commitments, compared to the rates for the equivalent PR19 measure. Most of these rates are between one and a half to four times greater than used at PR19, with some exceptions as shown below.

Table 1: ODI rates for equivalent performance commitments, PR19 compared to Ofwat's PR24 proposals, for SSC

		AMP7 incentives		AMP8 incentives		Scale difference
Performance commitment	**Units**	**Penalty**	**Reward**	**Penalty**	**Reward**	**compared to PR19**
CMEX	Score	-12% rev	12% rev	-18% rev	18% rev	1.5x
DMEX	Score	-12% rev	6% rev	unknown		?
BRMEX	Score			-1% rev	0.5% rev	New
Supply interruptions	mm:ss	-0.197	0.197	-0.450	0.450	2x
CRI	Score	-0.267	Pen only	-0.450	0.000	2x
Water quality contacts	Contacts per 1000 population	-1.083	0.902	-4.520	4.520	4x
Mains repairs	Nr/1000 km	-0.056	0.019	-0.080	0.080	1.5x / 4x
Unplanned outage	% of PWPC	-0.547	0.362	-0.720	0.720	1.5x / 2x
Biodiversity	Biodiversity units per 100km2 of land			unknown		New
Operational greenhouse gas emissions	Tonnes CO2e (primary)			unknown		New
Discharge permit compliance	% of WTW failed			-0.330	0.000	New
Serious polution incidents	Nr			-1.360	0.000	New
Leakage SST	Ml/d 3ya	-0.235	0.196	-0.360	0.360	1.5x
Leakage CAM	Ml/d 3ya	-0.254	0.211	-0.360	0.360	1.5x
PCC SST	l/p/d 3ya	-0.169	0.125	-0.630	0.630	4x
PCC CAM	l/p/d 3ya	-0.025	0.021	-0.630	0.630	25x
Business demand SST	Ml/d 3ya			-0.360	0.360	New
Business demand CAM	Ml/d 3ya			-0.360	0.360	New

The table above shows the incentive rates calculated by Ofwat, for SSC. However Ofwat has made available the ODI rates it has calculated for all companies. We asked Oxera to undertake a study of the sector's performance in the first three years of this price control period using both PR19 and proposed PR24 rates[1]. The sector as a whole is already in significant penalty on the common performance commitments, and these rates would amplify this penalty considerably. Including PCC, which has been a significant issue for the sector in the first three years of the period, Oxera found that the penalty position of the sector would increase by three times, from £357 million to £936 million. Excluding the impact of PCC, the impact is still material, going from £272 million to £353 million of penalty under the proposed rates.

1.3 Performance commitment assumptions used in this analysis

We have, in our business plan submission, forecasted our levels of performance against the common performance commitments. The tables do not ask us to set out what we think the performance targets should be – our understanding is Ofwat will examine the forecasts of each company, which include the ambition of each company, and determine the common target (if applicable) from this information.

However to assess the range of risk or opportunity we are exposed to in PR24, based on our plans for service improvement but also taking into account other factors and external challenges, we had to make some assumptions about what these targets and our performance would be. These assumptions are listed in table 2 below.

[1] Oxera report is included with our submission as appendix SSC20a.

Table 2: assumptions of PC targets and risk for PR24 based on our plans

Performance commitment	PC target and risk range assumption
CMEX	Ofwat is currently working to revise the approach to CMEX for PR24, so the future risk on this measure may be different to the current period where we have outperformed the industry median on CMEX. We have assumed an incentive range of +/- 18% of retail revenue, and projected that outperformance against the industry median continues to be possible for us over this future period.
DMEX	Ofwat is considering how to modify the DMEX incentive for PR24. At the moment we have assumed the same +6%, --12% as used at PR19. In the first three years of PR19 we have performed around the median level on DMEX. We aspire to improve on this in AMP8 and so we have included a bias towards outperformance in our analysis for DMEX.
BRMEX	As indicated in Ofwat's methodology, we have assumed +0.5% to -1% of wholesale business revenue for this performance commitment. Whilst this measure is new, we aspire to be a good performing company on this measure so we assume a bias towards outperformance within our analysis.
Supply interruptions	We are already a strong performer on supply interruptions, consistently being at or around the upper quartile of the sector. Going forward we have proposed further stretching reductions culminating at a performance level of 2 minutes 30 seconds by 2029/30. This is ahead of where we would expect Ofwat to set a common performance commitment target, which we would assume to broadly continue from the common performance commitment set at PR19. This assumption leads to an expectation of a performance commitment target of approximately 3 minutes and 8 seconds by 2029/30, aligned to industry upper quartile. As a strong performer already, we therefore set a bias towards outperformance within our analysis and we assume that Ofwat sets a target where it is feasible for outperformance to occur. We have also included the potential for enhanced rewards for supply interruptions, triggered at the current frontier performance level, and with an incentive rate at double the standard rate.
CRI	CRI is a volatile measure. As a compliance measure, its target is zero for all years, however in practice only a small minority of companies have achieved this and not consistently. In PR19 Ofwat allowed a deadband to reflect this expectation, at a CRI level of 2 points. In AMP8 we will continue to strive for full compliance against CRI, but in reality we do expect that some random failures will occur and if these failures occur at our larger works then we face significant exposure to penalty on this measure. In 2023/24, at the time of writing, we expect to incur penalty at the underperformance collar because of compliance failures at our largest works, Hampton Loade, that have recently occurred. Against PR19's incentive rates this will be a penalty of around £1.8m for 2023/24. To allow for expected small random sample failures, we believe a CRI deadband at 2 points should continue. Within our risk analysis we have set a risk range around this level, reflecting that achieving zero on CRI is unlikely and that we may vary from year to year between a position of being within and outside of deadband. CRI is also a penalty only measure, so there is by definition only downside risk associated with this metric, which given the doubling of the incentive rate is a significantly greater risk in AMP8.
Water quality contacts	In AMP7 we have made significant reductions of water quality contacts, outperforming our PR19 performance commitment which was a bespoke target for each company at PR19. Going forward, we understand Ofwat prefers a common target on this measure which we expect to be around the current upper quartile level. As an already strong performer on this measure, we aspire to reduce contacts even further in AMP8 and our ambition is therefore to approach or reach a frontier performance level. This assumes that it is feasible to achieve outperformance and so within our analysis we have made this assumption. However the range of risk around this assumption is large, as whilst we have had good performance in this period, it is very stretching to propose that our performance can continue to improve to a level around sector frontier. The achievement of frontier performance is our best case given how stretching it is, the median performance we would expect to be more in line with where an upper quartile target might be set. We have also included the potential for enhanced rewards for water quality contacts, triggered at the current frontier performance level, and with an incentive rate at double the standard rate.
Mains repairs	Mains repairs is sensitive to external weather conditions in any given year. In 2022/23, much of the industry showed a worsened performance due to the impact of a number of winter freeze thaw events. For this analysis we have forecast continuing to drive down bursts at the same rate as assumed in PR19's performance commitment, i.e we have continued at the same reduction profile as in PR19's targets. Achievement of this target is our central estimate for our risk analysis. However, the weather is volatile and when it impacts the sector it tends to impact it significantly, which means on average there is more downside risk than upside risk on this measure, it is not symmetrical, and we have built this asymmetry into our analysis.

Unplanned outage	At PR19 Ofwat set a common performance commitment for this measure. We have performed strongly against this target over the period and so we expect that Ofwat will look again at the appropriate level for this common target. Our performance has fluctuated around the 1% of PWPC level of unplanned outage, around the sector upper quartile, and we expect this to be a reasonable target for Ofwat to set in PR24. Note this is based on the PR19 definition, and Ofwat is proposing a change to this definition to remove all exclusion criteria from the measure. This change materially effects our reported value, lifting it from around the 1% level on average to around 4%. We expect risk on this measure to be reasonably symmetrical and within a reasonably narrow P10/P90 range. There are however, always risks that a material unplanned event could cause a much larger outage.
Discharge permit compliance	This is a new performance commitment for PR24, and is a compliance measure where our aspiration, and our expectation of the target, are for zero events. It is however a penalty only measure, so there is only downside risk associated with this metric.
Serious pollution incidents	This is a new performance commitment for PR24, and is a compliance measure where our aspiration, and our expectation of the target, are for zero events. It is however a penalty only measure, so there is only downside risk associated with this metric.
Leakage SST and Leakage CAM	We have two performance commitments for leakage, one for each region. We are targeting an ambitious leakage reduction in AMP8, of 15% in SST region and 20% in CAM region. These are beyond the level that the WRMP requires. These reductions are already very stretching, and predominantly assumed to be funded by base expenditure, as per the policy Ofwat set at PR19. We have put forward that the element of leakage reduction that goes beyond the WRMP level should be enhancement however. But regardless of how it is funded, this level of reduction is stretching and so cannot be considered to be symmetrical from a risk perspective. There is a material risk that the targets are not achieved despite the funding and activity, and this risk arises from the realities of the network and its relationship to external factors such as the weather. We have assumed therefore that the P50 level is set at our target reduction, but that the range beyond this for further outperformance opportunity is very small in comparison to the range of risk above our target for underperformance potential, given the externalities in play. We have also included the potential for enhanced rewards for leakage, triggered at the current frontier performance level, and with an incentive rate at double the standard rate.
PCC SST and PCC CAM	We have two performance commitments for PCC, one for each of our two regions. We have not achieved our PR19 targets, due to the impact of Covid and its lingering effects on customer demand. We have demonstrated this impact separately in appendix SSC18. However it creates a significant risk going forward as we do not know if the underlying change factors present, especially in the SST region, will fully unwind. Our business plan therefore proposes to rebase our performance commitment targets so that we are targeting the equivalent WRMP reduction, but from the current level of performance. In SST, this is a significant rebasing as PCC has stayed higher for longer and is still significantly above our PR19 target level. In CAM, the impacts of Covid have unwound much faster, and whilst we have not met our PR19 target, we are able to only slightly modify the original PR19 glidepath to continue that downwards trend. Both regions are ultimately targeting the same end goal, which is the 110 litres per day (DYAA) Environment Act target by 2050. It is the pace and the starting point that is effected, to account for the impacts of Covid, rather than the end goal. If we did not undertake this rebasing of our targets, we would expect to be in significant penalty position, especially given the new higher incentive rates for PCC, from day one of the AMP8 period, based on our actual PCC levels (particularly in SST region). This would be so significant that it would mean we would be unable to state our plan was financeable.
Business demand SST and business demand CAM	These are new measures, and we again have one representing each of our regions. We have used the WRMP assumptions on business demand and in the CAM region our WRMP shows that we expect the business demand to grow over AMP8 due to growth in the region. Even with efficiency savings included this results in an upwards direction of travel for business demand. In SST region the water efficiency assumptions result in a decrease to overall business consumption. Overall we are concerned that this element of demand is extremely volatile and outside of company control, and not suitable for applying incentives to. As with Covid, business demand is highly sensitive to wider economic factors and our element of control, water efficiency activity, could easily be dwarfed by more material external factors in period. At the moment we have assumed that our targets are accepted and that the performance is broadly symmetrical, but we remain concerned that this is not a good measure to apply incentives to and could result in perverse outcomes in either direction.
Biodiversity	We have not included this performance commitment in our analysis as the incentive rate is not yet available.
Greenhouse gas emissions	We have not included this performance commitment in our analysis as the incentive rate is not yet available.

1.4 Monte Carlo risk simulation

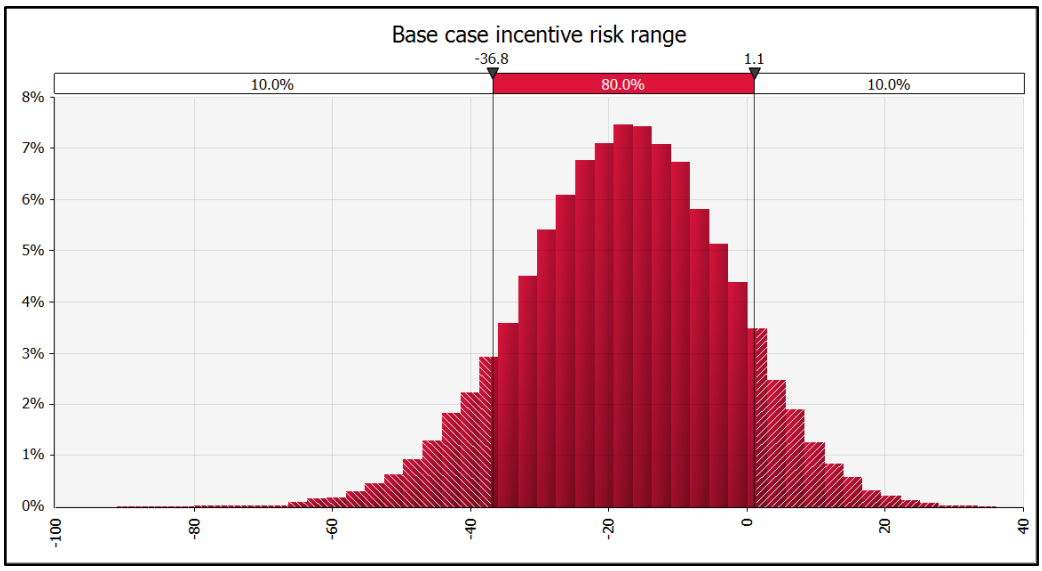
We have undertaken a Monte Carlo risk analysis approach. This approach is based around setting a reasonable risk range for each performance commitment, i.e the P10, P50 and P90 for each measure, and then simulating the average level of performance over many runs of the simulation. A Monte Carlo process is useful for this type of analysis because it sets a range around each performance commitment, rather than fixed spot values, and this eliminates some of the risk around under or over-estimation of the inputs.

As explained in the table above, we see some measures as carrying a positive bias, some neutral, and some carrying a negative bias, for the various reasons given. There are some measures where performance is materially impacted by external factors, such as the weather or customer behaviour outside the scope of our water efficiency activity. These can create material downside risks to performance. We clearly have management control over a wide range of activity which seeks to improve service, creating a potential for upside. However to account for this desire and ability to try and improve performance over time, the targets themselves are adjusted as a result of the inclusion of these business activities, and so become more stretching over time. It is therefore systemically more difficult to outperform on almost all measures than it is to underperform, given that we first have to meet a target which it itself an improvement over the current service level. There are also penalty only measures within the package, which clearly can only be downside risk as there is no upside opportunity from them.

When all this is considered together, inside the Monte Carlo simulation, we can estimate a range of risk that derives from this package of performance commitment targets, incentive rates, and risk assumptions about delivery and uncertainty.

Figure 1 below shows our base case risk range. This includes reasonable assumptions about where targets will be set in relation to our ambition and other factors, as set out in the previous section.

Figure 1: base case risk range



This shows that the overall package is significantly negatively skewed. The P10 worst case is negative at -£36.8m, and the P90 best case is only marginally positive at £1.1m. These represent totals over five years. This is a RORE range equivalent to -3.4% to +0.1% which is not in line with the expected range in Ofwat's final methodology and not aligned with the assumptions used to evaluate the weighted average cost of capital.

Figure 2: spread of risk across performance commitments

		Risk P10 per PC					Risk P50 per PC					Risk P90 per PC				
Performance commitment	**Units**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**
CMEX	Score	-0.713	-0.713	-0.713	-0.713	-0.713	0.606	0.606	0.606	0.606	0.606	1.502	1.502	1.502	1.502	1.502
DMEX	Score	-0.161	-0.161	-0.161	-0.161	-0.161	0.077	0.077	0.077	0.077	0.077	0.307	0.307	0.307	0.307	0.307
BRMEX	Score	-0.110	-0.110	-0.110	-0.110	-0.110	0.011	0.011	0.011	0.011	0.011	0.127	0.127	0.127	0.127	0.127
Supply interruptions	mm:ss	-1.082	-1.246	-1.405	-1.575	-1.739	0.348	0.327	0.260	0.225	0.150	1.644	1.571	1.445	1.282	1.117
CRI (deadband shown)	Score	-2.986	-2.986	-2.986	-2.986	-2.986	-0.209	-0.209	-0.209	-0.209	-0.209	0.000	0.000	0.000	0.000	0.000
Water quality contacts	Contacts per 1000 population	-1.040	-0.994	-0.904	-0.859	-0.768	0.090	0.090	0.090	0.090	0.136	0.768	0.768	0.768	0.723	0.768
Mains repairs	Nr/1000 km	-2.245	-2.236	-2.225	-2.213	-2.200	0.005	0.003	0.003	0.002	0.001	1.569	1.585	1.601	1.616	1.631
Unplanned outage	% of PWPC	-0.721	-0.721	-0.721	-0.721	-0.721	-0.001	-0.001	-0.001	-0.001	-0.001	0.359	0.359	0.359	0.359	0.359
Discharge permit compliance	% of WTW failed	-1.736	-1.736	-1.736	-1.736	-1.736	-0.320	-0.320	-0.320	-0.320	-0.320	-0.043	-0.043	-0.043	-0.043	-0.043
Serious polution incidents	Nr	-0.290	-0.290	-0.290	-0.290	-0.290	-0.065	-0.065	-0.065	-0.065	-0.065	-0.010	-0.010	-0.010	-0.010	-0.010
Leakage SST	Ml/d 3ya	-2.146	-2.151	-2.067	-1.982	-1.897	0.000	0.000	0.000	0.000	0.000	1.095	1.090	1.173	1.078	0.983
Leakage CAM	Ml/d 3ya	-0.383	-0.442	-0.452	-0.426	-0.400	0.000	0.000	0.000	0.000	0.000	0.301	0.242	0.232	0.222	0.284
PCC SST	l/p/d 3ya	-3.821	-4.566	-5.478	-6.458	-7.417	0.000	0.000	0.000	0.000	0.000	5.040	5.040	5.040	5.040	5.040
PCC CAM	l/p/d 3ya	-3.896	-4.025	-4.480	-4.968	-5.448	0.000	0.000	0.000	0.000	0.000	4.849	2.649	2.399	2.399	2.399
Business demand SST	Ml/d 3ya	-2.520	-2.520	-2.520	-2.520	-2.520	0.000	0.000	0.000	0.000	0.000	1.800	1.800	1.800	1.800	1.800
Business demand CAM	Ml/d 3ya	-2.520	-2.520	-2.520	-2.520	-2.520	0.000	0.000	0.000	0.000	0.000	1.800	1.800	1.800	1.800	1.800

The table above shows how this negative skew is spread over the performance commitments in the package. Note that these tables cannot be summed to reach the totals given in figure 1, due to the way in which the Monte Carlo process works.

Several measures are neutral in the P50, as shown by the zeros, or near zeros, in the central portion of the table. However CRI, discharge permit compliance and serious pollution incidents are all negative at P50, as would be expected as penalty only measures where there is only downside risk.

Our historically strong performance on supply interruptions, water quality contacts and CMEX means that these show as positive in the P50.

The two PCC measures, even with the rebasing of targets, show as a material risk. The incentive rates are substantially higher than in PR19, 25 times higher in CAM and 4 times higher in SST, which is significantly amplifying the risk if the ambitious and fast paced reduction levels are not achieved. Additionally, the large incentive rates also means the PCC measures are the main contributor to outperformance opportunity, significantly above the other performance commitments. We do not think this weighting is balanced which is not good for a package of measures that are all important to customers.

CRI remains a material downside risk at PR24, as the scale of our works size proportional to our customer base means that we carry increased sensitivity to failures at either Hampton Loade or Seedy Mill compared to other companies. The penalty rate at PR24 is proposed to be twice as large as at PR19, amplifying this risk further.

There is also a wide risk range around business demand, and in conjunction with a large penalty rate equivalent to that applied to leakage, creates a significant potential contribution to both under and outperformance potential. As we set out in our assumptions above, we do not consider it appropriate to expose such a large incentive range to the business demand measure where we are only in control of water efficiency activity.

Finally there is a larger exposure to leakage incentives in SST compared to CAM, this is because both regions are valued the same per Ml/d, but 1 Ml/d in Cambridge, which is about a fifth of the size of SST, is a much larger volume proportional to the area. The same problem applies to PCC, where both regions are valued the same per litre/person/day based on the value of 1 Ml/d of water derived from Ofwat's top down research, and this approach does not adjust for regional size.

In summary we consider that this package is not appropriate.

- The incentive rates are inappropriately scaled for leakage, PCC and business demand as they do not adjust for regional size. 1 Ml/d in Cambridge is much more of a reduction than in South Staffs region which is five times larger.
- There is significant negative skew on a number of measures, including the penalty only measures and others where there are other risks driving expected performance or volatility.
- The overall package does not meet the expected risk range indicated by Ofwat's PR24 methodology.

It is not easy to find solutions to these problems in the incentive package. The negative skew is a result of the combination of factors inherent within the design of the approach:

- Stretching targets where achieving the target level is itself difficult
- Penalty only measures, which can only be negatively skewed as there is no upside

- Targets which require rebasing to reflect recent external factors and the uncertainty this creates
- Some targets which are significantly volatile, such as CRI, or have material external impactors, such as weather
- ODI rates that are far larger than at PR19 in absolute terms, amplifying the negative skew
- ODI rates that are symmetrical, and so not working to combat the negative skew on the package as a whole.

1.5 Possible solutions

We have covered some specific issues related to our package in the section above, but there are wider interventions that would need to be made to bring the package to the desired +/-2% of regulated equity level of exposure.

Recalibrating incentive rates

One method that we consider possible to resolve this negative skew would be to set ODI rates that are non-symmetrical. This would mean that outperformance rates could be larger than underperformance rates, which would work to offset the negative skew of the package as a whole, for those measures where outperformance is possible. It would mean that rewards for going beyond already stretching targets are greater than the penalties for underperforming them, offsetting the downside risk. Our analysis suggests that this scaling would need to be in order of 1.5 to 2 times larger for outperformance rates compared to underperformance rates. This still does not fully offset the negative skew due to the impact of penalty only measures, which do not have an outperformance opportunity.

We also consider that some of the incentive rates are too high in absolute terms and in some circumstances will result in penalties of a scale that can materially damage the financeability of the business. The approach taken to setting these rates, initially via willingness to pay research, did not work well and the top down approach that Ofwat has used has resulted in rates significantly larger than at PR19. Rescaling rates alone would not solve the negative skew, but it would partially mitigate the excessive penalty risk at the P10, which is nearly double where it should be (-3.4% against -2% expected).

Removal of incentives where it is less appropriate to apply them

Some performance commitments appear to be poorly suited to financial incentives.

- Business demand, because we are only able to control the delivery of water efficiency activity, and yet business demand is subject to exposure from a wide range of economic factors both nationally and regionally. To apply the same incentive rate as leakage reduction, which is far more within our control and remit of responsibility, is disproportionate.
- PCC, because of the lingering uncertainties of Covid impacts, and because the achievement of the national targets requires delivery of activity that goes substantially beyond just the water sector.
- Mains bursts, because the impact of the weather on the measure is liable to create swings in performance from year to year – it is the long term trend that is important, as we have other measures in the package directly measuring service performance.
- Serious pollution incidents, where there are already legal mechanisms in place that should be used to prosecute companies in the event of these incidents, and where the degree of fine received would be proportional to the level of harm caused to the environment.

Underperformance collars

Some measures are far more volatile than others, and some are affected more by external impactors than others. For the package of performance commitments we have at PR24, our analysis shows that it is very difficult to overcome the volatility of some measures. This is because where we are able to go beyond our targets and achieve outperformance, this is likely to be a far smaller upside increment than the downside increment we are exposed to when an external event happens, such as a major burst or poor spell of winter weather.

A number of measures had underperformance collars attached at PR19 and we consider that all of these should be carried forward into PR24. We propose that penalty collars continue to be applied to the following measures:

- CRI
- Supply interruptions
- Mains bursts
- Leakage
- Unplanned outage

We also consider that the following performance commitments should have underperformance collars attached given the degree of risk exposure they present in our initial analysis.

- PCC
- Business demand
- Discharge permit compliance
- Serious pollution incidents

The increased size of the penalty rates alone significantly increases the exposure to penalty at the existing levels of collar, such that one solution to reduce the risk exposure, if these incentive rates remain, is to significantly tighten the levels at which the penalty collars trigger.

More deadbands

We recognise that Ofwat is not minded to include more deadbands, but these would work to make the middle ground more neutral in risk terms, and could be used in conjunction with other alterations to the mechanism design.

We do consider that a deadband on CRI remains important, and this is included in our base case above, at a level of 2 points as at PR19. Despite extensive quality management process in place for our sampling and analysis, the repetition of any complex process such as this a hundred thousand times will result in false positives. In addition, approximately one third of the samples that drive CRI are taken from customers properties where we regularly root cause microbiological failures to poor hygiene of customers taps which we do not own or maintain. Therefore we do not believe it is appropriate to reduce the deadband from its current value of 2 CRI points.

We have not included any other penalty deadbands at this stage, given that we are aware that Ofwat's methodology does not favour them.

1.6 Next steps

Our analysis shows that a considerable negative risk skew is present in the expected ODI package based on the proposed Ofwat rates and other modifying factors.

Ofwat has advised companies to use its incentive rates in business plan and include narrative on our concerns with these rates and other factors in the submission, which we have followed. At this stage, we expect that the business plan submissions from other companies will indicate similar issues to varying degrees based on specific companies' circumstances. Not only this, but performance commitment targets are still to be set and some ODI rates still to be defined.

As a result of this we would expect that there is potential for significant alterations to the performance commitments, incentive rates and other parts of the ODI mechanisms as Ofwat works through these issues.

For this reason, we have communicated the issues presented in this appendix to our Board, as part of our business plan governance process, but we have not asked them to sign off a final outcomes package at this stage. Our Board have signed up to our proposed levels of ambition and what we want to achieve in the period, including our stretching proposals for leakage, supply interruptions, water quality contacts and other measures. The uncertainties that remain, and the expected degree of change still to come, will be considered by our Board when we have enough information to articulate a complete risk position to them, which we expect will be at the draft determination stage unless Ofwat communicates any solutions sooner than this.

It is expected that the final risk range target would be in the order of +/- 2% of regulated equity and we would consider this range to be appropriate for ODIs and is aligned with the assumptions used to evaluate the weighted average cost of capital. However, as evidenced, the current package is very far from reaching this target due to the issues and uncertainties that remain at this stage of the process. It is also important that the package as a whole isn't inappropriately weighted towards one or more measures above others, and at the moment this is the case.

We would welcome, and encourage, further collaboration prior to draft determinations, to try and resolve these issues which form an important aspect of the business planning process. It is in the interests of customers, companies, and Ofwat, for the package of performance commitments to provide strong incentives, but also fair ones, on companies. The service improvements we all want to see should be incentivised, but in a way which does not introduce punitive levels of risk that become unachievable to deliver against because of the impact of factors outside of company control, and which then have material consequences on our ability to sustain a financeable business and maintain investor confidence.