



YorkshireWater

PR19 Redetermination
Yorkshire Water Services:
Response to Ofwat Reply

27 May 2020

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Foreword

Yorkshire Water acknowledges the request in the CMA's letter of 1 May 2020 for Yorkshire Water and the other disputing companies to focus on: (i) Ofwat's position as set out in its submissions; and (ii) any relevant issues raised by one another, and only provide new information. This document focuses on addressing each of the issues raised by Ofwat in its submissions.

Yorkshire Water's decision to ask for a redetermination was a principled one. The company's analysis of the impact of Ofwat's Final Determination demonstrates a degradation in the planned resilience position of the company and it creates intergenerational unfairness.

Yorkshire Water's analysis also demonstrates that, given the shortfall in costs and inevitability of penalties caused by the downside skew in its risk position, there would be significant harm to the company's financial resilience. Although service could perhaps be managed in the short term by refocussing investment, in the circumstances this would require sustained perfect weather conditions – whereas the reality is that increasing climate volatility brings a higher level of risk that is outside of management control. This is a direct result of the disconnects between costs and outcomes and between risk and return that are evident in the Final Determination.

Given the high level of support for the Business Plan shown by our customers, and the harm caused to the plan by the Final Determination, the Yorkshire Water Board had no choice but to seek a redetermination. Support for that decision among Yorkshire Water's stakeholders has grown further since it was first taken, as shown by the range of third-party submissions made to the CMA.

Local authorities across Yorkshire and environmental NGOs share Yorkshire Water's concerns about the impact of the Final Determination on the level of investment available to address the impacts of climate change across the county and improving resilience for its communities.

Professor Dieter Helm, in his paper submitted as Annex 3 to this Response, sets out clearly how Ofwat has disproportionately focussed on the economic costs to today's consumers and has failed to take account of the wider environmental benefits to customers of the investment proposed in the Yorkshire Water Business Plan. He also sets out how an opportunity has been missed to encourage innovation through the adoption of a sustainable catchment-based solution as proposed by the Living with Water partnership in Hull, of which Yorkshire Water is a key partner.

Yorkshire Water has conducted itself in a fair and responsible fashion throughout the process and has been careful in how its arguments are both expressed and evidenced. This Response addresses Ofwat's submissions using data and evidence to demonstrate further the flaws in the PR19 methodology already highlighted in the original Statement of Case. It also identifies a number of contradictory positions that Ofwat has taken, such as where outperformance in one company is viewed as efficiency, while concurrently being characterised as cost avoidance to boost returns in Yorkshire Water's case.

This Response sets out clearly how Yorkshire Water maintains its financial resilience and ensures that financial structures have had no negative impact on customers, on which Ofwat has been well briefed. It also emphasises the damaging impact that the Final Determination will have on customers and on Yorkshire Water.

Most importantly, it considers remedies that would address the issues raised, correcting the intergenerational unfairness created by Ofwat's approach. The outcome from this redetermination is important for the next five years. However work has already commenced for the next price review and this redetermination provides the opportunity for parties to step back and reflect on how improvements can be made for PR24. It is important to get this right.

The company looks forward to further discussion with the CMA on its Statement of Case and on the additional evidence presented in this Response.

1. Introduction

YWS's approach to the Response

- 1.1.1 This document (the **Response**) sets out the responses of Yorkshire Water Services (**YWS**) to Ofwat's initial submissions of 19 March 2020 and subsequent submissions of 2 May 2020.
- 1.1.2 In its letter of 1 May 2020, the CMA asked YWS and the other disputing companies (together, the **Disputing Companies**) to focus on: (i) responding to Ofwat's submissions; and (ii) addressing any relevant issues raised by the other Disputing Companies. The CMA also made clear that the Disputing Companies should only provide new information.
- 1.1.3 YWS has structured this Response in a way that it hopes will straightforwardly allow the CMA to compare and contrast YWS's and Ofwat's respective positions. The Response sets out a comprehensive item-by-item rebuttal of the points in Ofwat's submissions.
- 1.1.4 The Response draws out numerous specific errors in the Final Determination (**FD**) on which Ofwat continues to rely in its submissions. There are two fundamental types. The first are **evidential errors**, where Ofwat took decisions that cannot be supported by the models and data it relied on. The second are **methodological errors**, where Ofwat's chosen approach (or the application of that approach) inherently meant that the decisions it took were not evidence-based and/or were not balanced and robust.
- 1.1.5 However, the errors in the individual building blocks of the FD are only part of the picture. YWS is particularly concerned that the individual evidential and methodological errors relating to each building block combine and interplay to create an overall regulatory challenge that is beyond what the notionally efficient firm could be expected to deliver.
- 1.1.6 This necessarily implies that any particular argument advanced by Ofwat cannot only be considered in isolation. Rather, each argument must also be addressed in the broader context of the FD package as a whole.
- 1.1.7 By contrast, Ofwat relies extensively on spot examples of outperformance on individual components of previous price controls (e.g. on Totex or particular Performance Commitments), with no consideration of the impact of its policy decisions on target levels, or the absence of any evidence of outperformance on the price control package as a whole. In other words, Ofwat is guilty of cherry-picking.

- 1.1.8 During its presentation to the CMA on 20 May, Ofwat conceded that costs having increased or decreased relative to prior settlements does not in itself mean that the PR19 allowance is sufficient to address the challenges that companies face in Asset Management Period (**AMP**) 7. YWS assumes that Ofwat will now withdraw its numerous assertions that imply the contrary.
- 1.1.9 The necessity of considering the FD at a package level is linked to a critical overarching flaw in Ofwat's approach, namely its policy decision to impose an efficiency step change on the industry.
- 1.1.10 YWS does not contest that the historical performance of the industry is a relevant consideration when considering the extent to which an efficiency step change can be achieved during AMP7. However, YWS has provided robust evidence (using the appropriate method of comparing outturn ROCE with the regulatory determined WACC) that the water industry has not persistently outperformed prior regulatory settlements.
- 1.1.11 In the absence of such outperformance, any efficiency challenge must be determined via objective consideration of robust evidence. Yet Ofwat's step change policy goes far beyond what its evidence can support.
- 1.1.12 This fact is fundamental to the dispute between the parties, because the desire to impose a step change in efficiency (whether consciously or unconsciously) appears to have influenced numerous marginal decisions that Ofwat took during PR19, which together add up to produce an unachievable regulatory challenge.
- 1.1.13 Proper consideration of performance against previous regulatory settlements would also have been a complete answer to Ofwat's past critics of the stringency of those settlements. Since there is no evidence of historical outperformance, this criticism should have been given no weight at all.
- 1.1.14 As this Response explains, the ultimate consequences of the FD are that YWS is materially underfunded to deliver its Business Plan for AMP7 (the **Business Plan**) and faces a material downward skew in its risk position, and that the notionally efficient firm is not financeable. It will force YWS to take short-term actions at the expense of long-term investment in the resilience that its customers have asked for, and lead to damage to the environment and the stifling of innovation.

Structure of this submission

1.1.15 This Response comprises 13 sections which broadly align with those in Ofwat's Cross-cutting Issues Paper (**CCIP**) (although the sections refer to all of Ofwat's submissions):

- (a) **Section 2** addresses statements made by Ofwat about YWS's historical and current performance. It also sets out the factual position about YWS's motives for seeking this redetermination, explains why Ofwat's characterisation of those motives is untrue and unjustified and makes some additional contextual points. It also addresses Ofwat's incorrect assertion that it has discharged its statutory duties.
- (b) **Section 3** discusses the regulatory challenge on costs. It sets out a robust, evidence-based rebuttal of Ofwat's assertions that its approach to modelling base and enhancement costs was appropriate and that it has set efficient cost allowances. The overall effect of these errors is that Ofwat has allowed insufficient funding for YWS to deliver its Business Plan.
- (c) **Section 4** looks at outcomes. It shows the falsehood of Ofwat's claim that YWS has failed to look after its assets appropriately, and sets out evidence for the specific circumstances in YWS's region, which Ofwat has wrongly ignored. Rather than having set performance levels that are "stretching but achievable", Ofwat has set targets which YWS will almost certainly miss and which incentivise outcomes that will not be in the best interests of customers.
- (d) **Section 5** brings together the position on costs and outcomes to show the disconnect in the FD. Ofwat has incorrectly assumed that it is possible to make its mandated improvements in service levels purely through allowed base costs and higher productivity.
- (e) **Section 6** rebuts Ofwat's claim that the FD provides an appropriate balance of risk and return. Fundamentally, the FD exposes YWS to a material increase in risk that is significantly skewed to the downside, while at the same time reducing allowed returns. Ofwat's over-reach arises from a failure to carry out a proper risk assessment, including asserting that the expected outcome is identical to the target set by Ofwat.

- (f) **Section 7** sets out the market evidence to demonstrate why Ofwat's allowed return of 1.92% (in real, RPI-stripped terms¹) is below the reasonable level for an efficient company.
- (g) **Section 8** challenges Ofwat's proposed gearing sharing mechanism. It explains why the mechanism is unnecessary, harms consumers and contradicts statements made by Ofwat as recently as 2016.
- (h) **Section 9** addresses financeability, showing that Ofwat's FD means that a notionally efficient firm would not be financeable. It points out Ofwat's selective approach on the use of ratings methodologies to support its own financeability assessment.
- (i) **Section 10** sets out YWS's claim in relation to WRFIM, showing how Ofwat has mischaracterised the nature of discussions on the issue.
- (j) **Section 11** draws together all of the above themes. Building on the arguments set out in the YWS Statement of Case (**SoC**), it explains how the FD will prevent YWS from delivering what its customers want and reduce innovation. It also explains how the FD will force the company to focus on the short term in a way that will damage the resilience of the asset base and the environment and raise costs and prices for future customers.
- (k) **Section 12** provides the CMA with a set of potential remedies. These would create a realistic and sustainable settlement, in line with the needs of customers and the environment.
- (l) **Section 13** briefly touches on the impacts of Covid-19 and the effect on YWS's customers. Information continues to be collected and shared by the industry and Ofwat through Water UK. YWS is supporting this process and would be very happy to provide further information as appropriate.

1.1.16 These sections are supported by a number of case studies and other evidence including:

- (a) case studies on the link between leakage and mains repairs, internal sewer flooding, YWS's WINEP programme, YWS's asset health, and the Industrial Emissions Directive (**IED**);

¹ This figure is for wholesale controls – see Ofwat, PR19 final determinations: Aligning Risk and Return Technical Appendix, page 4.

- (b) papers by Economic Insight on Ofwat's gearing outperformance sharing mechanism, a framework for asset health, and the additional funding needed to meet UQ performance;
- (c) a paper by Oxera addressing Ofwat's cost modelling responses;
- (d) a paper by ARUP on the resilience impacts of the FD;
- (e) a paper by Professor Dieter Helm which addresses the general benefits of a catchment approach to water company regulation and comments on sewer flooding;
- (f) a paper by Linklaters on YWS's regulated debt platform; and
- (g) a paper by Centrus on YWS's debt portfolio.

Executive Summary

1.1.17 The following paragraphs provide an executive summary of the subsequent Sections of this Response.

Ofwat's claims about YWS's conduct and past performance

1.1.18 As part of these redetermination proceedings, Ofwat has made a number of strong claims about YWS's conduct and past performance. It is striking that this is the first time Ofwat has set out these views.

1.1.19 YWS considers the claims to be wrong and unsubstantiated. YWS's approach throughout PR19 has always been evidence-based and it is disappointed that Ofwat has chosen to make a set of assertions about YWS's motivations. YWS regards these assertions not only as wrong, but also as unnecessary and irrelevant, and it is concerned that they may deflect attention from the flaws in the FD.

1.1.20 Nevertheless, because these sorts of claim can affect the broader context for the CMA's deliberations, it is worth addressing them in turn:

- (a) Ofwat claims that YWS believes its customers should pay more for less. However, YWS's Business Plan contained significant service improvements and cost reductions relative to AMP6. By contrast, Ofwat's FD, with its overriding focus on short-term bill reductions, will damage resilience and the environment, and will cause bills to rise in the future. This is the fundamental reason for YWS to seek a redetermination.
- (b) Ofwat claims that YWS has materially underspent its cost allowance by targeting low activity levels and degrading asset health. In fact, for each of the last five AMPs, YWS's base

investment has been very close to the corresponding cost allowance and YWS has maintained a stable asset base. For the 25-year period as a whole (1995-2020), total base investment costs were £4,740m compared with an allowance of £4,737m. YWS has appended a case study on asset health which sets out the full picture.

- (c) Ofwat implied during its 20 May 2020 presentation to the Panel that YWS's underspend on hydraulic capacity in AMP6 was used to benefit shareholders. This is false and misleading: the amount of the underspend was offset by additional expenditure in other areas – most importantly to address the causes of internal sewer flooding, a priority area for customers.
- (d) Ofwat suggests that YWS brought the legitimacy of the sector into question by paying excessive dividends to its shareholders to the detriment of customers. In fact, during AMP6, far from rewarding its shareholders with high dividends, YWS reinvested all outperformance in better service levels for customers. When considering only dividends that are not immediately returned to YWS as interest, YWS paid among the lowest amount in dividends of the water and sewerage companies during that period. Looking forward, YWS's dividend policy ensures that service performance is taken into account alongside gearing level and is dependent on an assessment of financial resilience. No dividends were forecast for AMP7 in its Business Plan.
- (e) Ofwat criticises YWS's past financing decisions and actual capital structure at some length and appears to attach considerable importance to them. However, it does not do so in a fair and balanced manner. Moreover, given the focus on notional capital structures and efficiency, in the regulatory methodology, YWS's past financing decisions have little relevance to the redetermination to be undertaken by the CMA.
- (f) Ofwat claims that YWS has focused only on the areas of downside in the FD and ignored the upside. The reality is that there are limited areas of upside, but where they do exist, YWS has been completely transparent about them.
- (g) Ofwat also implies that the Yorkshire Forum for Water Customers (the customer challenge group in Yorkshire) has been deficient in its conduct and compromised its independence of view. YWS strongly refutes this suggestion.

- 1.1.21 Two further points are particularly important in setting the context for the CMA's considerations.
- 1.1.22 The first concerns the very high degree of reliance Ofwat places on an unevidenced hypothesis of information asymmetry. Ofwat attempts to use this to discredit sound evidence-based analysis presented by YWS, to justify ad-hoc interventions within the package of incentives, and to set aside any consideration of real-world implications of the flawed FD.
- 1.1.23 This is of particular concern for several reasons:
- (a) its use may be convenient, but it risks distorting the evidential basis of the price control process, creating risks of harm for customers, companies and investors;
 - (b) since Ofwat has wide-ranging powers of information discovery and receives substantial amounts of information during the annual reporting and price-control processes (including a number of early submissions for PR19), if any such asymmetry exists at all it suggests that Ofwat is not using its powers effectively; and
 - (c) if Ofwat had in fact been troubled by concerns of information asymmetry, its approach to the incentives in PR19 is surprising. The increased number of incentives, new complexities such as enhanced incentive rates, and more value at risk, would all seem to increase the problem with which Ofwat is concerned or at best create greater risk linked to the putative information asymmetry.
- 1.1.24 The second point is that Ofwat shifts its position on whether Totex underspending represents efficiency or low activity levels. For example, during its recent presentation to the CMA, Ofwat described Anglian Water as a strong performer because it had underspent its Totex allowance by 9%. Yet Ofwat has characterised underspending by YWS as reflecting low activity levels (a claim that YWS has strongly refuted).

Costs

- 1.1.25 In its SoC, YWS provided material evidence about the technical flaws in Ofwat's cost modelling. Ofwat has not fully engaged with this evidence.
- 1.1.26 It is clear that Ofwat's decision to increase the stringency of the catch-up efficiency benchmark was in part results-driven, and the evidence it relied on to support this was selective.
- 1.1.27 None of Ofwat's responses negate the concerns YWS raised about the uncertainty inherent in Ofwat's econometric modelling. In addition, it is now apparent that uncertainty in Ofwat's models generally increases

when the models are estimated using forward-looking data. Importantly, the quality of the models themselves tends to deteriorate, suggesting that the models are not reliable predictors of AMP7 expenditure. This means that Ofwat's approach of extrapolating the results from its models when run with historical data cannot predict YWS's efficient cost level in AMP7 robustly. Despite this, Ofwat continues to place complete reliance on the model results and has additionally chosen to set the most extreme benchmark ever.

- 1.1.28 Ofwat denies that it inappropriately omitted service quality cost drivers from its base models. However, Ofwat's rebuttals are founded on a misinterpretation of YWS's analysis. This issue is of significant importance, because the inclusion of such cost drivers in wastewater models shows that YWS is broadly cost efficient on wastewater, despite Ofwat's claims to the contrary. Ofwat's claim that YWS is one of the least efficient companies in the industry is therefore highly misleading.
- 1.1.29 Ofwat has also failed adequately to address YWS's contention that its models do not adequately control for legislative cost drivers for phosphorous removal. This accounts for the majority of YWS's alleged "inefficiency" in this area.
- 1.1.30 Ofwat has presented new evidence to support its overstated frontier shift target. However, the new evidence fails to address the fundamental limitations of Ofwat's approach. It remains the case that in many areas it results in double counting of efficiency benefits.
- 1.1.31 Taken together, these factors mean that the resilience of YWS's network will be reduced and future customers will have to pay more to repair the damage.

Outcomes

- 1.1.32 YWS is greatly concerned that Ofwat has used a combination of its hypothesis of information asymmetry and its over-confidence in the reliability of its models as a reason not to engage with the real-world evidence provided by companies. Ofwat also relies heavily on comparative data that is unreliable and disproportionately impacts companies with good reporting compliance. In addition, Ofwat has inappropriately disregarded the views of YWS's customers.
- 1.1.33 Two examples are of particular relevance:
- (a) First, Ofwat has criticised YWS's evidence on internal sewer flooding. It argues that the evidence does not prove to its satisfaction that the Yorkshire area is sufficiently different to areas

served by other companies. However, Ofwat has failed to recognise the impact of the number of cellars in aged and dense housing stock in Yorkshire. The evidence shows that over 70% of flooding events in Yorkshire's area of appointment occur in cellars and require a specific solution which needs customers to grant access to their properties.

- (b) Second, Ofwat intervened late in the PR19 process to impose a mains repair target that amounts to a 34% performance shift over AMP7. Particularly in conjunction with the leakage target, the probability of YWS reaching this target is extremely low. Ofwat has provided no evidence of the need for such a policy change but has set an unachievable target by cherry-picking from the best years of prior performance. However, Ofwat does not appear to have understood the reasons for the observed performance variations – variations which are generally weather related and outside the control of the company – or the amount of work that would be required to achieve its target. Again, YWS's practical experience is that the repair target is operationally unworkable.

1.1.34 YWS has prepared and annexed to this Response case studies on internal sewer flooding and mains repairs (together with leakage) which provide further details on the operational challenges in each area.

1.1.35 There are multiple other examples, including Ofwat's interventions on water supply interruptions, pollution incidents, external sewer flooding and sewer collapses. These were all largely arbitrary, poorly-evidenced and detract from the levels asked for by YWS's customers.

Costs-outcomes disconnect

1.1.36 Costs and outcomes are two of the building blocks of Ofwat's price control, but in its FD, Ofwat has failed to take proper account of the connection between them. YWS and the other Disputing Companies have provided clear evidence of this disconnect but Ofwat's responses do nothing to rebut that evidence.

1.1.37 Ofwat's principal flaw was its failure to develop a methodology that is capable of reaching a robust forward-looking view of what it would cost YWS to deliver the service levels set out in its FD. Instead, Ofwat incorrectly attached too much weight to its backward-looking analyses of cost and service performance and has drawn the wrong conclusions from them.

1.1.38 Ofwat is wrong to argue that the fact that companies were able to meet or exceed certain specific targets in PR14 implies that they will be able to

meet or exceed them in PR19. The allowed costs and PCs in PR14 reflect a fundamentally different situation. Moreover, even if the analysis showed that the 'stretch' at PR19 is the same as it was at PR14 (which, for the avoidance of doubt, it is not), it would not follow, as Ofwat implies, that YWS is funded to deliver the Upper Quartile (**UQ**) Performance Commitments in the FD.

- 1.1.39 Ofwat is also wrong to argue that cost-efficient companies have been able to improve their performance: its cost models do not account for outcomes when estimating the efficient level of future costs. And importantly, the benchmark companies Ofwat used to set YWS's cost allowance have not systematically achieved the level of performance expected by Ofwat across all relevant Performance Commitments.
- 1.1.40 YWS has shown how outcomes performance could have been included in Ofwat's cost models to reach a forward-looking view of the relevant costs. While the CMA may or may not agree with the precise technical approach that YWS has adopted, the simple overarching point is that it is possible to reach such a view. Despite this, Ofwat has failed to take outcomes into account in its cost assessment at all.

Balance of risk and return

- 1.1.41 Ofwat repeatedly claims to have assessed the FD "in the round". However, one of the key flaws of the FD is that it did *not* consider the risk-reward position implied by the package as a whole. This is the prime example of a methodological error in the FD.
- 1.1.42 Ofwat argues that its published RoRE risk ranges provide evidence that it has properly calibrated risk and return under the FD, because the risk ranges are broadly symmetrical (i.e. indicate the same range of potential upside as they do potential downside).
- 1.1.43 However, Ofwat's risk ranges were not produced by a proper risk analysis and therefore have no evidential value. For example, in relation to Performance Commitments and Outcome Delivery Incentives (**ODIs**), the method that Ofwat used meant that, regardless of what targets it set, its risk ranges would always appear to be symmetrical. In the absence of risk analysis, Ofwat's claim that the FD is "stretching but achievable" amounts to nothing more than an empty slogan.
- 1.1.44 Moreover, Ofwat's contention that risk has reduced for water companies at PR19 is plainly false. Indeed, Ofwat's own published risk ranges show that more equity is at risk at PR19 than at PR14. Ofwat's view at PR14 was that there was 6.6% (percentage points) of equity return at risk,

compared to a much higher figure of 11.1% (percentage points) at risk for PR19. It makes no sense for Ofwat to maintain this position.

1.1.45 Ofwat's failure to carry out adequate risk analysis is of particular concern in circumstances where it has substantially weakened or completely removed risk mitigants within its price controls. The removal of uncertainty mechanisms and the substantial weakening and delayed application of the Totex sharing mechanism all increase risk that is beyond management's ability to mitigate.

Allowed return on capital

1.1.46 YWS's position remains that Ofwat's allowed return of 1.92% (in real, RPI-stripped terms) is too low and does not provide a reasonable return for an efficient company based on the available market evidence.

1.1.47 This is the result of multiple errors by Ofwat:

- (a) it has mis-estimated beta by adopting too short an estimation window;
- (b) its approach to converting nominal cost of capital values to real is unworkable in practical terms and wrong in principle;
- (c) it has failed to ensure consistency between the notional company's likely credit rating and the indices used to calculate the cost of new debt;
- (d) it has failed to take proper account of differences between companies' costs of embedded debt; and
- (e) it has inappropriately relied on the share prices of listed companies as a representative characterisation of investor sentiment after PR19.

Capital structure and GOSM

1.1.48 Ofwat fails to present a defence for the misconceived gearing outperformance sharing mechanism (**GOSM**) formula and betrays an overall lack of clarity about the purpose of the imposed mechanism.

1.1.49 First the mechanism is wrong in principle. YWS has robust protections in place against the risks that Ofwat claims justify the introduction of the GOSM. There can be no realistic prospect of risks being passed to consumers (rather than shareholders) due to gearing.

1.1.50 Second, Ofwat argues that customers do not benefit from gearing, but this is demonstrably false. There are tax savings from higher gearing and

these are directly passed on to customers. Ofwat appears to have forgotten the position it took in 2016 where it stated that "*there is a direct financial benefit to customers from highly geared arrangements. This is because we currently set tax allowances on the basis of a company's actual level of gearing, so customers do benefit from the lower tax costs from highly geared companies.*"

Financeability

- 1.1.51 The ultimate consequence of the FD is that the notionally efficient firm is not financeable:
- (a) The FD falls far short of providing assurance that an efficient firm will be able to access the debt that it needs in AMP7 on reasonable terms.
 - (b) An investor looking at the FD as a package could not reasonably conclude that the notionally efficient firm is a viable investment opportunity, or that it in any way resembles a 'fair bet' i.e. a fair likelihood of earning a rate of return that is commensurate with the risks and returns that are on offer elsewhere. To the contrary, investors would expect to incur a financial loss as a result of likely over-spending, penalties for shortfalls in performance, the inadequate return on the RCV and/or the costs of reinstating an acceptable credit rating.
- 1.1.52 Ofwat's actions do not amount solely to its failing to find the right balance between its duties, although the evidence strongly suggests that Ofwat inappropriately promoted its secondary efficiency duty over its primary duties in an effort to reduce customer bills. From its recent submissions it is also clear that Ofwat departed from the long-standing approach to the assessment of financeability, in an attempt to sidestep clear evidence from the ratings agencies that the FD would have a negative impact on the financeability of an efficient firm.
- 1.1.53 Thus, not only has Ofwat failed to discharge its financing duty, but in failing properly to consider relevant information from the ratings agencies, it has also stepped beyond the public law constraints on the exercise of its powers.
- 1.1.54 Ofwat argues that YWS's conclusions on financeability arise from confusion between the position of the notionally efficient firm and the 'real world'. In fact, it is Ofwat that appears to have conflated the two.
- 1.1.55 Ofwat is also wrong to suggest that YWS is seeking to reduce the financing duty to a series of binary 'red line' legal tests. The opposite is

true. YWS's position is that Ofwat is required to test the financeability question against a wide range of metrics and potential outcomes. Ofwat has manifestly failed to do so.

WRFIM

1.1.56 Ofwat suggests that there was no discussion between itself and YWS about the Wholesale Revenue Forecasting Incentive Mechanism (**WRFIM**). YWS categorically refutes this suggestion and believes there is robust evidence to support its position. It is clear that all subsequent correspondence between the parties proceeded on the basis such discussions had taken place. In short, Ofwat has no basis on which to deny YWS's claim.

Results of the FD

1.1.57 As set out above and in YWS's SoC, Ofwat has made numerous material errors of principle and application in relation to each of the three building blocks of its 2019 price review (**PR19**) – namely: (i) costs; (ii) outcomes; and (iii) returns – that combine to create an overall regulatory challenge that is beyond what the notionally efficient firm could be expected to achieve. In addition, Ofwat has imposed an unnecessary and flawed gearing outperformance sharing mechanism and has unreasonably refused to allow YWS £44m to account for a data input error in PR14 relating to the WRFIM.

1.1.58 The results of these flaws in the FD are that:

- (a) YWS has not been allowed sufficient funding to deliver its customer-supported Business Plan; and
- (b) YWS faces a material downside skew in its risk profile during AMP7, in every year of which it is expected to incur net penalties for underperformance, which should not be the case for an efficient firm.

1.1.59 The SoC explained that one of the key impacts of the FD would be material harm to YWS's resilience, by forcing YWS away from long-term capital investment towards reactive operational expenditure. This has now been independently verified by ARUP.

1.1.60 Ofwat does not address this harm in its response, preferring instead to suggest that YWS seeks a "*blank cheque*" to improve resilience, a claim which YWS categorically refutes. YWS simply considers that Ofwat has not found the right balance between affordability and investment in resilience.

- 1.1.61 Indeed, as noted by Waterwise in its third-party submission in relation to the impact on water meter replacement: *"A final determination that results in reductions in customer bills whilst risking investment in water efficiency and demand management programmes is a false economy. Greater water efficiency actually saves customers money"*.
- 1.1.62 ARUP's report has been appended to this Response. One aspect of this that YWS would request the CMA consider in particular is the further deterioration to YWS's resilience that would occur if Ofwat repeated the PR19 package at PR24. In view of this, YWS would invite the CMA to give its views on any aspects of the price control that it considers to be unsatisfactory, as a guide for the future.
- 1.1.63 As regards the other aspects of harm highlighted in the SoC, Ofwat has sought to engage with YWS's claims, but its responses do not stand up to scrutiny. In short, it remains the case that the FD would also have material environmental impacts by underfunding YWS's WINEP programme and stifle innovation by underfunding its flood-defence scheme in Hull and Haltemprice.
- 1.1.64 YWS has attached a paper prepared by Professor Dieter Helm which addresses the general benefits of a catchment approach to water company regulation and comments on sewer flooding, both generally and specifically in relation to Hull. One of Professor Helm's conclusions is that: *"... it is hard to see that the PR19 outcomes will result in anything other than an overall deterioration of the natural environment – more flood risk, more grey solutions, lower biodiversity and river quality and further carbon emissions... Using the Hull example, the CMA has an opportunity to provide for an integrated and longer-term blue/green solution to Hull's sewer flooding and this would be a great example to the industry as it moves into the Environment Bill, Agriculture Bill and CCA net zero target context."*

Potential remedies

- 1.1.65 In order to rectify the fundamental flaws in Ofwat's FD, reconnect costs and outcomes, rebalance risk and reward, and ultimately allow YWS to deliver the outcomes desired by its customers, YWS has suggested a package of remedies for the CMA's consideration.
- 1.1.66 On cost modelling, YWS requests that the CMA takes into account the models and certainty of results when setting the appropriate efficiency benchmark. YWS considers that a more robust methodology on frontier shift results in targets of 0.8% p.a. and 0.75% p.a. for wholesale water and wastewater, respectively. In relation to enhancement expenditure, YWS

requests that the CMA consider and correct the deficiencies in Ofwat's WINEP models; and have appropriate regard to the unique requirements for Hull and Haltemprice in considering YWS's efficient flood-defence costs for that area. YWS also suggests an uncertainty mechanism for IED costs to allow for cost recovery at the end of AMP7.

- 1.1.67 YWS's proposed solution to the costs-outcomes disconnect is to ensure that YWS is funded at an efficient level to meet its targets. The two main options to achieve this are: (i) to increase YWS's costs allowances to meet the targets; or (ii) reduce the targets to the levels that are funded. YWS has suggested a package of remedies aimed largely at the first of these options in order to retain the improvement of outcomes that its customers support.
- 1.1.68 In order to implement these remedies, YWS asks the CMA to have regard to the robust evidence-based view it has provided. YWS has set out its suggestions for proposed service levels and funding (where applicable) for each of internal sewer flooding, mains repairs and leakage, which take into account its customers' preferences, its regionally-specific factors and the level of investment necessary to achieve the outcomes. In relation specifically to internal sewer flooding, YWS considers that an appropriate remedy would be to increase its cost allowance while also increasing the time over which YWS can improve its performance.
- 1.1.69 Finally, YWS requests that the CMA have regard to its positions on WACC. It requests the CMA to omit the gearing outperformance sharing mechanism, and also to allow YWS's WRFIM adjustment claim.

Impacts of Covid-19

- 1.1.70 The effects of COVID-19 on YWS's customers and business are not yet clear but YWS thought it important to convey an early assessment of the evolving picture, which it will update as further information is to hand. This is set out in the final Section of this Response. YWS is closely monitoring the situation to identify the net impact on the delivery of YWS's Performance Commitments and ODIs, its Totex investment programmes and its bad debt position.

2. General Matters

Overview

This Section addresses Ofwat's statements about YWS's historical and current performance, and what Ofwat sees as YWS's motives for seeking this redetermination, all of which are untrue and unjustified.

As justification for the positions it has adopted in the FD, Ofwat asserts that:

- YWS is attempting to "game" the price review (i.e. only talking about areas where it wants more money).
- YWS has rejected the FD for spurious reasons (i.e. it wants more for doing less).
- YWS wants to pay excessive dividends and has a risky financial position.
- YWS is a poor performer that does not look after its assets.
- Ofwat's previous settlements have been "too generous".

These statements do not present an accurate picture of YWS and do not reflect the character and actions of the company, its colleagues, Board or shareholders.

This Section sets out evidence to show that:

- YWS's Business Plan is evidence-based and contains an ambitious package of efficient service improvement.
- YWS has a long, evidenced track record of looking after its assets, efficiently and effectively.
- Outperformance has been shared with customers and, in AMP6, used to improve services further.
- YWS's governance is robust and embedded, and social responsibility is at the heart of the decisions it takes.

This Section also addresses Ofwat's incorrect assertions (i) that it has discharged its financing duty; and (ii) that it found the correct balance between its duties overall.

- 2.1.1 This Section addresses various policy-related statements that Ofwat has made in its submissions, together with various unsubstantiated allegations regarding the way in which YWS has historically managed its assets, and its views on how it has met its statutory duties.
- 2.1.2 These statements have been collected together and addressed first in this Response because Ofwat in effect presents them as the justification for its approach to PR19. However, as will be made clear below, the statements do not stand up to rigorous scrutiny and therefore cannot support Ofwat's position.
- 2.1.3 It is implicit in Ofwat's own submissions that it felt it was under significant external pressure in its approach to PR19, in light of criticism its previous price controls had attracted. That notwithstanding, it remains axiomatic that water companies, their customers and their investors should all be able to rely on a soundly based and well-evidenced regulatory process. Needless to say, the departure from good regulatory practice and lowering of evidential standards apparent in YWS's FD is highly unsatisfactory.
- 2.1.4 As explained in paragraph 1.1.3 of this Response, the remainder of this Section adopts the format of providing a rebuttal of each of Ofwat's assertions. The Ofwat statement under consideration is set out first and highlighted bold, with YWS's response following in unhighlighted text. This format will be used in the subsequent Sections of this Response without further comment.

2.2 The Disputing Companies believe that customers should pay more and receive less than Ofwat settled for them. [Reply-001/1.2]²

- 2.2.1 Not only does Ofwat have no evidential basis whatsoever for this comment, which YWS categorically refutes, but it also entirely disregards the levels of ambition and activity that YWS set out in its Business Plan (which received 86% customer support). The key elements of the Business Plan included:
- (a) An upfront efficiency saving of around £800m on the costs to carry out similar activities in previous AMPs.
 - (b) A statutory programme of environmental improvements that was some three-times larger than the same programme in AMP6.

² References to 'Reply-001' are to Exhibit 001, Ofwat: 'Reference of the PR19 final determinations: Introduction and overall stretch on costs and outcomes – response to cross-cutting issues in companies' statements of case'.

- (c) Arguably the most ambitious service improvement programmes in the sector, including a 47% reduction in internal sewer flooding and a 41% reduction in pollution incidents.
- (d) A company contribution into the social tariff of £2m per annum, equating to a revenue sacrifice of £10m over the period (YWS being one of only three companies to make such a contribution).

2.2.2 When compared to the targets set in PR14, YWS simply cannot understand the basis for Ofwat’s assertion that its customers would be receiving less under the Business Plan, which clearly provides significant service and environmental improvements.

2.2.3 Having established that YWS was not proposing that its customers receive less in PR19 as compared to PR14, YWS also categorically refutes Ofwat’s assertion that it is asking for greater costs to do so on a comparative basis. YWS has requested the efficient costs necessary to carry out significantly *more* activity. As demonstrated in Figure 1 of YWS’s presentation to the CMA panel on 15 April 2020,³ YWS’s costs, when stripped of additional (WINEP-related) activity, are lower than those in AMP6. Moreover, these costs include the considerable service improvements proposed in the Business Plan, such as a 47% reduction in internal sewer flooding and a 41% reduction in pollution:

Figure 1 of YWS’s presentation to the CMA panel on 15 April 2020:



2.2.4 Even the simplest of historical comparisons, therefore, demonstrates that the statement that YWS’s customers should “pay more to receive less” is completely unfounded. YWS is disappointed that Ofwat has chosen to

³ Exhibit 002, YWS presentation to the CMA: ‘Overview of the reasons why we have rejected the Final Determination’, (15 April 2020), slide 15.

make this bellicose and misleading statement, as it does not aid any understanding of the real points at issue in this redetermination.

2.3 The Disputing Companies do not have incentive to draw attention to instances where Ofwat made generous decisions and raised issues on a selective basis. [Reply-001/1.9] The CMA should take account of the areas where the FD allowed higher costs than those requested by YWS, which made the FD appropriate “in the round” [Reply-005/3.5-3.7]⁴ [Reply-006/6.10]⁵

2.3.1 The CMA need not be reminded that this is a redetermination of the FD. YWS was itself clear on this point in its SoC where it has been transparent as to where the shortfalls and limited upside (i.e. areas where Ofwat’s determination was more favourable than what YWS requested in the Business Plan) are to be found.

2.3.2 By using the term ‘in the round’ in this statement, Ofwat appears to suggest that the CMA should somehow offset a £48m additional cost allowance in the household retail control against a £724m shortfall across the four wholesale controls (water resources, water networks plus, wastewater networks plus and bioresources). Ofwat is well aware, however, that each of the five individual price controls making up YWS’s overall Totex are separate and individually binding. This means that it is not possible to transfer funds between different controls to make good shortfalls in one of them.

2.3.3 Although econometric models are used to set both wholesale and retail price controls, they are fundamentally different activities with different methods for assessing them. As none of the Disputing Companies have raised retail costs as a substantial issue, this would suggest that the retail assessment does not suffer from the same limitations as the wholesale analysis.

⁴ References to ‘Reply-005’ are to Exhibit 003, Ofwat: ‘Reference of the PR19 final determinations: Response to Yorkshire Water’s statement of case’.

⁵ References to ‘Reply-006’ are to Exhibit 004, Ofwat: ‘Reference of the PR19 final determinations: Cost efficiency – response to common issues in companies’ statements of case’.

2.4 Despite stagnation of performance in the sector, some companies have continued to pay high dividends to investors during AMP6. [Reply-001/2.8]

The legitimacy of the water sector has been called into question by corporate behaviours, such as high gearing, high dividend payments, and loans to shareholders. [Reply-001/2.9]

- 2.4.1 It is absolutely right for the legitimacy of the water sector to be publicly scrutinised given both the service that it provides and the fact that elements of it are, intrinsically, a natural monopoly.
- 2.4.2 However, YWS questions the legitimacy of Ofwat raising such allegations in these redetermination proceedings. Indeed, there is no element of the price control to which they are relevant. Moreover, even if Ofwat had the right to take these matters into account during PR19, it did not do so. Finally, as Ofwat is very well aware, these allegations do not apply to YWS.
- 2.4.3 For the record, the facts are as follows.
- 2.4.4 YWS has paid dividends to shareholders totalling £45m in the last six years in comparison to potential notional dividends in same period of £612m. Contrary to Ofwat's insinuation, YWS has in fact reinvested all outperformance in PR14 to the improvement of key service measures such as pollution, leakage and internal sewer flooding.
- 2.4.5 Ofwat's analysis of dividends is flawed because it reflects total dividends disclosed in YWS's annual statutory accounts, and fails to recognise that the significant majority of YWS's dividends relate to amounts paid to other group companies, as is clearly disclosed each year. Ofwat notes that the majority of the dividends are used to service inter-company loans. However, it fails to acknowledge that all of these particular dividends are instantly used as a settlement of interest due on intercompany loans from YWS. Therefore, there is no impact on YWS or its customers from these transactions.
- 2.4.6 When these amounts are stripped out, a more consistent comparison with other companies can be made, and it is found that YWS has paid among the lowest amount in dividends among all water and sewerage companies over the last AMP.
- 2.4.7 In early 2018, YWS worked with Ofwat to develop an improved dividend policy that ensures shareholder interests will be more closely aligned with customers' interests in future years. This was achieved by ensuring that any dividend payments reflected any gearing in excess of the

notional level and were dependent on performance for customers. This new policy also includes an override for financial resilience, thereby ensuring no dividends are paid if the YWS Board considers them to have a detrimental impact on the company's financial resilience.⁶

2.4.8 Therefore, YWS has demonstrated a balanced and responsible approach on dividends when considering its operational and financial resilience. The new policy introduced provides a more formal basis for maintaining this approach. The ongoing focus on financial resilience has resulted in current forecasts for AMP7 not including any dividends to be paid by YWS that will be ultimately received by its shareholders.

2.4.9 In addition, YWS notes that Ofwat has drawn attention to a special dividend of £717m paid in financial year 2006-07 within its analysis of actual company structures.⁷ This was part of a financial restructuring announced by YWS's then parent company, Kelda Group plc, the effect of which was to increase gearing to c.60%, in line with the 55-65% range assumed by Ofwat in the 2004 Final Determination.⁸ YWS notes that Ofwat's annual report for the same financial year disclosed that the two parties were in discussions regarding a number of licence modifications following the announcement of this financial restructuring.⁹

2.4.10 Ofwat also states that YWS's dividends exceed its reported profits¹⁰ but fails to consider that dividends are a distribution of available reserves, which are not solely generated from reported profits. A more complete analysis would consider the full history of YWS reserves available for distribution since its creation in 1989. It is unclear why Ofwat is raising these historic issues such as the special dividend, which goes back at least thirteen years – YWS does not believe it is in any party's interest to spend time analysing Ofwat's statement within its presentation other than to note that it is a selective view of dividends that it did not present back in 2006-07. The focus for dividends in AMP7 should be on the revised dividend policy set out in the original business plans submitted

⁶ Full details of the new policy were included in Exhibit 001 (SoC), YWS's Business Plan, as submitted in September 2018.

⁷ Exhibit 005, Ofwat presentation to the CMA: 'Initial presentation in response to water companies' statements of case' (20 May 2020), slide 24.

⁸ Exhibit 006, Kelda Group: 'Annual Report and Accounts 2007', pages 4-7.

⁹ Exhibit 007, Ofwat: 'Annual report 2006-07', Table 9, Appendix 1 ('Financial restructuring and changes in ownership from outside the industry').

¹⁰ Exhibit 005, Ofwat: 'Ofwat CMA – initial presentation in response to water companies' statements of case' (20 May 2020), slide 24.

to Ofwat in September 2018, the current forecast to retain shareholder dividends for 2020-25 to provide support to YWS, and the dividend decisions taken by the YWS Board in AMP6 regarding the reinvestment of outperformance in preparation for AMP7.

- 2.4.11 The actions taken during AMP6 and the new dividend policy clearly show that YWS has put customers' interests before those of its shareholders.

Ofwat's assertions regarding YWS's gearing are addressed in paragraph 2.18.2 below.

2.5 Water companies have earned excess returns as a result of Ofwat's overly generous historical price reviews. [Reply-001/2.10]

- 2.5.1 The available evidence does not support this generalised claim that the sector has routinely outperformed Ofwat's historical price reviews. In its Reply, Ofwat has failed to engage meaningfully with any of that evidence.

- 2.5.2 YWS would draw the CMA's attention to a paper prepared by Economic Insight¹¹ (submitted as part of YWS's DD representation) which considered whether there was any evidence of systemic outperformance in the water industry. The paper set out a detailed analysis of outturn financial returns in the water industry over time. The purpose of this was to determine whether, and to what extent, there has been historical out- or underperformance.

- 2.5.3 The evidence clearly showed a 'mix' of performance across the companies, with an even balance of 'winners' and 'losers', and where the identities of out- and underperforming firms also varied. As such, the paper concluded that there has not been systemic historical outperformance in the industry.

- 2.5.4 This view is consistent with findings from independent reviews. The House of Commons Report by the Select Committee for the Environment, Food and Rural Affairs Committee on the PR09 price control noted that evidence (including that submitted to it by Ofwat) was that returns had been below the cost of capital.¹²

- 2.5.5 In 2015, the National Audit Office (**NAO**) published its review of regulation in the water sector. Whilst the NAO had some criticism of aspects of Ofwat's regulatory framework (most obviously in relation to

¹¹ Exhibit 034 (SoC), Economic Insight: 'Financeability of the notionally efficient firm: top-down analysis' (August 2019).

¹² Exhibit 008, House of Commons, Environment, Food and Rural Affairs Committee: 'Ofwat Price Review 2009', Fifth Report Session 2008-09 (HC554-I), Volume 1.

the historical allocation of risk relating to the cost of debt) it largely considered it to work well. Relevant to this point, the NAO examined historical industry profit, in terms of ROCE. The NAO found: "*our analysis indicates that water sector returns over the period 2010-11 to 2014-15 as a whole were broadly in line with Ofwat's expectation of the minimum return an efficiently run company ought to be able to earn*".¹³

- 2.5.6 In its Reply, Ofwat paints a picture of outperformance being a negative outcome. This is a surprising development since it goes against many of the principles of RPI-X incentive-based regulation. Indeed, as recently as the risk-based Review stage of PR14, Ofwat was expressing concern that business plans first submitted at PR14 provided too little incentive for outperformance.¹⁴ At the same time, Ofwat also cited the finding of the Gray Review regarding PR09 that incentives may be too focussed on penalties and compliance as opposed to positive incentives for desired changes in behaviour.
- 2.5.7 Hitherto, Ofwat has been clear that customers benefit from outperformance. This arises both from the immediate sharing of benefits that takes place with individual companies, and the capture of the revealed savings and performance levels across all companies at the next price control. While Ofwat is changing the timing for PR19 and seeking to accelerate these effects by asserting savings in advance of their having been revealed, well-evidenced outperformance still benefits customers. Ofwat now seeks to imply retrospectively that past outperformance has been due to low activity levels or under-investment, but has advanced only "convenient hypotheses" without supporting evidence.
- 2.5.8 Ofwat's attempt to correct its unevidenced perception of industry-wide historical outperformance, by skewing the risk-return balance in PR19, has inevitably led to unintended consequences and an unprecedented number of companies seeking a redetermination. These matters are addressed in more detail in Sections 6 and 11 below.

¹³ Exhibit 009, NAO: 'The economic regulation of the water sector' (October 2015), page 29.

¹⁴ Exhibit 010, Ofwat: 'Setting price controls for 2015-20 – risk and reward guidance' (January 2014), Appendix 4.

2.6 It is important to protect customers from the risk of poor service, inefficient expenditure and excessive returns. [YSP/2.4]¹⁵

2.6.1 YWS agrees with these statements but (as above) categorically refutes Ofwat's insinuation that YWS has spent inefficiently, delivered poor service and earned excessive returns at the expense of its customers. As set out in SoC, paragraphs 21 et seq.:

- (a) Ofwat has consistently assessed YWS to be efficient relative to other water companies;
- (b) YWS manages its assets in a cost-efficient way and maintains stable levels of asset health; and
- (c) YWS has a strong track record of meeting regulatory performance targets.

2.6.2 Furthermore, YWS believes that the FD, as it stands, will lead to environmental and customer harm and intergenerational unfairness, as it forces the company to adopt short-term activities in an effort to avoid the material penalty risks of a Performance Commitment package that does not reflect the customer valuations carried out by the company.

2.7 Outperformance of cost allowances means that companies have chosen not to spend all allowed funding on improve service quality and maintaining or improving infrastructure. [Reply-001/2.7]

Some water companies have underspent in previous periods, potentially at the expense of future performance for customers, and so enjoyed higher returns and dividends for investors. [CCIP/3.43]

YWS has targeted low activity levels in order to be low cost instead of carrying out its activities efficiently (e.g. in relation to historical asset renewal). [YSP/2.6]

2.7.1 YWS completely refutes the allegation that its long-held position as a highly efficient company has been achieved through targeting low levels of activity, a suggestion raised by Ofwat for the first time in the course of this redetermination.

2.7.2 YWS has efficiently delivered the vast majority of the targets set of it over the last five AMPs. It is also not the case that YWS has diverted funding away from asset investment to allow shareholders to enjoy high returns

¹⁵ References to 'YSP' ('Yorkshire-Specific Paper) are to Exhibit 006 (SoC), Ofwat: 'Reference of the PR19 final determinations: Explanation of our final determination for Yorkshire Water' (March 2020).

and dividends. Table 1 (below) demonstrates YWS investment against allowed cost in base capital maintenance.

		AMP2	AMP3	AMP4	AMP5	AMP6
Water Base	Final Determination	401.615	384.250	409.782	602.359	659.467
	Actual	499.987	355.793	407.321	518.744	547.120
Wastewater Base	Final Determination	302.849	241.849	394.020	550.635	790.008
	Actual	266.490	312.412	465.730	527.037	839.141
Overall Base Programme	Final Determination	704.464	626.099	803.802	1,152.994	1,449.475
	Actual	766.477	668.205	873.051	1,045.782	1,386.261
AMP6 Upper Quartile Re-investment (into Other Capital Expenditure)						159.0

Table 1: YWS investment against allowed cost in base capital maintenance.

- 2.7.3 The table demonstrates that, looking at the last 25 years as a whole, YWS has invested 100% of the overall total base cost allowance for that period (though there are some over and under variances in specific AMPs). For each AMP the actual base investment has been either close to, or, in a number of instances above, the corresponding cost allowance, demonstrating that the funds to maintain the assets have been expended effectively and efficiently.
- 2.7.4 In AMP6, where YWS has achieved the regulatory target set on specific measures within the allowed costs through efficient working practices, the remaining allowed costs have been reinvested into improving key service metrics such as internal sewer flooding, pollution and leakage or improving assets such as bioresources sludge treatment. The amount of reinvestment overall into assets and service in AMP6 totals around £250m Totex, of which £159m was Capex (as shown in the last line of the table). This demonstrates that, as well as investing its total base allowance over 25 years, YWS has also invested by diverting outperformance into improving service and taking care of its assets, thereby benefitting customers.
- 2.7.5 YWS has outperformed in the past within the enhancement element of its allowances while achieving all the outputs required. This outperformance benefit has been shared with customers either through outperformance sharing (as in AMPs 5 and 6) or as captured efficiency benefits that customers received in the next AMP.
- 2.7.6 If YWS had been underinvesting over a prolonged period, it would inevitably lead to a deterioration in key asset health metrics over time. Table 2 (below) shows YWS's asset health ratings for over a decade and demonstrates a predominantly stable position:

	AMP 4					AMP 5				
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
WW Networks	Marginal	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
WW Quality	Deteriorating	Deteriorating	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
W Networks	Stable	Stable	Stable	Stable	Stable	Marginal	Marginal	Stable	Stable	Stable
W Quality	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable	Stable
	AMP 6									
	2015-16	2016-17	2017-18							
WW Networks	Stable	Stable	Stable							
WW Quality	Stable	Stable	Stable							
W Networks	Stable	Stable	Stable							
W Quality	Stable	Stable	Stable							

Table 2: YWS’s asset health ratings, 2005-06 to 2017-18.

- 2.7.7 YWS refutes the allegation that higher dividends have been awarded to shareholders by diverting funding away from assets. Where outperformance has been achieved, the benefits of this have either been shared equally with customers (in line with the regulatory mechanisms), or, as is the case in AMP6, the outperformance has been re-invested into improving service for customers and none has been returned to shareholders.
- 2.7.8 As explained in the SoC, the change in regulatory expectations in PR19 (that took no account of legitimate regional differences) meant that YWS had a greater step change to deliver than other water companies, despite its being on track to meet the majority of the targets set for it by Ofwat at PR14. To improve service for customers ahead of AMP7 YWS invested around £250m of outperformance into improving service in key areas for customers. This meant that none of the outperformance value was returned to shareholders.
- 2.7.9 In summary, YWS has not adopted a policy of low activity to create additional returns for shareholders – as evidenced by its performance levels, asset health and by the actual returns shareholders have received. Moreover, where outperformance has occurred, the benefits of it have been shared in line with the regulatory mechanisms or reinvested into improved service. Finally, as demonstrated in paragraph 2.5.3 above, there is no evidence of systemic outperformance in the water industry so, on all counts, any claim that YWS has underinvested to create increased returns for shareholders is contrary to the available evidence.
- 2.7.10 When considering Ofwat’s submissions more generally, YWS would invite the CMA to bear in mind that Ofwat has been inconsistent in: (i) claiming that underspend on Totex is a measure of outperformance; and (ii) claiming that it is an indication of underinvestment (as in the assertions above). While YWS does not agree that (i) is indeed a correct

measure of outperformance, the key point is that Ofwat adopts inconsistent reasoning on this issue.

Ofwat's statutory duties

- 2.8 The matters raised by the Disputing Companies amount to disagreements about how Ofwat has exercised its regulatory discretion and do not imply that it failed to meet its statutory duties. [Reply-005/2.6, 2.15; Reply-001/1.6, 3.4, 3.77]**

Ofwat's principal duties have to be balanced evenly as matter of regulatory judgment. They are not a checklist of tests that the CMA must meet. [Reply-001/3.11-3.13]

Ofwat's duties are not mutually exclusive. [Reply-001/3.14-3.15]

Challenging companies to demonstrate that their proposed expenditure is efficient is intrinsic to Ofwat's primary statutory duties. Ofwat has therefore not promoted its secondary duty to promote efficiency above its primary duties. [Reply-005/2.11; Reply-001/3.36-3.37]

- 2.8.1 YWS agrees that Ofwat is required to exercise its powers "*in the manner which he or it considers is best calculated*" to balance its various primary duties under WIA91 s.2(2A) and that these words import a degree of regulatory discretion. As set out in SoC, paragraph 43, YWS also agrees that Ofwat's primary duties should complement rather than conflict with each other and must be given equal weight.
- 2.8.2 It is also correct that one of the issues in dispute between the parties is whether Ofwat did indeed balance its duties in reaching the FD. As set out in SoC, paragraph 55, YWS considers that Ofwat failed to do so, by placing too much emphasis on its (secondary) duty to promote economy and efficiency (the ***efficiency duty***) and too little on those requiring it to protect the needs of present *and* future customers (the ***consumer duty***), further the resilience objective (the ***resilience duty***), contribute to the achievement of sustainable development (the ***sustainability duty***), and ensure that the notionally efficient firm can finance the proper carrying-out of its functions (the ***financing duty***).
- 2.8.3 Ofwat's contention that the substance of its (secondary) efficiency duty is implicit within its primary duties is irrelevant to this question. If Ofwat is correct on this point, YWS nevertheless considers that Ofwat has overemphasised this aspect of its primary duties at the expense of the others. (It should, nevertheless, be mentioned that Ofwat's contention is

questionable as a matter of statutory interpretation, given that this would render the wording in WIA91 s.2(3)(b) redundant.)

- 2.8.4 To the extent that Ofwat is suggesting that the matters raised by the Disputing Companies cannot amount to its acting outside of its regulatory powers *in principle*, its position is hard to understand. While it is agreed that Ofwat has a degree of regulatory discretion in the exercise of its powers, this does not mean that Ofwat is unconstrained in doing so. For example, as noted in SoC, paragraph 53, Ofwat is subject to the usual public law considerations for decision makers, namely acting in good faith, consistently, proportionately and rationally (i.e. reasonably, based on the available evidence), exercising its discretionary powers only for their proper purpose, and taking into account all relevant considerations (and disregarding irrelevant considerations).
- 2.8.5 In the present context, consideration of relevant information is fundamental to the question of whether Ofwat has discharged its financing duty, which is addressed further below.

2.9 Each determination by Ofwat is highly fact- and context-specific, so that departing from the approach in previous controls is not necessarily a breach of regulatory best practice. [Reply-001/3.20-3.21]

- 2.9.1 YWS does not dispute that Ofwat is entitled to (and indeed must) take account of the facts and context relevant during each price review. However, as set out in SoC, paragraph 53, WIA91 s.2(4) requires that in exercising its powers Ofwat must have regard to the principles that regulatory activities should be "*proportionate, consistent and targeted only at cases in which action is needed*". In other words, any departure from prior regulatory practice must be justified by a pressing need that has been demonstrated by convincing evidence.
- 2.9.2 One of YWS's key concerns with the FD is that Ofwat has not produced adequate evidence of a need to justify the following decisions and/or has disregarded the available evidence that no change is justified:
- (a) Ofwat has implemented a policy that a significant step change in the level of stretch companies face is required with little credible evidence that this is the case. The fact that Ofwat would state that it gave companies advance notice of this is irrelevant as the scale of the stretch required was revealed incrementally and beyond what companies could reasonably deliver without significantly increasing their risk position.

- (b) In a consultation by Ofwat from 2016 entitled *Water 2020: consultation on the approach to the cost of debt for PR19*, Ofwat set out its views at the time regarding securitisations and considered whether a benefits sharing mechanism was required to share any upside from securitisation. On the latter point, Ofwat stated that "*We do not propose to introduce a separate approach or specific benefits sharing arrangement for securitised structures. It could confuse the responsibility for bearing the costs associated with the securitised arrangements, which we consider are to be borne by the equity holders of these structures. It would also mean that customer benefits would be dependent on company specific financing arrangements. It would also introduce additional complexity into setting the cost of capital. We consider that customers are protected from the risks of these arrangements by our notional financing approach and our financial monitoring framework*".¹⁶ Ofwat then published a further document, *Restoring Sector Balance*, in which it proposes the opposite position and supports a mechanism.¹⁷ YWS notes that this document does not contain an impact assessment, as had the 2016 consultation. Gearing levels are not something that companies can simply and swiftly alter to keep up with the changing views of a regulator.
- (c) There were also a number of changes in position from Ofwat in the run-up to and during the PR19 process. These include:
- (i) The changed approach to measuring asset health, as addressed further in Annex 18.¹⁸
 - (ii) Growth being considered as an enhancement cost (consistent with previous reviews) and then being 'moved' into base costs.
 - (iii) The cost efficiency benchmark moving between DD and FD from upper quartile to the third ranked company in water and the fourth-ranked company in waste water. As set out

¹⁶ Exhibit 011, Ofwat: 'Water 2020: consultation on the approach to the cost of debt for PR19' (September 2016), page 20.

¹⁷ Exhibit 012, Ofwat: 'Putting the sector back in balance: Consultation on proposals for PR19 business plans' (April 2018), section 3.

¹⁸ Annex 18, YWS: Asset Health Understanding and Knowledge.

in paragraph 3.16.1, Ofwat has now conceded that this move was (in part) policy based.

All of these matters contribute to a material increase to YWS's risk position as compared with prior price reviews and lead to the potential for material harm to YWS's customers, the environment and the company described in SoC, paragraphs 283-319 and Section 11 below.

2.10 Ofwat did not have any overriding aim to reduce customer bills. [Reply-005/2.8; Reply-001/2.17] YWS's assertions in this regard are unsupported by evidence. [Reply-001/3.25] In any case affordable bills were an outcome of Ofwat's bottom-up approach to PR19. [Reply-001/3.27-3.29; Reply-005/2.35] Ofwat's public statements during PR19 reflected its balanced approach to its objectives. [Reply-001/3.30-3.31]

2.10.1 There is a clear tension in Ofwat's position on this point. On the one hand Ofwat is adamant that it did not set out with an overriding objective to reduce customer bills in PR19 and that the bill reductions arising from its FDs are the outcome of objective economic analysis. On the other hand, Ofwat has consistently stated – from the outset of PR19 through to these redetermination proceedings – that it intended to challenge water companies to make a "step change" in efficiency during AMP7. In other words, Ofwat's statements indicate that it had decided what outcome it wanted to achieve before it had conducted its economic analysis. Moreover, despite Ofwat's claim that affordable bills were a mere outcome of its focus on improving efficiency,¹⁹ the record clearly shows that the required step change was inseparably linked with bill reductions in Ofwat's mind.

2.10.2 For example, in its PR19 Methodology, Ofwat stated that: "*Companies will need to deliver a step change in efficiency to provide more for customers and the environment, while reducing bills*".²⁰ In its consultation document, Ofwat stated that "*companies will need to deliver a step change in efficiency to give customers better services and bill reductions*".²¹ Ofwat's Chairman, Mr Jonson Cox, clearly signalled his

¹⁹ Exhibit 003, Reply-005, paragraph 3.28.

²⁰ Exhibit 017 (SoC), Ofwat: 'Delivering Water 2020: Our final methodology for the 2019 price review', page 14.

²¹ Exhibit 013, Ofwat: 'Delivering Water 2020: Consulting on our methodology for the 2019 price review' (July 2017), page 10.

intentions for PR19 in an Ofwat press release: *"Ofwat's chair, Jonson Cox, has signalled that water customers could be at the start of "the decade of falling bills" as he suggested prices could fall in real terms until 2025 at least. Speaking at the Utility Week Congress yesterday, Cox said that managements of water companies needed to "step up and improve service and cut bills."*²²

2.10.3 These statements are imperatives. From the outset, Ofwat clearly required water companies to deliver a step change in efficiency with the clear purpose of reducing bills. In view of this, Ofwat's contention that it merely thought there *"would be an opportunity to do so"* is far from convincing.²³

2.10.4 Indeed, Ofwat's early statements of intent were matched by its statements at DD and FD stages indicating that it had achieved what it had set out to do. At DD, Ofwat announced a "new era" of water regulation, which would be marked by *"better services for customers... backed by increased investment and with lower bills"*.²⁴ Similar rhetoric was carried through to FD, at which Ofwat stated that the FDs *"enable water companies to deliver more for people today... and at the same time operate more efficiently and reduce bills"*.²⁵ Following a period of bill increases post-privatisation, *"[a]s a result of PR19, bills are forecast to fall from 2020"*.²⁶

2.10.5 In this connection it is also relevant to consider how Ofwat's position changed over the course of PR19 on the importance of customer views as to the level of bills.

2.10.6 It is certainly true that Ofwat's desire to reduce bills was implicit in its initial instructions to water companies regarding customer engagement during PR19, such as: *"We consider it vital for companies to engage with customers effectively about the opportunities for bill reductions... Companies should avoid any unwarranted bias in their customer*

²² Exhibit 014, Ofwat: PN 17/17: Ofwat boss talks of the 'decade of falling bills'. Available at: <https://www.ofwat.gov.uk/pn-1717-ofwat-boss-talks-decade-falling-bills/>.

²³ Exhibit 001, Reply-001, paragraph 3.26.

²⁴ Exhibit 015, Ofwat: 'PR19 draft determinations: Overview of companies' draft determinations', page 2.

²⁵ Exhibit 016, Ofwat: 'PR19 final determinations: Overview of companies' final determinations', page 3.

²⁶ Exhibit 035 (SoC), Ofwat: 'PR19 final determinations: Policy summary', page 4.

*engagement [by], for example, the use of current bills as a starting point or giving the idea that flat real bills are 'good enough'."*²⁷

2.10.7 However, at the early stages of PR19 this desire was balanced by the supposed role of customers' views in determining their bill levels: "*Affordable bills should offer value for money and the scope for price reductions if this is what customers want*".²⁸ This clearly left open the option for customers to elect to keep bills as they were, or, as Ofwat itself envisaged, even for bills to rise. For example, where companies responded strongly to increased incentives and significantly improved their customer performance, it was recognised that "*customers might see higher bills than otherwise... in return for which these customers will benefit from considerable improvements in service*".²⁹ Companies were to engage consistently with customers on acceptable bill profiles throughout the PR19 process, keeping customer views and priorities central to their considerations.³⁰

2.10.8 Despite this initial enthusiasm, upon seeing the results of companies' customer engagement – as reflected in their business plans – Ofwat abandoned its view on the centrality of customers' views and instead stepped in to 'protect' customers from themselves through extensive interventions at DD and FD. While Ofwat continued to pay lip service to the importance of customers' views at FD,³¹ this was not reflected in the reality of its methodology. Far from only intervening where "*customers' interests need to be protected*",³² Ofwat stated that "*we do not think it is reasonable for [the values customers place on the same service] to vary so significantly*" by region.³³ Ofwat then sought to impose its own views (and target outcomes) over and above customers' priorities. Similarly, although YWS's Business Plan was supported by 86% of its customers SoC, paragraph 109, Ofwat decided that there was insufficient evidence that its customers favoured additional expenditure to provide high levels

²⁷ Exhibit 013, Delivering Water 2020, page 39.

²⁸ Exhibit 017 (SoC), PR19 Methodology, page 13.

²⁹ Exhibit 013, Delivering Water 2020, pages 72 and 80.

³⁰ Exhibit 017 (SoC), PR19 Methodology, pages 192, 194-195; Exhibit 013, Delivering Water 2020, page 6.

³¹ Exhibit 016, FD Overview, page 8.

³² Ibid.

³³ Ibid, page 25.

of service, despite acknowledging that this view had been endorsed by the Yorkshire Forum for Water Customers.³⁴

2.10.9 In summary, while Ofwat claims to have presented a balanced approach through PR19, there is clear evidence: (i) that from an early stage, it was keen to achieve (and, if necessary) impose lower bills on water companies; and (ii) that in the latter stages of PR19, Ofwat ignored YWS's customers' willingness to pay the same or more for better services, with a view to reducing the bill profile in the Business Plan.

2.11 Some aspects of the FD increased customer bills, while others reduced them. [Reply-005/2.36 and Figure 2.3] Contrary to YWS's argument that Ofwat has focussed on bill reduction at the expense of investment, the overall bill reduction in the FD is driven by a lower cost of capital, increasing number of customers and profile of spending. Ofwat has increased the allowance for investment at PR19. [Reply-005/2.37-2.39]

2.11.1 YWS does not agree with Ofwat's characterisation of the drivers of its reduction in bills. Ofwat seeks to position the bill reduction implied by its FD as: (i) being mainly driven by factors not due to Ofwat's policy choices and determinations (for example, the WACC); and (ii) that where Ofwat has made choices, some of these create upward pressure on bills, whereas others create downward pressure on bills for YWS. These assertions are incorrect.

2.11.2 To illustrate this further, the following table sets out the breakdown of YWS's allowed revenues. For each item, Ofwat's method choices are identified. As can be seen, where Ofwat had 'choices' to make, it systematically made ones which resulted in 'lower' allowed revenues for YWS. This blanket approach can be seen in how Ofwat has made decisions on issues such as PAYG and RCV run-off, Grants and Contributions and its late intervention on WRFIM,³⁵ as well as its suggestion to offset additional cost allowance in the household retail price control against a vast shortfall across the four regulatorily-separate wholesale price controls.³⁶ This is either a remarkable coincidence (i.e. in every case the objectively 'correct' method happens to result in lower allowed revenues relative to prior price controls) or it belies decisions taken to advance Ofwat's stated 'step change' policy.

³⁴ Exhibit 016, FD overview, page 75.

³⁵ Explained in further detail in Section 10.

³⁶ Explained in further detail at paragraph [2.3 and 3.13].

Allowed revenue component	Ofwat FD (£m)	Relevant Ofwat policy / method choices
PAYG	2,090.8	PAYG element made artificially higher by Ofwat making heavy use of the PAYG rate to bring money forward, in order to offset its policy choices that reduce allowed costs.
RCV run-off	1,335.2	<p>In terms of the key policy choices relevant to cost assessment, these are as follows:</p> <p>(i) Ofwat had to decide how to address variance in outcomes performance when determining efficient costs. It took a policy position of ignoring this issue. (ii) Ofwat had to determine where to set the cost efficiency benchmark (its proxy for the frontier). It departed from its previous position and set this at the 3rd and 4th most efficient firms. (iii) Ofwat had to determine the level of frontier shift. It departed from previous methods and set a level higher than previously determined. (iv) Ofwat had to determine how to allow for underlying input cost inflation. It departed from previous methods and only made a limited allowance for labour costs. (v) Ofwat had to determine how to capture growth expenditure. It chose to use ONS, rather than company, data on properties / customers, the lower of the two options available to it; (vi) in relation to enhancement, Ofwat had choices around the modelling of p-removal and the inclusion of a frontier challenge – in both cases it again made choices that gave lower numbers.</p> <p>As to Ofwat’s claim that it has allowed more investment, this is not due to any discretionary policy choice. Rather, it is primarily driven by WINEP, which is a statutory requirement. Therefore, it is incorrect to see this as Ofwat being ‘generous’ where it had discretion. Therefore, Ofwat’s claim that it has allowed more investment than in the past is misleading.</p>

Allowed revenue component	Ofwat FD (£m)	Relevant Ofwat policy / method choices
WACC	920.5	Updated market data does drive a material reduction in the WACC. However, where Ofwat has methodological discretion, it has made choices that, all else being equal, lower bills. Specifically, method changes relative to prior price controls contribute to reductions in TMR and RFR. The assumed benchmark for the cost of debt is inconsistent with Ofwat's financeability assumptions.
Revenue adjustments for PR14 reconciliation	68.1	Disallowed YWS's WRFIM claim (see Section 10 below).
Grants and Contributions after adjustment for income offset (price control)	128.9	NA
Deduct nonprice control Income	-18.1	NA
Revenue reprofiling	1.3	NA
Final allowed revenues	4,526.3	

Table 3: Ofwat policy / method choices.

2.12 Ofwat is entitled to take into account a wide range of relevant considerations, including (i) the concerns of independent third parties about Ofwat's historical settlements and (ii) companies' past performance. [Reply-001/3.16-3.19]

2.12.1 Ofwat's position that it did not have an overriding aim to reduce bills is further undermined by its own submissions in this redetermination.

2.12.2 It is clear from these that Ofwat's intention to impose an efficiency step change (and commensurate bill reductions) on the industry was motivated by its incorrect perception that historical outperformance of

water companies had led to outsized returns: *"It is appropriate for us to take this into account in deciding the level of overall stretch for PR19".*³⁷

- 2.12.3 It is also clear that Ofwat placed weight on the views of third parties who had criticised Ofwat for being too generous to water companies in prior price reviews: *"It would also be remiss of us not to take into account reports and views of expert third parties that have a bearing on the matters we are required to consider."*³⁸
- 2.12.4 As explained in paragraph 6.4.3 below, YWS does not contest the *principle* that the historical performance of the industry is a relevant consideration in deciding whether it is appropriate to impose an efficiency step-change at PR19.³⁹ However, the relevant question is whether that data provides support for such a decision in practice at PR19.
- 2.12.5 The answer is that it does not. As is irrefutably demonstrated in SoC, Section B and paragraph 2.5.3 above, objective analysis of the historical data does not reveal persistent and systemic outperformance of the water industry against prior regulatory settlements. In other words, the key motivating factor for Ofwat's step-change policy, and all of the decisions that it took during PR19 to give effect to that policy, is illusory.
- 2.12.6 Moreover, while Ofwat is indeed required to look at relevant information, the weight that it puts on that information when exercising its powers must be commensurate with the strength of the evidence supporting it. Since there is no evidence of historical outperformance, third-party criticism of Ofwat's prior regulatory settlements should have been given no weight at all.

2.13 Nothing in the resilience objective relieves companies from the requirement to demonstrate efficiency or offers a blank cheque for future expenditure. [Reply-005/2.9; Reply-001/3.50, 3.59] Meeting this objective is not always simply a matter of spending more money on enhancement projects. [Reply-001/3.58]

The resilience duty is in practice directed as strongly at water companies as it is at Ofwat because Parliament was concerned about the short-term focus of those companies. [Reply-001/3.51-3.53]

³⁷ Exhibit 001, Reply-001, paragraph 3.19.

³⁸ Ibid.

³⁹ Though YWS categorically refutes that it is appropriate for Ofwat to justify its actions by reference to outperformance in relation to individual building blocks of prior settlements in isolation, without consideration of the position at package level.

- 2.13.1 The first statement is a hyperbolic mischaracterisation of YWS's position. YWS is not asking the CMA to write a blank cheque for investment to improve the resilience of its network and it is fully aware (as outlined above) that the resilience objective must be balanced against the other aspects of the price control, including affordability of customer bills. What YWS *is* asking of the CMA is a redetermination that actually achieves this balance and thereby avoids the material harm to the long-term resilience of YWS's networks that would arise under the FD.
- 2.13.2 As will be explained in Section 12 below, there are a number of measures available to the CMA to achieve this outcome. Based on YWS's analysis the very least customers would receive by implementing these measures is a stable bill profile, though there remain opportunities to deliver a reduction. In view of the financial consequences on YWS's customers tomorrow that would result from failure to make the necessary investment in resilience today, this rebalancing of the FD can hardly be characterised as unreasonable, as Ofwat strains to do in its submissions. In short, it is a sensible and pragmatic solution to the inherent flaws of the FD.
- 2.13.3 Ofwat's suggestion that YWS considers the resilience duty to relieve it of the obligation to evidence its efficient costs is another obfuscation and a failure by Ofwat of engagement with the evidence. The real dispute between the parties in this area is: (i) whether the costs that YWS claimed in its Business Plan for investment in network resilience are efficient; and more broadly (ii) whether the FD would have a materially negative impact on YWS's resilience *at a package level*. These matters are addressed further in paragraph 11.3 below.
- 2.13.4 As regards Ofwat's statement that Parliament introduced the resilience objective because of concern about water companies' short-term approach, YWS would invite the panel to consider the following extract from DEFRA's 2016 report on enabling resilience in the water sector:⁴⁰

"Historically, companies have argued that Ofwat's efficiency challenge through the price review tends to prioritise concerns about short-term bill impacts over the case for investment in long-term resilience. Partly in reflection of this, the Government

⁴⁰ See Exhibit 017, Defra: 'Creating a great place for living: Enabling resilience in the water sector' (March 2016). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/504681/resilience-water-sector.pdf.

placed a new resilience duty on Ofwat through the Water Act 2014.”

2.13.5 Ofwat’s approach during PR19 clearly demonstrates that it has not altered its behaviour to move its focus away from short-term bill impacts towards long-term resilience, despite the HMG’s stated intention.

2.14 The choice between achieving short-term savings and delivering long-term investment is a false dichotomy. The real question is whether expenditure proposed by companies is efficient. Allowed expenditure built into RCV will potentially be paid for by future customers for decades to come. [Reply-005/2.10; Reply-001/3.32-3.35]

Companies have every reason to want to inflate their Totex allowance, so their claims must be tested. Testing does not equate to unwillingness to fund investment on the basis of a properly evidenced need. The onus should be on companies to provide sufficient evidence to prove that their claimed allowances are efficient. Ofwat only disallowed claimed allowances if there was no evidence to support them. [Reply-001/3.38-3.39, 3.44]

The Disputing Companies real complaint is that Ofwat has been less generous than they would like. [Reply-001/3.43, 3.62]

2.14.1 YWS does not believe that Ofwat’s duty to protect the interests of future customers *“immunise[s] companies against the need to demonstrate the efficiency of their proposed expenditure”* as Ofwat suggests.⁴¹ This is yet another unevidenced proposition that fails to engage with YWS’s submissions on this matter.

2.14.2 YWS categorically rejects both Ofwat’s contention that the proposed costs YWS submitted in its Business Plan were inefficient and the insinuation that YWS may have intentionally inflated its claimed Totex allowance. In this connection YWS would respectfully direct the CMA to SoC, paragraph 85 et seq., which describe the rigorous processes that YWS undertook to ensure that the Totex claimed in its Business Plan was efficient, including a self-imposed cost efficiency challenge of £800m and an extensive and multi-layered assurance review.

2.14.3 As explained in the SoC and Section 3 below, in truth the gap between the parties’ respective views on efficient costs arises because of both: (i) the numerous technical errors in Ofwat’s cost modelling; and more fundamentally (ii) the overarching errors of principle that Ofwat

⁴¹ Exhibit 003, Reply-005, paragraph 3.34.

implemented to further its objective of imposing an efficiency step change on the industry. In short, the gap arises because Ofwat has made mistakes, not because it has been less “generous” than YWS would like.

2.15 Asymmetry of information is exacerbated by the lack of a well-resourced consumer advocate to challenge companies’ plans. [Reply-001/3.39] Ofwat is currently considering the future role of Consumer Challenge Groups (CCGs) (or equivalent) for PR24, including how to better promote the independence of CCGs from companies. [Reply-005/2.17]

2.15.1 Ofwat’s contention that YWS’s CCG, the Yorkshire Forum for Water Customers (the **Forum**), did not provide sufficient challenge during PR19 does not stand up to scrutiny. Indeed, Ofwat’s assertion prompted the chair of YWS’s CCG to write to Ofwat jointly with others in the following terms:⁴²

“The implications are that each CCG endorses the relevant company plan, and acts as a substitute for the views of customers. Our CCGs have been assiduous in ensuring that this is not the case throughout their work and in their reports. And secondly, that each CCG has not acted in a way which is fully independent, with its independence from companies requiring “better promotion” in the future. We are absolutely resolute in our independence and do our utmost to ensure that this is the case. In the absence of objective evidence to suggest that our CCGs have not acted in a fully independent way, it is difficult to have such an assertion expressed in this way – among other things, the comment comes across as a poor reflection on the thousands of hours which CCG members have spent giving independent and challenging scrutiny to the company’s customer engagement, and the degree to which it is reflected into business plans.”

2.15.2 It is notable that the credentials of the members of the Forum to provide challenge are unimpeachable and do not in any way suggest that they may be “captives” of YWS.⁴³ YWS would request that Ofwat withdraws its remarks.

⁴² Exhibit 018, letter of [12 May 2020] to Ofwat from Jeff Halliwell (Independent Chair, Anglian Water Customer Engagement Forum), Melanie Laws (Independent Chair, Northumbrian and Essex and Suffolk Water Forum) and Andrea Cook OBE (Independent Chair, Yorkshire Forum for Water Customers) (**CCG Chairs Letter**).

⁴³ The credentials of the members can be found here: <https://www.yorkshirewater.com/yorkshire-forum-for-water-customers/>. The Chair, Andrea

2.16 There is no costs-outcomes disconnect. Ofwat has considered the Performance Commitments as a package to ensure that they are achievable. Companies are attempting to unpick selected parts of the package without considering it in the round. [Reply-001/3.65-3.66]

2.16.1 As explained in SoC, paragraph 152-187 and Section 6 below, Ofwat's statement is false. It is Ofwat that has failed to consider the effect of its interventions on YWS's Performance Commitment and ODI package overall, leading to distorted and uneconomic incentives, and a downside skew carrying a greater risk of ODI penalties. These interventions provide clear examples of how Ofwat implemented its flawed step-change policy, namely through numerous decisions taken in isolation and designed incrementally to "stretch" the industry, which together contribute to produce an overall regulatory challenge that is unachievable for the notionally efficient firm. Therefore, despite Ofwat's suggestion to the contrary, this issue goes directly to the question of whether it found the right balance between its statutory duties.

2.17 YWS interpretation of the financing duty is subject to two errors: (i) it reads into the statute words that are not there (e.g. references to financial metrics); and (ii) it characterises the duty as a sequence of binary tests and omits the need for regulatory judgment. [Reply-005/3.82-3.83; Reply-001/3.79-3.83]

2.17.1 Ofwat's financing duty under WIA91 s.2 requires it to exercise and perform its powers in a manner that it considers is best calculated "*to secure that companies holding appointments under Chapter 1 of Part 2 of this Act as relevant undertakers are able (in particular) by securing reasonable returns on their capital) to finance the proper carrying out of [their] functions.*"

2.17.2 YWS's SoC explained that it has hitherto been common ground between Ofwat and companies that, in practice, this requires that:⁴⁴

- (a) a notionally efficient firm should be able to earn profits in line with its cost of capital; and

Cook, was awarded an OBE for services to tackling fuel poverty, Tom Keatley is Natural England's Senior Adviser in Water and Land Use for the Yorkshire Area, and Chris Griffen is a former Director at Citizens Advice Rotherham, among others.

⁴⁴ YWS, SoC, paragraph 46.

- (b) the efficient firm's cash flows should enable it to raise finance on reasonable terms, including by maintaining an investment-grade credit rating.

2.17.3 It was a considerable surprise to see Ofwat take issue with this position in its Reply. YWS notes that Ofwat has on multiple previous occasions given an interpretation of its duty that is consistent with the interpretation set out in YWS's SoC. For example, in a 2011 paper that Ofwat quotes in its responsive submissions, Ofwat states:⁴⁵

"Consistent with the approach of other regulators, we interpret this duty as having two strands.

- (i) *An efficiently financed and operated company should be able to provide regulated services pursuant to the WIA91 and earn a return at least equal to its cost of capital.*
- (ii) *Price limits must secure that efficient companies can be financeable, such that a company's revenues, profits and cash flows are sufficient to allow it to raise finance on reasonable terms."*

2.17.4 Near-identical wording appears in several of Ofwat's price review methodology and decision documents.⁴⁶

2.17.5 The CMA has also taken a similar position in the past:⁴⁷

"A return below the cost of capital would not be consistent with the duty contained in section 2(2A)(c) of the WIA 1991 to secure that the company can finance the proper carrying out of its functions. [...]

We considered that 'finance' (as referred to in section 2(2A)(c)) is to be realistically construed and therefore includes both equity and debt and that we were not required to make any particular assumption about the balance between equity and debt. Our overall concern was to ensure that, at the gearing assumed in the WACC, our financial projections were consistent with Bristol Water retaining an investment grade credit rating."

⁴⁵ Exhibit 019, Ofwat: 'Financeability and financing the asset base' (2011). Exhibit 020, Ofwat: 'Setting price limits for 2010-15 – framework and approach' (2008), paragraph 16.

⁴⁶ See, for example, Exhibit 020, 'Setting price limits for 2010-15'.

⁴⁷ Exhibit 010 (SoC), Competition Commission: 'Bristol Water plc redetermination report' (2010), paragraph 9.2.

- 2.17.6 As such, there can be no doubt that analysis of both limbs in Ofwat's financing duty will be an important part of the CMA's task in the next six months.
- 2.17.7 As regards Ofwat's claim that interest coverage ratios and other financial metrics are irrelevant to (the second limb of) the financing duty, YWS strongly disagrees. As is explained in detail in paragraph 9.2.3 below, the opinions of ratings agencies are highly relevant, and in fact frequently determinative, to whether an efficient firm's cash flows enable it to raise finance on reasonable terms, because debt investors place considerable weight on the ratings that those agencies assign.
- 2.17.8 Ofwat attempts to dismiss consideration of interest cover and other financial metrics because they are not specifically mentioned in the WIA91 is a weak line of argument. These are the well understood and long-standing proxy measures against which compliance with the second limb of the financeability duty is routinely tested. Ofwat's argument is a completely untenable construct, designed to support its position that it is entitled to ignore the views of the ratings agencies in PR19. It would have been preferable if Ofwat had devoted the same attention to addressing the real issues to which the rating agencies' positions give rise for the sector.
- 2.17.9 Moreover, by irrationally failing to take into consideration information that is relevant to the assessment of the financeability of the notionally efficient firm, Ofwat has transgressed the public law constraints on the exercise of its statutory powers. In other words, Ofwat has indeed breached its financing duty. Reliance upon the words in the rubric of WIA91 s.2(2A) does not assist Ofwat here. It cannot reasonably consider itself to have acted in a way best calculated to ensure the financeability of the notionally efficient firm by ignoring information critical to that assessment.
- 2.17.10 If Ofwat had seriously intended to depart from the way in which financeability had been assessed over time, this should have been made explicit in the consultation phase of PR19 so that representations could have been made in response. That this did not take place reinforces the conclusion that Ofwat's position is an ex post facto justification for the outcome that it wanted to achieve.
- 2.17.11 As regards Ofwat's assertion that YWS is treating the financing duty as a series of binary tests, this is the precise opposite of its position. Specifically, in relation to equity returns, YWS's case is that, given the complexity of the price control and the uncertainty of the performance of an efficient firm, it is essential to undertake risk analysis that calculates

the spread of possible equity returns and key ratios, from which 'expected' equity returns can be calculated. Similarly, in relation to debt finance metrics, YWS has highlighted particularly important examples (from the perspective of ratings agencies) but again also highlights the need for risk analysis. More broadly at PR19, YWS's position is that financeability cannot be considered as a binary 'yes' or 'no' question. Rather, given Ofwat's method, the only sensible perspective is: 'what is the probability of an efficient firm being financeable'.⁴⁸

2.18 The water companies wrongly connect the financing duty with company-specific financeability analysis. [Reply-001/3.78]

Ofwat provided adequate funding for an efficient company with a notional capital structure, allowed short-term financeability constraints to be addressed through advancing revenues, and companies cannot divest themselves of their own responsibility to ensure they are financeable. [Reply-001/3.88-3.90]

2.18.1 Ofwat's first claim is patently false. As set out in SoC, paragraphs 277-281, YWS financeability analysis expressly concerns the notionally efficient firm. It is Ofwat that has conflated the two.

2.18.2 Furthermore, YWS refutes Ofwat's second statement. Ofwat has seriously mischaracterised key elements of YWS's capital structure, notwithstanding that this is of minimal relevance to this redetermination.

YWS's actual capital structure is not relevant to Ofwat's notional capital assessment.

2.18.3 Ofwat has placed significant emphasis on YWS's actual gearing in its submissions and its presentation to the CMA of 20 May 2020. In particular, Ofwat stresses that YWS is a "*highly geared company*" with gearing "*well above the notional level*". However, YWS's actual capital structure is plainly not relevant to this redetermination. Indeed, as Ofwat has itself noted, "*our long held view is that companies are responsible for their own choices around financing and capital structures*"⁴⁹ and "*we expect companies to take responsibility for their own financial structures*".⁵⁰

⁴⁸ Annex 01 (SoC), Economic Insight: 'Financeability of the notionally efficient firm, a bottom-up analysis.'

⁴⁹ Exhibit 003, Reply-005, paragraph 6.25.

⁵⁰ Exhibit 006 (SoC), YSP, paragraph 2.74; Exhibit 005, Ofwat presentation to the CMA.

2.18.4 Ofwat states that *"To the extent that Yorkshire Water's claims are influenced by its past financing choices, this is a matter for the company and its investors"*.⁵¹ YWS agrees that it is responsible for its actual capital structure and financing arrangements, however, it rejects outright the insinuation this has influenced the points raised during PR19 and within its SoC. At all times, YWS has raised its concerns on financeability in relation to a notional capital basis. Therefore, actual gearing above the notional level should have no impact on YWS's determination, although customers do benefit fully from YWS's increased gearing levels in assessed tax allowance.

2.18.5 YWS believes that the prominence that Ofwat gives this issue is evidence of the undue importance that Ofwat has assigned to gearing during PR19, which has influenced Ofwat's decision-making throughout the process and manifests itself again within the flawed evidence presented in Ofwat's submissions and presentations to the CMA.

Ofwat has conflated notional and actual data in its notional assessments.

2.18.6 Ofwat has conflated notional and actual data when seeking to provide evidence to support its notional assessments. Ofwat presents flawed evidence seeking to justify notional assessments based on the performance of companies with gearing close to the notional level, as if gearing were the sole defining factor of that company's performance, and appears to ignore other important factors.

2.18.7 Firstly, actual financial outperformance of listed companies does not support Ofwat's notional assessments. Ofwat clearly states that its notional assessment is based on the premise that an efficient company should be able to earn a return consistent with the base allowed return on equity, i.e. not a return that benefits from outperformance.

2.18.8 However, Ofwat seeks to justify its notional return based on the actual which have gearing close to the notional level. As explained in further detail at paragraph 7.6, YWS has identified a number of errors and omissions in Ofwat's analysis, which if corrected show that the companies have not been trading at a premium to RCV. These listed companies all have an actual cost of debt significantly below the notional level, resulting in material levels of financial outperformance and therefore inflating their share price. This level of financial outperformance is limited to the listed companies and cannot be used as an example for the sector as a whole.

⁵¹ Exhibit 003, Reply-005, paragraph 1.44.

- 2.18.9 As explained in further details in paragraph 7.5, Ofwat's industry wide notional cost of debt leads to a wide range of over and under performance across the sector, which is primarily based on timing rather than efficiency. In considering YWS's previous financing decisions, the appended Centrus report⁵² demonstrates that YWS's historic borrowing choices have been made efficiently.
- 2.18.10 As noted in the SoC, YWS believes a company-specific cost of debt provides a greater incentive for companies to efficiently manage their debt, in a similar manner to Totex incentives, to the benefit of their customers. This contrasts clearly with the current approach that creates a number of "winners and losers" and has little regard as to Ofwat's duty to ensure that companies are able to finance their activities.
- 2.18.11 Secondly, Ofwat seeks to evidence financeability on the basis that companies with gearing close to the notional level all have a rating at least two notches above investment level. This overly simplistic conclusion is also flawed as it fails to address the following key points:
- (a) Ratings assessments are based on a number of factors and not on gearing alone – a point which Ofwat makes on a number of occasions in support of its other contentions, but conveniently ignores in this case.
 - (b) Ratings assessments are based on actual performance, not notional performance. As clearly highlighted in Moody's recent sector announcement, there is a clear differential between notional ICR and the actual ICR of companies with gearing of approximately 60%. This means that listed company ratings reflect the benefit of actual financial outperformance discussed above and are not relevant to a notional assessment.
 - (c) It fails to recognise the benefit that ratings agencies assign to regulated securitised structures, which provides additional protections in the long-term interest of customers.⁵³
- 2.18.12 Ofwat has made references to YWS's plans to reduce future gearing and that these plans have changed throughout the PR19 process, in particular stating: "*the company has deferred proposals to improve financial resilience and reduce gearing levels through the PR19 process*".⁵⁴ This is incorrect and YWS has clearly stated in its PR19 submissions that its plans

⁵² Annex 07, Centrus: 'Yorkshire Water Debt Portfolio Review' (May 2020).

⁵³ See YWS, SoC, paragraph 274.

⁵⁴ Exhibit 051, Reply-008, 2.37.

for any gearing reduction were subject to the FD and conditions in the financial markets.

- 2.18.13 Ofwat's statement fails to reflect that it has continually reduced the allowed return throughout the PR19 process, made numerous interventions that have had a material financial impact to YWS's original Business Plan and resulted in a negatively skewed package of risk and return. YWS will continue to seek to reduce its gearing, but will need to present a suitable investment case for additional funds to be injected into the company.
- 2.18.14 YWS provides further detail in Section 6 of the imbalance in Ofwat's risk and return package and explain why this means that it is no longer a "fair bet" that YWS will be able to earn the base allowed return.
- 2.18.15 YWS's commitment to reducing gearing and improving resilience is evidenced by the fact that across the last six years it has only paid dividends to shareholders totalling £45m in comparison to potential notional dividends for the same period of £612m. In particular, no dividends from YWS have been paid through to shareholders since 2017/18 as the decision had been taken to reinvest outperformance achieved during AMP6 into improvements to best position YWS to deliver UQ performance in AMP7.

Ofwat's has made inaccurate statements in relation to YWS's swap portfolio.

- 2.18.16 Ofwat has made several inaccurate statements in relation to YWS's swaps portfolio. As set out in paragraph 7.5.8, YWS's swaps portfolio was implemented for legitimate financing reasons and at an efficient rate. This was done before the 2008 financial crisis so its current cost appears high in comparison to current rates; however, this would have been the position for any "normal" fixed rate debt issued at the same time.
- 2.18.17 YWS does not agree with Ofwat's decision to exclude swaps from its cost of debt assessment for the following reasons.
- 2.18.18 Firstly, YWS could not have reasonably foreseen the significant change in market conditions when it implemented the swap portfolio. A counterfactual exercise conducted by YWS's advisers shows that if it had been able to obtain the desired proportion of index linked debt through index linked bonds rather than swaps, its current average cost of debt would not be materially different.⁵⁵

⁵⁵ Annex 07, Centrus: 'Yorkshire Water Debt Portfolio Review' (May 2020).

- 2.18.19 Secondly, Ofwat has also clearly misunderstood YWS's position in relation to the notional company assumptions. YWS does not suggest that index-linked swaps were included within Ofwat's notional assumption of 33% of debt being index linked. YWS's argument was that there has been insufficient liquidity of "pure" index linked debt at certain periods of time to enable companies to achieve a 33% proportion of index-linked debt. The only way, in reality, to be able to achieve that proportion of index-linked debt has been through the swap market. Further evidence is provided in a report appended to this Response by Centrus.⁵⁶
- 2.18.20 Thirdly, a number of other companies within the sector have similar index linked derivatives within their debt portfolio; therefore to portray YWS as particularly 'risky and complex' in comparison to the rest of the sector is inaccurate. The issues in relation to YWS's swap portfolio are primarily ones of timing, rather than efficiency, over which YWS has no control.
- 2.18.21 Fourthly, Ofwat has noted there are 'losses' arising from YWS's derivatives with references to recent comments made by Moody's and a fair value gearing of 130% which YWS does not recognise. Again, these relate to matters regarding YWS's actual capital structure and should not have a bearing on a notional firm assessment. However, it is important to correct some of Ofwat's comments regarding the amount of 'losses' that it has noted.
- 2.18.22 The amount quoted by Ofwat is the mark-to-market valuation of the derivatives portfolio, which is calculated from estimates of future market rates for derivatives going out five decades. Consequently, this valuation may be positive or negative depending on long-term views of rates and inflation that are used to estimate potential future cashflows. The valuation moves daily and the year-end position is reported in YWS's statutory accounts as a snapshot each year at 31 March. It is not correct to think that a negative valuation will crystallise as a loss at any point in time nor that the fair value should be included in any gearing assessment.
- 2.18.23 On the basis of the above comments, YWS does not believe that Ofwat is presenting YWS's past financing decisions and actual capital structure in a fair and balanced manner, notwithstanding that there is minimal relevance to the redetermination to be undertaken by the CMA. YWS

⁵⁶ Annex 07, Centrus: 'Yorkshire Water Debt Portfolio Review' (May 2020).

refutes the claims that it has sought to divest itself of responsibility to ensure it is financeable.

2.19 Ofwat fulfilled its financing duty because it carried out a high volume of economic and financial analysis during PR19. [Reply-001/3.7]

2.19.1 This argument is plainly fallacious – nothing can be inferred about the decisions that Ofwat took solely from the amount of analysis it carried out. In any case, Ofwat did not undertake any risk analysis at all and the financial analysis it undertook was fundamentally flawed. These points are addressed in Sections 6 and 9 below.

2.20 Ofwat fulfilled its financing duty because it ensured that companies' allowed revenues would be sufficient for an efficient company to finance its investment on reasonable terms and therefore secure that it could properly carry out its functions. [Reply-001/3.77]

2.20.1 This statement is tautological and therefore provides no basis for the proposition it seeks to prove.

Further statements of Ofwat on PR19

2.21 Ofwat must perform checks to ensure that the level of regulatory challenge is achievable. [CCIP/2.7]

2.21.1 YWS agrees with this statement. However, one of Ofwat's failings in PR19 is that it did not effectively carry out such checks.

2.21.2 Robust risk analysis is fundamental to determining whether the PR19 settlements are consistent with Ofwat's financing duty. This is because the expected profits and cash flows of an efficient firm are dependent on its performance relative to regulator-set targets (e.g. ODIs and Totex).

2.21.3 As explained in SoC, paragraph 135 et seq., Ofwat has created a significant step change in performance in a number of key areas (such as the UQ performance required in relation to the comparable Performance Commitments) with no additional funding. These aggressive performance improvements are enforced through material penalty risk in the event of failure to meet the Performance Commitments. Because significant value is at risk, Ofwat should have made careful checks to ensure that the required level of challenge was indeed achievable.⁵⁷

⁵⁷ Specifically, that it reflects the expected performance of an efficient firm.

2.21.4 Ofwat suggests that its FD is consistent with a symmetrical balance of risk for an efficient firm, whereas YWS believes risk is heavily skewed to the downside. In Annex 2 (SoC),⁵⁸ Economic Insight examined Ofwat's approach to risk analysis, concluding that Ofwat undertook insufficient analysis in setting its risk ranges:

- (a) As regards ODI's, Ofwat merely set the P50 (most likely performance level) equal to its proposed Performance Commitment level. It made no attempt to evaluate where P50 was likely to sit in practice. This is akin to saying 'the expected performance level is whatever the target is'. Ofwat's approach is further flawed because it transposed company proposed risk ranges around its Performance Commitment levels, thereby under-stating downside risk and over-stating upside potential. Ofwat's approach to inferring 'overall' ODI package risk is also flawed, as it is based on 'adding up' risk ranges for the individual ODIs, and then making arbitrary and illogical adjustments (including an asymmetric adjustment for 'pessimism bias').
- (b) As regards Totex, Ofwat's approach to determining risk ranges is based entirely on industry average out / under spend against PR14 Totex allowances. Whilst this is a relevant source of information, it is insufficient in and of itself for robustly determining Totex risk at PR19 at an individual company level.

2.22 The water sector faces challenges from climate change, a growing population and increasing customer expectations. At the same time the sector needs to improve the affordability of an essential service. [YSP/2.1]

2.22.1 YWS agrees that with the first statement. While YWS also considers that it is essential to keep bills as affordable as possible, the necessity of meeting the challenges posed by the listed factors puts upwards cost pressure on all water companies – thus there is an inherent tension between the two objectives.

2.22.2 Ofwat's contention – that service and resilience can increase whilst bills reduce in the face of climate emergency is at odds with the stance taken by the other UK economic water regulator; the Water Industry Commission for Scotland (**WICS**). In its recent publication; Strategic

⁵⁸ Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the final determinations (March 2020).

Review of Charges 2021–27 Final Decision Paper⁵⁹ WICS considered the pressures facing Scottish Water and stated that:

*“The Commission has concluded that average annual charges have to increase by at least 1% and, potentially, up to 2% above the rate of Consumer Price Inflation (CPI). The Commission considers that increases in the top half of that range are most consistent with the long-term challenges that Scottish Water has to meet.”*⁶⁰

*“Given the extent of the challenges in addressing the climate emergency, highlighted by the Scottish Government, Scottish Water should have the right to expect customers, communities and stakeholders to support it – provided, of course, that Scottish Water provides the evidence that it is worthy of their support.”*⁶¹

*“This Decision Paper takes account of the emerging evidence on the challenges that Scottish Water faces and the Scottish Ministers’ expectations for the water industry in Scotland. The Commission’s view on the appropriate range for charges reflects these challenges. It is not about minimising charges in the next regulatory control period and leaving future customers to pay higher prices. This would be inconsistent with the Commission’s duty to future customers. To meet these challenges, Scottish Water will have to transform how it operates and how it manages its assets, how it invests and how it plans for the future. The transformation is much greater than that required by the merger of the three water authorities in 2002.”*⁶²

2.22.3 The findings of WICS are in stark contrast to Ofwat’s assertion that companies can improve service and take the necessary steps to ensure future resilience purely through technological advances that increase efficiency. This position is further weakened by the fact that Ofwat has already accounted for efficiency delivered via technological advances through the 1.1% frontier challenge that returns this efficiency to customers in the form of a lower bill in advance.

⁵⁹ Exhibit 021, WICS : ‘Strategic Review of Prices 2021-27 : Final Decision Paper’ (2020). <https://www.watercommission.co.uk/UserFiles/Documents/20217%20FDP%20Prospects%20for%20Prices.pdf>, page 2.

⁶⁰ Ibid, page 2.

⁶¹ Ibid, page 4.

⁶² Ibid, pages 4-5.

- 2.22.4 Ofwat has maintained this approach in these redetermination proceedings, where it now unjustifiably seeks to portray any cost increases as examples of companies seeking to exploit their customers to earn excessive returns. This is an allegation that YWS categorically and unconditionally refutes.
- 2.22.5 Moreover, it is socially and environmentally responsible to ensure the price path properly reflects water being an increasingly scarce resource. To not do so harms both the environment and future customers. Ofwat has not provided any evidence that this absolutely critical issue has been considered at all.
- 2.22.6 The process Ofwat has employed to reach its FD has led to significant shortfalls in allowed costs to deliver essential services and improve resilience and a downside skew in risk that leaves YWS in a forecast penalty position (ahead of management mitigation) in excess of £150m – see SoC, paragraph 283. As discussed in SoC, paragraph 284, the unavoidable consequence of this shortfall is that YWS has to step away from its Business Plan and adopt short term measures to attempt to avoid excessive penalties.
- 2.22.7 In SoC, paragraph 295, YWS presents some of the steps it is forced to take should the FD stand. These include not replacing asset life expired assets – pushing that cost into future AMPs. The shift away from a well-balanced plan is demonstrated in the shift between “fast” (operating expenditure) and “slow” (capital expenditure) money between YWS’s original Business Plan and the FD. In Ofwat’s ‘Reference of the PR19 final determinations: Explanation of our final determination for Yorkshire Water’ this is demonstrated in the shift between fast and slow money in the ‘pay as you go’ PAYG rate⁶³:

⁶³ YSP, page 13.

Table 2.1: Summary of key metrics

Wholesale	Revised business plan (April 2019)	Draft determination	Company view (August 2019)	Final determination
Wholesale totex, 2020-2025 (£million, 2017-18 CPIH deflated prices) ¹²	4,850.6	3,998.1	4,472.9	4,120.1
PAYG rate %	52.0%	53.4%	-	61.6%
Wholesale allowed return (% - CPIH basis)	3.30	3.08	-	2.92
RCV run-off (%)	3.76	3.75	-	3.75

2.22.8 The table shows that the interventions made by Ofwat between IAP and FD result in a movement of 9.6% – creating an increase in fast money, reducing the amount of money to be used longer term investments such as asset replacements. This shift also includes Ofwat’s decision to accelerate approximately £100m of revenue from future periods to resolve a financeability issue it has itself created – YWS can see no rationale for this as it effectively replaces revenues that should be allowed in the first place and creates intergenerational unfairness.

2.23 Ofwat made clear throughout PR19 that it expected companies to make a step change in efficiency. [YSP/2.9]

2.23.1 This is a constant refrain from Ofwat but it does not in and of itself support its view that the FD is justified or justifiable.

2.23.2 As set out in detail at paragraph 2.10.3 above, is agreed that Ofwat did indeed explain that it expected companies to achieve a step change in efficiency (and a commensurate reduction in bills) in PR19, even before it had finalised its methodology and carried out its economic analysis. YWS conscientiously addressed this expectation and put forward a Business Plan that contained a significant challenge on costs and outcomes in response, as explained in SoC, paragraph 89 et seq.

2.23.3 However, the relevant question is whether Ofwat’s interventions in YWS’s Business Plan has set the relevant regulatory challenge at the appropriate level. As explained in SoC, paragraph 72, YWS was entitled to expect that any efficiency and performance challenges imposed by Ofwat would recognise YWS’s starting point on efficiency, would be the result of well evidenced analysis, would be realistic and achievable within AMP7, and would be balanced against Ofwat’s other key themes for PR19 and its other statutory duties such as resilience and sustainability. As is

explained throughout the SoC (and again in this Response) Ofwat did not achieve the required balance and set an FD that posed a regulatory challenge beyond what the notionally efficient firm could achieve – a fundamental flaw in Ofwat’s architecture of PR19.

3. Regulatory challenge on costs

Overview

This Section rebuts assertions that Ofwat has made to justify its approach to establishing efficient costs.

Ofwat argues that it has allowed costs for all but two very small items and that its approach to modelling base and enhancement costs was appropriate. Ofwat also suggests that YWS has made use of any informational asymmetry for its own ends and that it considers its customers should pay for inefficiency and for poor performance.

Ofwat's suggestions are incorrect. In fact, the evidence shows that:

- Ofwat's models do not distinguish between cost differences due to inefficiency and those due to other factors such as model error.
- Ofwat has applied arbitrary and unevidenced catch-up efficiency benchmarks creating an extreme and undeliverable stretch overall when combined with all the other challenges.
- Ofwat has not appropriately accounted for changes in future cost drivers leaving YWS underfunded to address these.
- Ofwat's assumptions as to the achievable frontier shift are flawed and its application of this result in a "double counting" of efficiency benefits.
- Ofwat has failed to take account of all relevant real price effects (pressures) that YWS faces.

Moreover, it is shown that:

- Ofwat has now conceded that its decision to increase the stringency of the benchmark was (in part) results driven.
- Ofwat's approach cannot predict YWS's efficient cost level in AMP7 robustly.
- Inclusion of service quality cost drivers in Ofwat's models shows that YWS is cost efficient on wastewater.
- Ofwat has failed to show that its models adequately control for legislative cost drivers for phosphorous removal.

Introduction

- 3.1.1 As explained in SoC, paragraph 188 et seq., the way in which Ofwat has gone about setting YWS's efficient cost allowance for base and enhancement expenditure is seriously flawed in a number of material respects. In particular:
- (a) Ofwat's models do not take account of the expected performance improvements and therefore cannot distinguish between cost differences due to inefficiency and those due to other factors, leading Ofwat to set inappropriately modelled costs;
 - (b) Ofwat has sought to increase the cost-efficiency challenge by applying arbitrary and unevidenced catch-up efficiency benchmarks;
 - (c) Ofwat has not appropriately accounted for changes in future cost drivers (including changes in service performance measures);
 - (d) Ofwat's assumptions as to the achievable frontier shift are flawed and its erroneous application of this to certain costs results in its double counting such challenge; and
 - (e) Ofwat has failed to allow all efficient enhancement costs.
- 3.1.2 The overall effect of these errors is that Ofwat has allowed insufficient funding for YWS to deliver its Business Plan. When combined with the flaws in the FD relating to Ofwat's other two building blocks for PR19 (i.e. outcomes and WACC/financing), this underfunding will cause significant long-term harm to YWS, its customers and the environment, as described in SoC, Section H and Section 11 of this Response.
- 3.1.3 As also noted at SoC, paragraph 203, YWS (and other water companies) made a number of representations to Ofwat on the flaws in its cost modelling throughout the PR19 process, yet Ofwat failed to remedy them adequately. In particular, the various 'solutions' that Ofwat proposed in the FD were insufficient to address the scope of the underlying problem. In other cases, Ofwat chose to defer the problem, by proposing that the acknowledged flaws in its models (e.g. in relation to growth costs) could be adequately dealt with via reconciliation mechanisms in PR24 (a proposition with which YWS does not agree).
- 3.1.4 This section considers Ofwat's various submissions in these redetermination proceedings in relation to costs. As will become evident,

Ofwat's submissions provide no further justification for its position. In summary, the key points are as follows:

- (a) As regards the flawed catch-up efficiency benchmark, Ofwat has conceded that its decision to increase the stringency of the benchmark was in part results-driven, and the evidence it relies on to support this is highly selective. It is particularly noteworthy that none of Ofwat's responses negate the concerns YWS raised about the uncertainty inherent in Ofwat's econometric modelling. Moreover, it is now clear that uncertainty in Ofwat's models generally increases when the models are estimated using forward-looking data. Importantly, the quality of the models themselves tends to deteriorate, suggesting that the models are not reliable predictors of AMP7 expenditure. This means that Ofwat's approach of extrapolating the results of its models when run with historical data cannot predict YWS's efficient cost level in AMP7 robustly. Despite this Ofwat continues to place complete reliance on the model results.
- (b) On the missing service quality cost drivers in its models, Ofwat's alleged rebuttals are founded on a misinterpretation of YWS's analysis. This issue is of significant importance, because the inclusion of such cost drivers in wastewater models shows that YWS is broadly cost efficient on wastewater, despite Ofwat's claims to the contrary. Ofwat's claim that YWS is one of the least efficient companies in the industry is therefore highly misleading.
- (c) In relation to the overstated frontier shift target, the new evidence presented by Ofwat does not address the fundamental limitations of its approach and Ofwat continues to apply this in areas that result in double counting.
- (d) Ofwat has also failed to refute YWS's contention that its models do not adequately control for legislative cost drivers for phosphorous removal. This accounts for the majority of YWS's alleged "inefficiency" in this area.

Ofwat's general remarks

3.2 Customers should not pay for inefficiency where their company needs to catch-up to an efficient level of performance. [CCIP/3.3; Reply-005/3.8]

3.2.1 YWS agrees with this statement. However, in giving effect to this approach it is essential that Ofwat has proper regard to which companies are efficient and which are not. As explained in SoC, paragraph 190-197,

and further below, Ofwat's cost models do not allow it to distinguish between cost differences caused by managerial inefficiency and those caused by other factors. Ofwat has failed to include all the relevant cost drivers and made arbitrary and flawed choices of catch-up efficiency benchmarks. This key fact is important to keep in mind when assessing the validity of Ofwat's various assertions about the relative efficiency of water companies in its submissions.

3.2.2 As is demonstrated in Annex 11, when Ofwat's econometric models are corrected to include the overlooked service variables, Ofwat's claims as to YWS's inefficiency are not valid. This analysis does not take account of Ofwat's inadequate approach to setting the benchmark and its unrealistic assumptions about frontier shift. Ofwat should now retract its misleading claim that YWS is inefficient in wastewater and acknowledge that this error was a result of mis-specified models.

3.3 Poorer performing companies should face both catch-up and frontier shift efficiency challenges. [CCIP/3.4; Reply-006/2.2]

3.3.1 YWS agrees that firms behind the efficiency frontier should face both types of efficiency challenge. However, the real questions are whether the level of those challenges has been correctly set and whether they have been applied appropriately. As explained in SoC, paragraphs 190-201, and further below, Ofwat has failed to do so in the FD.

3.4 Table 2.3 of Ofwat's YWS-specific paper accurately sets out the differences between Ofwat's and YWS's respective views on efficient costs. [YSP/2.14]

3.4.1 This table sets out the difference between Ofwat's FD and YWS's position as shown in YWS's DD representations. As explained at SoC, paragraph 122, YWS offered to tolerate Ofwat's disallowing £300.5m in enhancement expenditure in the DD representations, in an effort to reach a compromise and avoid redetermination proceedings. However, this offer was conditional on Ofwat accepting the totality of YWS's position in the DD representations. It is categorically not the case that YSP/Table 2.3 reflects the true difference between the parties' respective views on the level of efficient costs, as Ofwat is very well aware. This is, rather, set out in SoC, Section F.

3.5 Company business plans are not a good guide to outturn expenditure: save for YWS in PR14 each of the four Disputing Companies has consistently overestimated expenditure in the four

previous AMPs. Ofwat's expenditure allowances tend to be a better guide to outturn expenditure. [Reply-006/2.8]

- 3.5.1 As explained by Ofwat, YWS outturn expenditure for PR14 is in line with the its Business Plan, so the general statement is untrue for YWS.
- 3.5.2 It is not clear what point Ofwat is attempting to make here. Once the expenditure allowance has been set for companies through the price review process, there are strong incentives for companies to stay within it, even if it is lower than that proposed by companies in their respective business plans. This is a fundamental feature of the regulatory incentive framework, and so it is not surprising that companies' outturn matches the cost allowances. However, it cannot be inferred from this that the expenditure allowance was set at the 'right' level for the company, nor that company business plans were correct at PR14. Similarly, it has no bearing on whether cost allowances have been set correctly for PR19.

Why Ofwat considers the overall level of regulatory challenge on base expenditure to be reasonable

3.6 Northumbrian Water is supportive of Ofwat's base cost econometric models. [Reply-006/3.8]

- 3.6.1 The view of a single Disputing Company is obviously not determinative.

3.7 Six water and wastewater companies have business plan base costs below Ofwat's efficient level of base costs. None of these companies has asked for a redetermination. [CCIP/3.7; Reply-006/2.10]

- 3.7.1 There is no logic to this argument. If Ofwat has allowed some companies to recover costs greater than those allowed in their respective business plans, then (all else being equal) such companies would not have any reason to seek a redetermination by the CMA.
- 3.7.2 If Ofwat's contention here is to suggest that some companies continue to perform better than Ofwat's base cost models, then it should be noted that this is not a true representation of the overall regulatory challenge on costs. Other than Hafren Dyfrdwy and Portsmouth Water, both of which are outliers in the sample, all companies have an overall Totex gap (i.e. their own assessment of overall efficient cost exceeds Ofwat's).
- 3.7.3 More generally, the CMA should bear in mind that this type of argument – which runs throughout Ofwat's submissions – is not supported by a number of companies which accepted their FDs. Indeed, as Southern Water succinctly put in its third-party submission:

*"As I believe it will have been for many companies, accepting Ofwat's PR19 Final Determination was a finely balanced decision for Southern Water... Our acceptance of the determination should not therefore be interpreted as accepting that Ofwat had, in all cases, arrived at the correct balance of costs, outcomes, and financeability."*⁶⁴

3.8 In comparison to historical base costs, Ofwat's final determination reflected a 3.0% efficiency challenge over five years (after allowing for inflation) compared to historical expenditure. [CCIP/3.7; Reply-006/2.10] The challenge for three of the four Disputing Companies (including YWS) is less than 3%. [Reply-006/2.11] Overall Ofwat's base cost allowances were only 0.4% below company business plans. [CCIP/3.8; Reply-006/2.10]

3.8.1 These are examples of another common and specious type of argument by Ofwat, namely to assert that its actions in relation to each company individually is justified by statistics that reflect the average of such actions across the entire industry. Very little about the former can be inferred from the latter.

3.8.2 Ofwat's comparisons on base costs between companies' business plans and the FD do not account for the reallocation of costs between enhancement and base which have occurred throughout the price review process, nor does it include the additional costs required for delivering service improvements. In fact, Ofwat's allowance for YWS was 15.6% lower than the amount requested in its Business Plan,⁶⁵ a significantly greater efficiency challenge than the industry average. YWS also notes that Ofwat has advanced no evidence in this redetermination in support of its decision in this regard.

3.8.3 Given the significant flaws in Ofwat's cost modelling, not least the arbitrary choice of benchmark and the failure to account for service performance, YWS has little confidence that Ofwat has accurately identified the efficient level of costs. It follows that the percentage efficiency challenge cannot be accurately identified either.

3.9 Some companies proposed a base expenditure that was lower than their own historical spend by as much as 15%. [Reply-006/2.10] Yet

⁶⁴ See Southern Water: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ec502e886650c2794d750c7/Southern_Water_submission.pdf.

⁶⁵ This figure is calculated by comparing the £5152.5 in the Business Plan to the £4,346.2 allowed by Ofwat in the FD. This is the overall plan level (gross and including retail, using 2017/18 prices).

Anglian Water proposed a 15.7% increase over its historical base expenditure. [CCIP/3.8] YWS's Business Plan included higher base costs than its historical spend. [YSP/1.7] Overall, YWS's Business Plan represented a 29.5% increase on historical spend during AMP6. [YSP/2.10]

- 3.9.1 In comparing the PR19 base costs to the period between 2014-15 and 2018-19, Ofwat characterises YWS as requesting an increase of 2.2% compared to the previous price review period. However, this only serves to illustrate a problem with using selective data sets. If the five years of historical data is updated to include the latest 2019-20 expenditure, then it actually shows that YWS's requested base costs for AMP7 are lower than those for AMP6.⁶⁶
- 3.9.2 Indeed, there are legitimate reasons why an individual company's base maintenance requirements may vary between five-year investment cycles, particularly in relation to capital maintenance. This blunt comparison not only exposes Ofwat's fundamental misunderstanding about how asset investment occurs over time across the industry, it also shows how divorced the concepts of costs and levels of activity have become for Ofwat.
- 3.9.3 Ofwat's comparison of the overall plan of costs between price review periods clearly fails to take account of the level of activity being delivered in those periods. As Ofwat is aware, YWS's Business Plan included an increase in total costs compared to the previous period due to:
- (a) statutory enhancement requirements resulting from the WINEP, an increase of £800m compared to the previous period;
 - (b) significant increases in performance levels;
 - (c) increased activity across the wholesale asset base to maintain assets; and
 - (d) additional pressures on operating expenditure requirements for Traffic Management Costs, Business Rates and IT Security and Software licencing, which have to be absorbed into a lower Opex budget overall.
- 3.9.4 The graph below illustrates the key components of additional total expenditure (excluding retail) compared to the previous investment period:

⁶⁶ The 2019-20 cost data is currently being audited and will be available in July 2020 when published as part of YWS's Annual Performance Report.

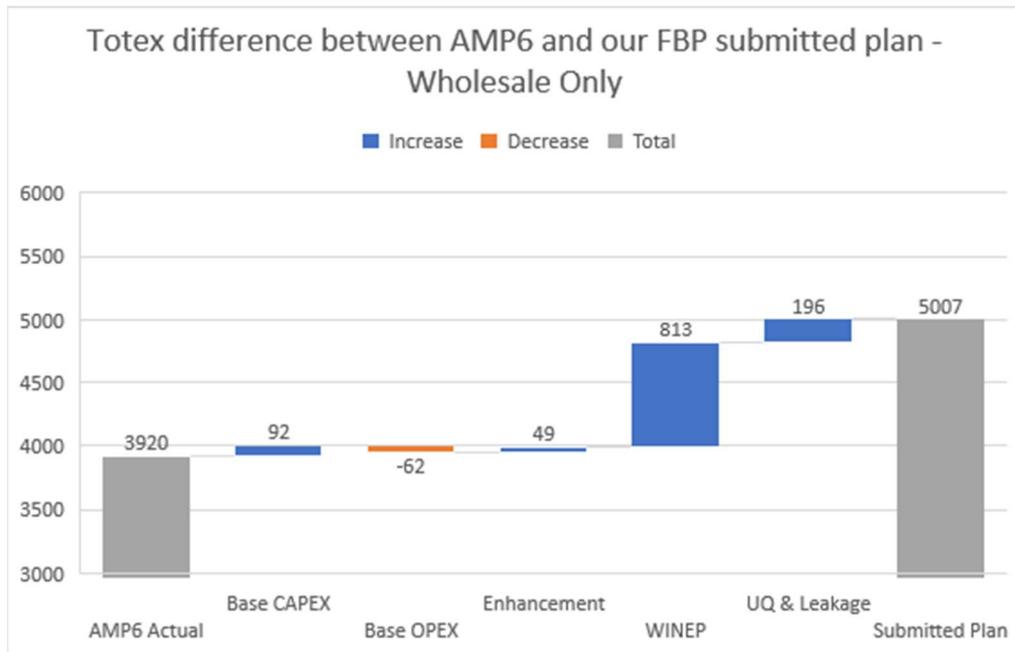


Table 4: Totex difference between AMP6 and YWS s Business Plan wholesale only.

3.10 YWS’s base wholesale wastewater costs were the least efficient in the industry. [YSP/2.10] YWS’s low ranking in wastewater cost efficiency resulted from 2019 data reflecting the investment it made in preparation for the anticipated performance challenges in PR19. [Reply-005/3.11-3.13]

3.10.1 This first statement is false and inconsistent with Ofwat’s submissions in these redetermination proceedings (see CCIP/Table A1.3). As explained in SoC, paragraph 190-197 and Annex 11 of this Response, Ofwat’s assessment that YWS’s wastewater costs are inefficient is a manifestation of Ofwat’s flawed cost models and assessment framework. As part of YWS’s Business Plan submission in 2018, Oxera showed that on an outturn basis YWS’s wastewater cost was very close to the efficient benchmark. When the analysis is updated to accommodate the latest two years of data, this outturn position is largely unchanged. More importantly, Oxera show that when the cost models (estimated on outturn data) are modified to control for p-removal and service quality, the gap between YWS’s proposed expenditure and Ofwat’s view of its efficient level of expenditure can be fully explained even under Ofwat’s inappropriate assumptions regarding the choice of benchmark and frontier shift.

3.10.2 The second statement seeks to incorrectly characterise YWS as inefficient in wastewater due to higher costs in 2019. Not only were these costs in line with the PR14 cost allowances, it is part of the normal expenditure

cycle for the industry to have higher cost in the later years of the AMP, as Ofwat is well aware. It is also difficult to reconcile the generalised accusations Ofwat makes about the industry underspending cost allowances with the subsequent regulatory action to increase efficiency challenges when companies spend those allowances.⁶⁷

- 3.10.3 Ofwat's characterisation also fails to recognise that the FD efficiency position was partly the result of an increase in the stringency of the applied benchmark. By its own admission, Ofwat changed the benchmark because it considered too many companies were assessed as efficient after the addition of the 2018-19 data.
- 3.10.4 Putting aside the wider questions of whether the models are accurate and the choice of benchmark justified, Ofwat also made errors in the model data inputs which result in YWS incorrectly appearing more inefficient. For example, at the DD stage, YWS identified that the population equivalent (*p.e.*) and load values in the wastewater model did not include 'communal populations' (i.e. hospitals, prisons, nursing homes etc., where there is multiple occupancy but are only registered as a single customer). YWS provided the updated data as part of the representation to correct the error. For the FD, Ofwat acknowledged the update in relation to the WINEP enhancement models but inexplicably failed to also update the base expenditure models. It is unclear whether this was an oversight or an intentional omission.

Why Ofwat considers that its overall cost allowance for YWS is sufficient

- 3.11 The FD allowance covered almost the full scope of work YWS proposed in its Business Plan, the only omissions being (i) £1.5m for costs that will not be required owing to Defra's planned metaldehyde ban and (ii) £0.3m for short-term supply-demand balance enhancements. [YSP/1.15] Ofwat allowed all costs proposed by YWS that were well-evidenced and efficient. [YSP/2.4]**

- 3.11.1 YWS does not agree with this statement, which is, in essence, another way of Ofwat saying that its cost modelling correctly identified the efficient costs necessary to deliver YWS's Business Plan. As Ofwat has failed to appropriately consider the link between allowed efficient costs and the expected service delivery levels and made numerous modelling errors in the assessment of efficient costs, it follows that the full scope of work is not covered by YWS's Totex allowance.

⁶⁷ Exhibit 004, Reply-006, paragraph 2.8.

3.12 The FD included a wholesale Totex allowance that was £122m higher than the DD. [YSP/1.17] The FD provides 3.1% more wholesale expenditure and 6.5% more wholesale allowed revenue than the DD. [YSP/2.8]

3.12.1 YWS agrees that Ofwat increased its cost allowance in the FD. However, it remains the case that Ofwat has materially underfunded YWS. As set out in table 8 of the SoC, there is still a gap of £366m between Ofwat's allowance for items such as Traffic Management Costs, Business Rates, growth, resilience and other enhancement expenditure on the one hand and that required by YWS on the other. Similarly, as demonstrated in Annex 11, Ofwat's failure to account for service expectations in the base cost allowance approach results in significantly lower funding than is required to deliver performance. Section 12 details the potential magnitude of the under-allowance.

3.13 YWS was allowed £49m more than it requested for residential retail costs. [CCIP/1.18]

3.13.1 The position of a company's efficiency assessment on the different price controls is irrelevant, they are each discrete and binding areas of expenditure, particularly in the case of retail and wholesale costs. Although both of these are assessed using econometric approaches in broad terms, they are fundamentally different activities to which different methods are applicable. As the other Disputing Companies have not raised retail costs as a substantial issue, this would suggest that Ofwat's retail costs assessment does not suffer from the same limitations as that for wholesale costs. Relatedly:

- (a) companies cannot directly offset out/underperformance on costs in one price control with another. Even if that was possible, the £49m "extra" in retail does not compensate for the £724 under-allowance in wholesale;
- (b) the existence of the extra allowance in retail does not address any of the fundamental methodological flaws in Ofwat's wholesale approach; and
- (c) the additional funding is not unique to YWS, as seven other companies proposed lower costs than Ofwat's allowance.

Why Ofwat thinks the productivity of the water sector should improve

3.14 Water sector productivity has stagnated. Based on evidence that the sector responds to challenges set by Ofwat and the availability of

the new innovation fund, companies can and should improve productivity in 2020-25. [CCIP/3.11, 3.46; Reply-006/2.3-2.4]

- 3.14.1 Ofwat's representation of productivity misrepresents the analysis by Frontier Economics for Water UK. That study attempted to estimate productivity in the water sector controlling for quality improvements. The observation by Ofwat that productivity in the sector has fallen is primarily, but not solely, due to the study's ability to account for quality improvements up to 2011 but its inability to account for quality improvements after 2011. As stated by Frontier Economics, "*As currently estimated and illustrated in Figure 1 [of estimated annual productivity], the impact of quality improvements appears to diminish since 2005. However, this partly reflects the conservative measures of quality that were used for the analysis given data availability. The measures we have used to capture quality improvements reflected the focus of investment in the earlier period under review. The emphasis of quality investment in later years has focussed on other dimensions which are not well captured by the measures included in this study, due to the shortage of comparable data on these dimensions covering the whole period."⁶⁸ [emphasis added]*
- 3.14.2 Moreover, the productivity performance of comparator sectors has also diminished. Frontier Economics, in the same study, state that, "*since [the global financial crisis in 2008], the UK's productivity growth and the productivity growth of comparator sectors has been negative.*"⁶⁹
- 3.14.3 YWS does not dispute that companies can and should improve productivity and indeed, YWS's Business Plan included significant productivity improvements. However, it is the speed of challenge that has evidently been misapplied by Ofwat (see paragraph further below).
- 3.14.4 YWS supports the creation of the Innovation Fund, as innovation is clearly a key part of improving productivity. However, the fund is of recent creation so unsurprisingly is yet to deliver tangible results and, even were that not the case, it is unreasonable to expect that a £200m fund shared across the industry will address the productivity challenge of the scale and pace imposed by Ofwat. Innovation takes time to emerge and mature and the benefits of the fund are unlikely to be realised in the timescales expected by Ofwat for PR19.

⁶⁸ Exhibit 022, Frontier Economics: Productivity improvement in the water and sewerage industry in England since privatisation' (September 2017), pages 3 to 4.

⁶⁹ Ibid, page 4.

3.14.5 YWS has a long track record as one of the most efficient companies in the sector, the result of significant innovation programmes, advances in technology and finding new ways of working. For example, since June 2018, over 40,000 acoustic loggers have been deployed across the Yorkshire region. These loggers have been configured to raise alarms within the control room when noise irregularities are detected resulting from a leaking pipe. The installation of these loggers has improved leakage detection, typically in the region of 20% reduction in the time spent on leakage detection. To date, 15% of all leakage promoted jobs have occurred following acoustic logger detection.

Why Ofwat considers its catch-up efficiency challenge to be appropriate

3.15 The PR19 catch-up efficiency challenge (4.6% for water and 2% for wastewater) is lower than that at PR14 (6.5% and 10.4% respectively). Most companies are outperforming the PR14 settlement, indicating that the level of catch-up challenge in PR19 is achievable. [CCIP/3.5; Reply-006/6.28-6.29]

3.15.1 For wholesale cost, both at PR14 as well as PR19, Ofwat used models based on historical outturn data to assess companies' business plans. The relevant catch-up efficiency target is forward-looking based on the gap between the Business Plan and Ofwat's view based on extrapolating the historical modelled relationship:

- (a) At PR14, the maximum Totex gap (i.e. the extent to which a particular company's view of efficient costs was under or over Ofwat's) on water service (excluding Bristol Water, which appealed Ofwat's decision) was 6% for Southern Water. Similarly, on wastewater, the maximum gap was 6% for United Utilities. The industry average gap on both services was 0% (meaning that Ofwat cumulatively allowed some companies costs exceeding their business plans of the same quantum as the costs it cumulatively disallowed other companies).
- (b) Comparing this to PR19, the maximum gap has doubled, with 13% on water and 12% on wastewater for Anglian Water. The industry average gap has also increased significantly to 6% on water and 5% on wastewater.

3.15.2 Hence Ofwat's comparison of the catch-up efficiency challenge at PR14 and PR19 is incorrect. Indeed, for YWS, the swing between being assessed as efficient by the regulator at PR14 (and previously for many years) and then subsequently deemed as inefficient at PR19 is striking. At PR14, YWS was 5% *more* efficient than Ofwat's modelled allowance

on water and was only 0.3% inefficient on wastewater. This is in marked contrast to the PR19 challenge where YWS modelled allowance is 2.6% inefficient in water, and 11.8% inefficient in wastewater. Differences of this magnitude should have given Ofwat cause for concern about the robustness of its modelling when they were first drawn to its attention. It is striking that Ofwat has made no comment on this point in its Reply.

3.15.3 It is also the case that the CMA had significant concerns with the PR14 cost models and considered that an upper quartile target would be inappropriately stringent even on the CMA's refined cost models. As explained in Annex 11, Ofwat has presented no empirical evidence to support its choice of benchmark either at PR14 or at PR19, which therefore amount to arbitrary choices. It follows that comparing the cost efficiency challenge between the two is meaningless.

3.15.4 Further, as demonstrated in Annex 6 (SoC), it is important to understand the extent of the regulatory challenge across all the incentives. It is simply not appropriate to look at Totex in isolation of the package of incentives as it does not provide a valid measure of outperformance. As demonstrated in Annex 6 (SoC) and Section 6 below, comparisons of ROCE provide a more appropriate measure.

3.16 It was correct to change the cost benchmark between the DD and FD because: (i) outturn data for 2018-19 became available in the meantime; (ii) Ofwat removed 185 diversions costs from its models, which improved their accuracy; (iii) companies reduced their requested costs in their DD representations; (iv) companies were incentivised to disclose better information about their costs as a result of Ofwat's changed approach to cost sharing rates; (v) the new information showed that 12 out of 17 companies were already outperforming the modelled base costs set with a historical UQ benchmark and that 2018-19 was a high-cost year relative to historical and forecast years; and (vi) the level of the UQ challenge had decreased from the IAP stage of PR19 and was significantly lower than the corresponding value at PR14. [Reply-005/3.35-3.40, 3.45, 3.47; Reply-006/6.13-6.20, 6.35]

3.16.1 A full response to this issue is provided in Annex 11. However, in summary:

(a) On point one, the availability of additional data should not require a change in methodology. Ofwat uses the additional 'high cost' year of 2018-19 as justification for amending the benchmark. However, Ofwat has not given consideration as to whether other years in the analysis may be considered 'low cost' years, or

whether the increase in expenditure in 2018/19 is part of the usual investment cycle.

- (b) On point two, the accuracy of Ofwat's models is worse than those used by the CMA in the Bristol (2015) inquiry, where the CMA chose an *average* benchmark due, in part, to concerns over the robustness of the cost models being used (CMA (2015), para 4.224).⁷⁰
- (c) On points three to six, Ofwat's late alteration to its methodology in response to companies reducing their cost predictions creates poor incentives.
- (d) Ofwat's decision on the benchmark and its response now seem to indicate that Ofwat has changed its methodology primarily to obtain a particular outcome (i.e. increasing the estimated efficiency gap), rather than based on any evidence. This supports the observation in SoC, paragraph 192 and Annex 11 of this Response, that the benchmark is results-driven, rather than having been determined by the confidence in Ofwat's econometric models and wider cost assessment framework.
- (e) Additionally, on the fifth point, the choice of benchmark may not be the reason why some companies were outperforming the UQ challenge: it may have been due to errors in other elements of Ofwat's cost assessment framework, such as omitted cost or service drivers.

3.17 The catch-up challenge was strengthened by only 0.7 percentage points in water and 0.8 percentage points in wastewater compared with the respective UQ levels. Eight out of 17 companies forecast greater efficient costs than the benchmark. [Reply-005/3.43-3.44] [Reply-006/6.27-6.29]

3.17.1 The size of the change in the challenge based on outturn data is not relevant. The critical issue is whether the models are appropriately specified, capturing all the key cost drivers for YWS, are robust enough to warrant the choice of benchmark for YWS and that the resultant predicted future efficient cost level is appropriate. As Ofwat is well aware, "catch-up" is company-specific, so as noted elsewhere in its Reply, Ofwat's focus on the average challenge is misleading. The SoC and Annex

⁷⁰ Exhibit 009 (SoC), CMA, 'Bristol Water plc A reference under section 12(3)(a) of the Water Industry Act 1991 Report' (2015).

11 of this Response show that none of Ofwat's foregoing propositions hold.

3.17.2 The argument that Ofwat has assessed some (or even most) companies to be efficient and therefore the chosen benchmark is achievable is also misleading. It is unclear why the number of efficient companies should determine what the appropriate level of benchmark should be. Rather, Ofwat's response here supports the observation that the benchmark has been set arbitrarily to lower companies' cost allowances (i.e. results-driven), rather than determined by the confidence in its econometric models and assessment framework, supported by empirical analysis (i.e. principles and evidence-driven).

3.18 Although set at a more stringent level than UQ, the FD catch-up efficiency challenge is lower than that in the DD. [Reply-005/3.41]

3.18.1 Again, the change in the catch-up challenge based on outturn data is not relevant. The critical issue is whether the models are robust enough to warrant the choice of benchmark for YWS, and as shown in Annex 11 this is categorically not the case.

3.18.2 On a forward-looking basis, Ofwat's overall cost challenge increased significantly at PR19, relative to PR14. Furthermore, the CMA expressed significant concerns both with Ofwat's PR14 cost models and in using a UQ benchmark even in its own re-determined models, and reduced the stringency of the benchmark to the average. Ofwat's focus on pre-FD analysis at PR19, and its dismissal of precedent from other regulatory decisions (e.g. the CMA, Ofgem and PR14), appears selective.

3.19 Only Thames Water expressed a concern with the UQ catch-up efficiency challenge applied in the DDs. [Reply-005/3.41] Most companies did not raise significant concerns with Ofwat's model in their DD representations. The industry was generally supportive of a stretching catch-up challenge based on the results of those models. [Reply-006/6.33]

3.19.1 Ofwat's argument that only one company argued against the UQ benchmark at the DD or IAP is incorrect. In YWS's Business Plan in September 2018, it was expressly noted that the benchmark should not be an arbitrary choice and should be based on the empirical evidence.⁷¹ Indeed, evidence was provided in the Business Plan to highlight the

⁷¹ Exhibit 023, Oxera: 'Independent assessment of Yorkshire Water's historical cost performance and consideration of its AMP7 cost adjustment claims in this context' (August 2018), section 2.4.

prediction uncertainty and complementary techniques of stochastic frontier analysis.⁷² This evidence also noted that "*estimated historical relationship between cost categories and cost drivers may be unrepresentative of future elasticities and can produce inappropriate AMP7 cost predictions if a simple roll-forward of the historical relationship is adopted.*"

3.20 The narrowing range of company efficiency scores shows that Ofwat's models performed better at FD than at DD. [Reply-005/36] [Reply-006/6.32]

3.20.1 As addressed in Annex 11, Ofwat's reliance on estimated efficiency scores as evidence of model improvement is weak, and more effort should have been made to compare model performance to other regulatory applications of cost assessment. The accuracy of Ofwat's models is in fact worse than those used by the CMA in the Bristol (2015) inquiry, where the CMA chose an *average* benchmark due, in part, to concerns over the robustness of the cost models being used (CMA (2015), para 4.224).⁷³ This suggests that no more than an average benchmark is appropriate based on Ofwat's models .

3.21 There is a level of inefficiency in non-competitive sectors owing to the lack of competitive pressure. [Reply-005/3.48] [Reply-006/6.36]

3.21.1 Ofwat does not present robust empirical evidence to support this assertion, nor does it quantify the level of 'x-inefficiency' in the sector. This contrasts with Ofgem's approach at the initiation of the "RPI at 20" project in which some empirical evidence was considered and presented by Ofgem to evaluate if any of the energy sectors is lagging behind other regulated sectors.⁷⁴ Ofgem subsequently undertook detailed analysis of such evidence in the RIIO-1 price reviews.

3.21.2 The argument itself is also misleading. The water sector has been under incentive regulation since privatisation in 1989, in which time it has been

⁷² Ibid.

⁷³ Exhibit 009 (SoC), CMA (2015): 'Bristol Water plc A reference under section 12(3)(a) of the Water Industry Act 1991 Report'.

⁷⁴ Exhibit 024 Buchanan (2008): 'OFGEM'S "RPI at 20 Project', which can be found here: <https://www.ofgem.gov.uk/sites/default/files/docs/2008/03/ab-march-08.pdf>.

subject to the pseudo-competitive pressure of cost benchmarking.⁷⁵ Indeed, Ofwat makes this argument in other areas of its response:

“Benchmarking analysis allows us to identify relatively efficient companies within the sector... This replicates a competitive market, where less efficient companies would be unable to charge a premium to customers to cover their inefficiency.”⁷⁶

- 3.21.3 Additionally, Ofwat has been using evidence from competitive sectors in the UK economy to set additional efficiency challenge in the form of frontier shift over several price control reviews. The scope for ‘x-inefficiency’ savings, if any, is likely much lower than it was in earlier price controls, so it is unclear why Ofwat is using this as an argument, without any evidence to back it, to set the benchmark at PR19.
- 3.21.4 Finally, it should be noted that YWS is subject to procurement law and its capital expenditure programme (which account for over 50% of its Totex) is competitively tendered via its framework agreements. In this way its expenditure is subject to rigorous market tests for efficiency.

3.22 Contrary to YWS’s suggestion that stochastic frontier analysis could have been used to check the catch-up efficiency challenge was appropriate, this technique has limited use in regulatory applications and should only be used when simpler models do not provide sufficiently robust estimates (a view shared by the CMA in the 2015 Bristol Water redetermination). Ofwat’s models were sufficiently robust. [Reply-005/3.50-3.52] [Reply-006/6.41-6.43]

- 3.22.1 Ofwat’s first assertion that stochastic frontier analysis has limited use in regulatory applications is incorrect, a fact of which it should be well aware. The regulatory examples that Ofwat cited (Postcomm, Ofcom, ORR and Monitor, Reply-006/6.39) regarding the choice of an upper decile benchmark used stochastic frontier analysis as the main estimation technique. In particular, Ofwat cites Ofcom’s application of an upper decile benchmark to suggest that Ofwat’s benchmark is not stringent compared to regulatory precedent (Reply-006/6.39)]. Not only does Ofcom apply the upper decile benchmark to a stochastic frontier model, but it also states *“the cost benchmarking uses an econometrics framework, applying Stochastic Frontier Analysis, a well-established methodology within the UK regulated sectors”* [emphasis added] on the

⁷⁵ Note that the first benchmarking for price control purposes was carried out for PR94. See Exhibit 025, Ofwat: ‘Future Charges for Water and Sewerage Services’ (July 1994), section 3.

⁷⁶ Exhibit 003, Reply-005, page 37.

first page of its Executive Summary.⁷⁷ Indeed, stochastic frontier analysis is used extensively in regulation across Europe.⁷⁸

- 3.22.2 Ofwat's second assertion that stochastic frontier analysis is 'complex and non-transparent' for stakeholders is a value judgement that Ofwat does not support with evidence. In its simplest form, stochastic frontier analysis is an extension of the econometric model that additionally allows for a one-sided error term, which can be statistically tested. There is no reason to suppose that stakeholders in the British communications or transport industries (where this technique has been used in cost assessment) have been unable to engage in the cost modelling proposed by Ofcom and ORR, respectively.
- 3.22.3 Finally, Ofwat states that the results are sensitive to the assumed distribution of inefficiency. To some extent, this is a correct observation - companies' efficiency scores could differ across different stochastic frontier models depending on the assumed distribution of inefficiency. However, such an observation ignores the fact that Ofwat itself makes strong and unsupported assumptions regarding the distribution of inefficiency, by making an ad hoc adjustment to companies' efficiency scores. Clearly, Ofwat's assumption regarding the appropriate choice of benchmark (lower quartile, average, upper quartile, fourth-/third-ranked company, or frontier) will also have a significant impact on companies' efficiency scores.
- 3.22.4 If stochastic frontier analysis cannot accurately decompose the estimated residual into inefficiency and statistical noise, it is not clear how Ofwat's arbitrary selection of the fourth-ranked and third-ranked company is able to do so. Ofwat's statement that this is related to sample size is misleading—stochastic frontier analysis has been applied to similarly sized datasets in regulatory applications in the UK.⁷⁹ YWS concludes that Ofwat had no reasoned basis for the setting of its benchmarks and failed to undertake the well-used analytical approach to bring intellectual

⁷⁷ Exhibit 026, Deloitte, 'Econometric benchmarking in the UK postal sector' (May 2016), page 4.

⁷⁸ For example, SFA is used by the Bundesnetzagentur (alongside DEA) to estimate the static efficiency of German electricity DSOs. See Exhibit 027, Bundesnetzagentur (2018), 'Decision BK4-18-056' (2018).

⁷⁹ For example, the ORR used estimated SFA models with 14 infrastructure managers (although the time series component was longer). The ORR also performed SFA on a sample of 50 observations for its determination of the efficiency on Network Rail as part of the PR18 price control. See Exhibit 028, The Office of Rail and Road, 'PR13 Efficiency Benchmarkings of Network Rail using LICB' (August 2013), page 6; The Office of Rail and Road: 'PR18 Econometric top-down benchmarking of Network Rail A report' (July 2018), page 43.

rigour to the issue. YWS therefore finds it hard to understand why Ofwat took this step.

3.23 Other UK regulators have set more stretching benchmarks than UQ. [Reply-006/6.39]

3.23.1 As set out in above, all the regulators cited by Ofwat that applied an upper decile benchmark only did so after conducting stochastic frontier analysis, and only after model limitations and data errors were appropriately considered. It is likely then that the efficiency challenge in these examples are actually less stretching than Ofwat's PR19 FD. This point therefore does not assist Ofwat's position.

Why Ofwat consider it correct to omit service quality as a cost driver from its base cost models

3.24 Ofwat has failed to find statistical robustness of service quality variables. [Reply-006/3.35-3.36, 3.44]

3.24.1 As discussed previously by Oxera in Annex 10 (SoC),⁸⁰ and further progressed in Annex 11 of this Response, it is possible to include service quality variables in econometric modelling. Indeed, other UK and European regulators do so as standard.

3.24.2 Even if Ofwat could not address this issue in its current approach to modelling cost allowances, it would not absolve Ofwat from failing to consider in any meaningful way how service and cost expectations interact. The point is not simply about the whether certain cost drivers are or are not included in modelling, it is a much more fundamental issue of how the regulator can credibly set an economic level of costs and performance for the industry.

3.25 Service quality is under management control, which can lead to statistical concerns and perverse incentives (i.e. the incentivisation to underperform). Service quality variables also have an ambiguous relationship with costs. [Reply-005/3.20] [Reply-006/3.38-3.40] [Reply-006/3.42-3.43]

3.25.1 Obviously, it is essential that cost assessments do not create perverse incentives for companies to reduce performance. However, as it stands, Ofwat is not accounting for service performance *at all* in its cost assessment. Further, while it is undoubtably true that there is not a simple

⁸⁰ Annex 10 (SoC), Oxera: 'Issues with Ofwat's approach to determining the cost benchmark' (March 2020).

linear relationship between costs and performance, currently Ofwat *does not know* how service quality relates to cost.

3.25.2 The justification that Ofwat uses for not considering service quality variables in its models – that there is potential for service quality to be correlated with its model residual (i.e. endogeneity) – is wholly inadequate for failing to address the issue at all. Omitted variable bias resulting from ignoring service quality measures in the cost models can also result in an endogeneity bias, given the likely correlation between these measures and the structural and topographical features included in the models. In other words, omitting these measures from the cost models because service quality is endogenous does not address the statistical issues highlighted by Ofwat, as it can result in the same statistical issue that it is seeking to mitigate. In the PR14 Redetermination for Bristol Water, several analytical approaches (such as instrumental variable regression) for addressing the issue were valuably suggested by the CMA which Ofwat has failed to adopt in its approach to PR19.

3.26 None of the 220 models submitted by water companies during the March 2018 consultation included service quality variables. YWS is only concerned about the inclusion of such variables now because it is seeking to close its cost gap. [Reply-005/3.21] [Reply-006/3.37]

3.26.1 Ofwat’s argument that YWS is only concerned about how the modelling controls for service variables because there is a large cost gap is flawed in many ways.

3.26.2 First, companies did not have sight of Ofwat’s wider approach to cost assessment in March 2018 so the reference to this date is highly disingenuous and it is hardly surprising that the issue did not come up at that stage. Moreover, the companies certainly did flag the importance of the connection cost and service quality in their submissions. For example, YWS’s Business Plan noted that:

Indeed, the historical cost assessment models considered in this report appear to not adequately account for the step-increase in YKY’s future expenditure. A driving factor is that the activities/cost drivers used in YKY’s and Ofwat’s models do not robustly represent YKY’s forward-looking expenditure requirements in AMP7 (e.g. expenditure for WINEP and further improvement to service levels.⁸¹

⁸¹ Exhibit 023, ‘Independent assessment of Yorkshire Water’s historical cost performance’ page 2.

3.26.3 For its part, YWS assumed the expenditure to improve service quality would be assessed as enhancement expenditure and cost adjustment claims, which would mitigate the need to include measures of service quality in the base models. Indeed, expenditure for service improvements have always previously been assessed as enhancement requirements, in line with the Regulatory Accounting Guidelines, so it was not unreasonable for companies to assume this would be treated separately to the base models. As evidenced by the large volume of cost adjustment claims and enhancement expenditure requests relating to service quality at the IAP and DD stages of PR19, YWS was not alone in its view.

3.26.4 Company business plan data was not published until September 2018 and integrated models reflecting anticipated changes in the operational circumstances and need of companies can only be considered after the period. Having reviewed the models and cost assessment outcome at the IAP stage in January 2019, YWS immediately submitted evidence to Ofwat outlining the problems with the 'costs-outcome disconnect'.⁸²

3.27 YWS's alternative "leakage models" provide contradictory results and incentivise perverse behaviours. It suggests that lower quality (i.e. higher levels of leakage) is related to higher costs, contradicting both Ofwat's alternative leakage modelling specifications and PwC's leakage report (both of which show that controlling for leakage reduces YWS's cost allowance) and the arguments of Anglian Water and Bristol Water that marginal costs increase as leakage levels decrease. Ofwat did not reduce YWS's allowance despite this. [Reply-005/3.23-3.24, 3.27, 3.29] [Reply-006/3.41]

3.27.1 This is a further example of Ofwat's lack of understanding about the relationship between costs and performance, as it has clearly misunderstood the implications of the evidence previously provided. A detailed analysis of this issue is presented in Annex 11. In summary:

- (a) Ofwat incorrectly asserts that the leakage variable in YWS's alternative models 'has a positive elasticity, which suggests that higher levels of leakage are associated with higher costs'.⁸³ Ofwat appears to have mistaken a positive coefficient on the linear term in the models with a positive elasticity. As the models control for leakage in a non-linear manner (similar to Ofwat's treatment of

⁸² Annex 03 (SoC), Economic Insight: 'Maximising Customer Benefits from the Outcomes Framework', March 2019.

⁸³ Exhibit 003, Reply-005, page 35.

weighted average density), this interpretation is clearly inappropriate. Moreover, Ofwat uses this incorrect interpretation of the coefficients to argue that the model is beneficial to YWS and is inappropriate for setting cost allowances.

- (b) As a result of its misinterpretation of the estimated relationship between cost and quality in its econometric models, Ofwat's position is not supported by empirical evidence. Oxera submitted data and analysis files alongside the SoC which will facilitate the CMA's understanding of the analysis.

3.28 YWS's models may be selective. A model that has a positive relationship between leakage volumes and costs is bound to provide addition costs to a poor performer on this performance measure such as YWS. [Reply-005/3.26] [Reply-006/3.41]

3.28.1 As described above in 3.28.1, Ofwat has mistakenly interpreted the results of the alternative leakage models and is using this incorrect interpretation to accuse YWS of arguing for higher costs for poor performance. Neither of these assertions is correct. Indeed, counter to Ofwat's assertion that YWS's allowance increases in these models because it is a poor performer on leakage, it is because YWS is forecasting a significant decrease in leakage that its cost allowance increases.

3.28.2 Ofwat's implicit assumption is that there is a linear relationship between costs and performance (i.e. as performance improves, costs increase). However, Ofwat has not conducted any analysis to support this claim, nor has it taken into account the varying regional circumstances across companies which will likely affect the marginal costs for performance improvement. Again, this issue is discussed in detail in Annex 11 and Section 4 below.

3.29 The increased allowance in YWS's leakage model may arise because Ofwat measures leakage performance relative to a normalise UQ performance level whereas YWS measures it as the distance from the sustainable economic level of leakage (SELL). The former is more appropriate. [Reply-005/3.25] [Reply-006/3.41]

3.29.1 The issues in dispute between the parties in relation to SELL are addressed in Annex 11 and Section 4 below.

3.30 The CMA did not include service quality variables (including leakage) in the relevant cost models in the 2014 Bristol Water redetermination. [Reply-005/3.22] [Reply-006/3.45]

3.30.1 The CMA's position on the issue in the Bristol Water price inquiry was not as absolute as Ofwat implies. The CMA noted that "*given limitations in the available data, it may be better, in some cases to include an explanatory variable which carries risks of endogeneity than to fail to take any account of potentially important differences between companies.*"⁸⁴ It should also be noted that the CMA redetermination of Bristol Water at PR14 did not include equivalently extreme expectations for performance improvements and so the issue was not as critical to that assessment as it is for this redetermination.

Why Ofwat considers its frontier shift efficiency challenge to be appropriate

3.31 Ofwat chose reasonable comparator sectors in setting the frontier shift efficiency challenge. These choices are broadly consistent with the recommendations of water company consultants. [CCIP/3.13]

3.31.1 The first statement is incorrect, see SoC, paragraph 199 and Annex 9 (SoC)⁸⁵. While a broad group of comparator sectors was initially chosen for the analysis as representative of the activities of water companies (see Europe Economics (2019),⁸⁶ and this initial selection of sectors was broadly consistent with those chosen by water companies' consultants, not all them were ultimately used to set the frontier shift challenge:

- (a) Ofwat's frontier shift challenge is 1.1% p.a. and is at the upper end of the range of 0.6-1.2% p.a. established by its consultants. The upper bound was based on pre-global financial crisis performance in stronger performing areas of the economy ignoring recent information over the past 13 years.
- (b) Ofwat's use of a figure close to the upper bound of this range means that only a subset of the initially identified comparator sectors were used and, thus, some representative sectors were effectively ignored. As the upper bound was based on the better performing sectors it provides a biased benchmark by definition.

⁸⁴ Exhibit 009 (SoC), CMA (2015), 'Bristol Water plc. A reference under section 12(3)(a) of the Water Industry Act 1991. Final report', page 73.

⁸⁵ Annex 09 (SoC), Oxera: 'Issues with Ofwat's frontier shift assessment in PR19' (March 2020).

⁸⁶ Exhibit 073, Europe Economics: 'Real Price Effects and Frontier Shift – Final Assessment and Response to Company Representations', page 68.

Moreover, while these sectors were given excessive weight in constructing the benchmark, sectors most comparable to the wholesale activities in the water industry, such as the construction sector, were excluded.

- (c) The derivation of the upper and lower bounds of the consultants' range (0.6% to 1.2% per annum) is not consistent. As shown in Annex 9 (SoC), Europe Economics' range should either be 0.6–0.9% p.a. (based on averages across comparators) or 0–1.1% p.a. (based on poor-performing and strong-performing sectors), with a central estimate of 0.75% p.a. or 0.55% p.a. as appropriate.

3.32 YWS's criticisms of Ofwat's frontier shift range have no merit because Ofwat's data takes into account periods before and after the global financial crisis as well as data from complete business cycles. It was appropriate to exclude data from 2008 and 2009. YWS's proposed time periods might not represent complete business cycles. [Reply-005/3.74-3.77] [Reply-006/7.17-7.22]. The use of averages of comparator sectors would not provide an appropriate upper bound because historical performance indicates that many sectors can perform more strongly than the average. The upper end of the range also took into account the potential for productivity growth from embodied technical change and the higher productivity estimates from value added measures. [Reply-006/7.34]

- 3.32.1 Europe Economics' preferred time periods are the pre-crisis (1999–2007) and post-crisis (2010–14) years, which exclude the years 2008 and 2009. However, neither of these time periods covers a full business cycle. While Europe Economics also considers a longer time period based on the NACE1 dataset in setting the upper bound, it focuses on only two of the five comparator sectors (i.e. chemicals and transport and storage), as they are the stronger-performing sectors. It is therefore inaccurate to state that Europe Economics has considered full business cycles in a robust manner.
- 3.32.2 Europe Economics' argument that an average of comparator sectors does not provide an appropriate upper bound does not address the argument regarding the consistency of the way in which the upper and lower bounds of the range are derived. Following Europe Economics' rationale, the historical performance also indicates that many relevant sectors can perform much worse than the average. However, Europe Economics does not consider these sectors when setting the lower bound, but uses an average instead. Moreover, its rationale makes it clear that its upper bound is upwardly biased by construction.

3.33 The average total factor productivity in Ofwat’s comparator sectors has far outstripped that of the UK economy as a whole and thus Ofwat rejects the argument that water sector productivity should reflect the latter. [CCIP/3.15]

- 3.33.1 Ofwat rejects the argument that water industry productivity should track that of the UK economy. In doing so, it makes the following statement: *“Economic Insight (on behalf of Anglian Water, Northumbrian Water, Welsh Water and Yorkshire Water) and NERA (on behalf of Bristol Water) state that too little weight was placed on recent evidence of productivity flat lining”*.⁸⁷ It is important to draw the CMA’s attention to this issue and the analysis contained in Economic Insight’s report.⁸⁸
- 3.33.2 Specifically, the Economic Insight addresses the theoretical and evidential basis for Ofwat’s asserted ‘step change’ at PR19, relative to prior price controls. In doing so, Economic Insight points out that one possible justification for a step change (an increase in frontier shift) is simply not supported by evidence, because productivity in the UK has collapsed and flatlined in the post-financial crisis period. The Economic Insight report does not selectively focus on overall UK productivity to make this point but shows changes in productivity across a range of sectors pre- and post-crisis.⁸⁹
- 3.33.3 Therefore, the scope of Economic Insight’s financeability report is not to identify precisely the ‘right’ comparators for frontier shift in the water industry, but to demonstrate that productivity has generally been significantly lower in recent years than its long-term level.⁹⁰
- 3.33.4 In this context, Ofwat’s own analysis is noteworthy in that its own figures are entirely consistent with Economic Insight’s assessment. Specifically, Ofwat states: *“There has been an average total factor productivity growth of 0.6% per year in [Ofwat’s proposed] comparator sectors after the financial crisis of 2008.”* Yet, Ofwat’s analysis shows that these same comparators delivered productivity gains of 0.9% pa in the pre-crisis era. Hence, even on Ofwat’s view, on a like-for-like basis, productivity is clearly much lower now than in the past. Putting to one side precisely

⁸⁷ Exhibit 003 (SoC), CCIP/3.14.

⁸⁸ Exhibit 034 (SoC), Economic Insight: ‘Financeability of the Notionally Efficient Firm: Top-Down Analysis’, August 2019.

⁸⁹ Ibid Figure 2.

⁹⁰ Economic Insight provided several reports on frontier shift to support YWS final business plan. These examine comparators in more detail and show the same pattern of productivity collapsing post crisis.

what comparators should be used, it is abundantly clear that Ofwat's 'step change' cannot be rationalised by a significant increase in productivity (frontier shift).

3.34 It was appropriate to set a value for the frontier shift towards the upper end of the range of the water sector productivity growth estimated by Europe Economics (which range is in line with other recent regulatory decisions). [CCIP/3.16-3.17]

3.34.1 As explained in Annex 9 (SoC) and Annex 11 of this Response, this statement is incorrect:

- (a) Ofwat's reliance on 'embodied technical change'⁹¹ to support its assertion is based on a significant misinterpretation of the research in the area.
- (b) Ofwat's claim that the Totex and outcomes framework it has adopted should enable companies to make additional productivity improvements is not supported by robust evidence.
- (c) The proposition is not supported by consideration of an alternative method of calculating total factor productivity (**TFP**).
- (d) Ofwat relies on flawed reports by KPMG and Europe Economics to indicate that frontier shift towards the upper end of Europe Economics' range or an even higher scope for productivity improvement is feasible. This gives a false basis of the true potential, which is lower than the 1.1% p.a. target that it set.
- (e) Ofwat's choice of frontier shift is higher than that used by other regulators. As evidenced in Appendix 8n of YWS's Business Plan (authored by Economic Insight),⁹² although there is a clustering of regulatory assumptions around 1% across the regulated sectors, these assumptions have systematically overshoot the UK's overall productivity performance and are well above the 10-year average TFP for the UK.

3.35 Contrary to YWS's argument, accounting for embodied technical change does not equate to a catch-up efficiency challenge and

⁹¹ Embodied technology refers to where improvement in outputs is the result of investment in new equipment or technology – i.e. new technical changes made are embodied in the equipment.

⁹² Exhibit 066-051 (SoC), Appendix 8n to YWS's Business Plan, The scope for frontier shift efficiency at PR19.

therefore does not lead to a double counting of the such challenge. [Reply-005/3.78-3.81] [Reply-006/7.39-7.41]

3.35.1 YWS's argument did not equate embodied technical change to catch-up and so the double counting issue remains unanswered. The analysis in Annex 9 (SoC), highlighted that: (i) traditional TFP estimates also include elements of embodied technical change; and (ii) the activities associated with embodied technical change (e.g. investment in new machineries) may also capture some catch-up effects. This is further discussed in Annex 11 of this Response.

3.36 While the research supporting Ofwat's position on embodied technical change is limited, that the two papers in question were published ten years apart is not a valid criticism. [Reply-005/3.82] [Reply-006/7.42-7.43]

3.36.1 The two studies considered by Europe Economics to inform their 60% uplift, in fact provide consistent TFP estimates, irrespective of whether embodied technical change is included in the estimation. Moreover, an uplift as high as 60% would suggest that TFP estimates published by national statistical agencies and some of the most credible international economic organisations (e.g. Eurostat and OECD) are severely understated. For further details refer to Annex 11.

3.37 Ofwat does not quantitatively apply an uplift for embodied technical change; it accounts for such change by selecting a value towards the upper end of its range. [Reply-005/3.82]

3.37.1 While Ofwat does not apply this uplift quantitatively, the suggested 60% uplift adjustment is mentioned multiple times by Ofwat to justify the selection of a target close to the upper end. As explained in paragraph above, the so called 60% uplift is not credible in light of other available statistical evidence on this issue.

3.38 YWS do not provide an alternative quantification of embodied technical change. [Reply-005/3.82]

3.38.1 As stated in paragraph above and in Annex 11, there is no apparent downward bias in the traditional TFP estimates according to the empirical findings of the studies quoted by Europe Economics. Thus, it is not appropriate to apply any uplift and there is no need for an alternative quantification.

3.39 Contrary to YWS’s suggestion, Ofwat’s estimates do take account of the potential for catch-up efficiency. [Reply-005/3.84] [Reply-006/7.47]

3.39.1 This is a misinterpretation of the YWS argument. In fact, YWS stated precisely the opposite, i.e. TFP estimates may include embodied technical change, which in turn may be conflated with catch-up effects. As set out in Annex 9 (SoC) the exact adjustment should be based on empirical evidence, for example, through an analytical decomposition of the TFP, as has been attempted in other academic and regulatory applications.

3.40 Ofwat did not ignore data from the construction sector and YWS’s estimate significantly over weights that sector, which downwardly biases its frontier shift estimate. [Reply-005/3.85-3.86] The construction sector is not necessarily a closer comparator to the water industry than other sectors. [Reply-006/7.35]

3.40.1 While Ofwat’s list of comparators includes construction, Ofwat’s final range does not take construction into account. The upper bound used by Ofwat is based on a few strong performing sectors. As a result, Ofwat places a *large weight* on strong performing sectors of little relevance to water and waste (e.g. professional services, transport and storage) and *zero weight* on other comparators (including a highly relevant sector like construction).

3.40.2 YWS reject the view that the construction sector is no more representative of the water industry than other sectors. YWS’s capital programme is competitively tendered and accounts for approximately 60% of Totex expenditure. The construction sector is therefore a highly relevant industry for setting the range of frontier shift. Moreover, previous regulatory decisions have expressly used the construction sector as the principal comparator to set the frontier shift target on capex (e.g. Ofgem in the RIIO price reviews and previously).⁹³

3.40.3 As with Ofwat’s choice of catch-up benchmark (see 3.17.1), Ofwat appears to have made a choice with a view to obtaining a particular outcome, rather than use a set method, agreed upfront, and a resultant outcome based on the evidence from that method. This has created an upward bias in both cases. In contrast, Oxera’s approach considered weights based on whether the comparator sectors were representative of the activities in the water industry (instead of their performance). This

⁹³ Exhibit 030, Ofgem: ‘RIIO-T1/GD1: Real price effects and ongoing efficiency appendix, Final Decision’ (December, 2012).

approach is consistent with recent court decisions⁹⁴ and regulatory precedents, including work by Ofwat's advisers, Europe Economics. For further details refer to Annex 11.

3.41 Ofwat has provided sufficient evidence to justify an uplift in frontier shift to reflect the Totex and outcomes framework. YWS is suggesting that no account should be taken of this regime, which is not credible. [Reply-005/3.87-3.89] [Reply-006/7.52-7.56]

3.41.1 As noted in the SoC and acknowledged by Ofwat,⁹⁵ outperformance is not a good indicator of efficiency as it is driven by many factors, including the regulator's determinations, external macroeconomic factors and company-specific factors. In relation to the case studies considered, they varied significantly across companies and, as noted by Ofwat, represented only 3.8% of Totex.⁹⁶ It is, therefore, inappropriate to extrapolate any results from them. As the first sentence is therefore incorrect, YWS is correct to suggest that no account should be taken of this regime. For further details refer to Annex 11.

3.42 Composite measures that implicitly weighs data from different industries to produce a frontier shift estimate, as suggested by YWS, could lead to spurious accuracy. YWS's composite measure over-weights the construction sector, which downwardly biases its estimate of frontier shift. [Reply-006/7.36]

3.42.1 Please see above and Annex 11.

3.43 Applying a 1.1% frontier shift across wholesale base expenditure [i.e. unmodelled costs] results in only a 0.1% reduction in total expenditure across the water sector in AMP7. [CCIP/3.25]

3.43.1 Ofwat has not assessed a single company's unmodelled costs to be efficient. In applying the frontier shift challenge to unmodelled costs, Ofwat has ignored the cumulative impact of adopting the most challenging efficiency assumptions across all elements of its assessment of these costs, as set out above.

3.44 It was appropriate to apply the frontier shift challenge from 2019-20 onwards because Ofwat's base models used data up to 2018-19,

⁹⁴ ECLI:NL:CBB:2018:346 (GTS) and ECLI:NL:CBB:2018:347 (TenneT). See Exhibit 031, ACM: 'Reacties gewijzigd methodebesluit TenneT Transport 2017-2021', (January, 2019); and Exhibit 032, ACM: 'Gewijzigd methodebesluit GTS 2017-2021' (January 2019).

⁹⁵ Exhibit 008 (SoC), Ofwat: 'PR19 final determinations: Securing cost efficiency technical appendix', December 2019, page 183.

⁹⁶ Exhibit 003, Reply-005, page 49.

and therefore do not capture ongoing efficiency improvements in 2019-20. [CCIP/3.26]

3.44.1 In principle, YWS agrees that a frontier shift challenge can be applied from 2019–20 onwards to capture the ongoing productivity improvements in 2019–20 that are not captured by Ofwat’s models. However, the magnitude of the efficiency challenges (both frontier shift and the efficient level of cost) are not supported by evidence (see above).

Why Ofwat considers that the frontier shift efficiency challenge should apply to unmodelled-base and enhancement costs

3.45 It is appropriate to apply frontier shift to unmodelled costs, including business rates, abstraction charges and Traffic Management Act costs because the frontier shift estimates identified for comparator sectors are based on productivity growth across all costs. There is scope for companies to reduce these costs, in particular Traffic Management Act costs through innovative and non-invasive ways to make repairs. [Reply-005/3.90] [Reply-006/7.63]

3.45.1 As noted in Annex 9 (SoC), while theoretically there might be some scope for efficiencies in unmodelled costs as well, Ofwat’s current approach relies on the assumption that uncontrollable costs form a similar proportion of expenditure in wholesale activities as they do in the comparator industries. If water companies instead face more uncontrollable costs than the average company in the comparator sectors, the frontier shift target, as currently applied, would not be appropriate. As the TFP data does not allow one to directly control for this, regulatory precedent typically applies a frontier shift target (or any efficiency target) only to costs that are within management control.

3.45.2 Its application is particularly concerning as Ofwat has not assessed a single company’s unmodelled costs to be efficient. In applying the frontier shift challenge to unmodelled costs, Ofwat has ignored the already stringent nature of its assessment of these costs. Specifically, Ofwat already imposes a significant challenge of £66m to unmodelled costs for YWS (before the overlay of a frontier shift target), despite these being largely outside of management control.

3.46 It is appropriate to set a frontier shift efficiency challenge in relation to generic enhancement costs because Ofwat’s frontier shift estimate was based on all costs in comparator industries. [CCIP/3.19] Other regulators have applied frontier shift to enhancement costs. [Reply-005/3.91] There is no evidence that the WINEP benchmark

companies applied a net frontier shift challenge to WINEP enhancement expenditure, so Ofwat's application of frontier shift does not double count efficiency gains. [Reply-005/3.93] [Reply-006/7.67-7.72]

3.46.1 By 'generic enhancement costs' Ofwat is referring to the general wastewater enhancement costs for WINEP.

3.46.2 As explained in SoC, paragraph 201 and Annex 9 (SoC), Ofwat's statement is incorrect. Ofwat uses a benchmark to assess each company's efficient WINEP costs. The benchmark is set at the UQ level of the estimated future WINEP costs of each company. Since the costs in question are forward looking, they already take into account (i.e. contain a downward adjustment to reflect) the companies' respective assumptions on frontier shift. Therefore, overlaying an additional frontier shift challenge on such costs amounts to a double counting of the potential for productivity improvements. Further discussion is included in Annex 11.

3.47 Company forecasts of frontier shift on enhancement expenditure were unclear, limited and offset by real price adjustments. [CCIP/3.20] [Reply-005/3.92] [Reply-006/7.66]

3.47.1 The application and reporting of frontier shift did indeed vary across companies in the industry. It is likely the result of unclear and ambiguous regulatory guidance provided for the completion of the business plan tables. However, it is clearly not a good reason to reject frontier shift estimates, and Ofwat's should have sought to clarify this issue with the industry once it identified the potential for misinterpretation.

3.48 None of the Disputing Companies objects to Ofwat's applying frontier shift to metering costs. [Reply-006/7.73]

3.48.1 Given the application of the frontier shift target to metering costs had a significantly less material impact on allowances than the application to WINEP, it is not surprising that the Disputing Companies focused on the WINEP allowances. However, the principle of double-counting the impact of frontier shift efficiency improvements is the same in metering and WINEP enhancement.

3.49 If the frontier shift is applied to base costs only then a range of 0.6 to 1.4 percent should be used. [Reply-006/7.74]

3.49.1 YWS has provided extensive evidence demonstrating the inadequacy of Ofwat's calculation of the frontier shift range and its application to base

costs in the SoC.⁹⁷ Ofwat has provided no new evidence to support its position. Annex 11 of this Response restates some of the main critiques and sets out why Ofwat's response noted in the statement above remains inadequate to support its frontier shift assumption.

Why Ofwat considers that a frontier shift of 1.5% would have been appropriate

3.50 The scope for frontier shift efficiency can be increased by changes to Ofwat's regulatory framework. [CCIP/3.22] [Reply-006/7.56]

3.50.1 Ofwat appears to be arguing that the design of the regulatory framework influences the scope for frontier shift. If regulatory reforms improve company performance, then the step change policy implemented by Ofwat for PR19 would indicate less opportunity for the water sector to outperform UK total factor productivity than at previous price reviews, rather than more as Ofwat in fact imposed.

Accounting for real price effects

3.51 An adjustment for real price effects in relation to energy is inappropriate because: (i) it would weaken incentives to minimise energy costs; (ii) there is no consistent evidence of a wedge between energy costs and CPIH measured inflation (and is in any case much smaller than that for labour costs); (iii) there is significant uncertainty about forecasts of energy prices; (iv) there is no clear theoretical link between energy costs and productivity growth; (v) energy costs are partially within management control; (vi) some water companies do not assume a real price effect adjustment or assume that any adjustment would be very small; (vii) companies are introducing a number of energy efficiency measures in their move towards net zero carbon emissions; (viii) energy costs are partially captured by CPIH; (ix) Covid-19 has increased the uncertainty of energy prices; (x) water companies produce as well as consume energy; and the FDs include cost sharing mechanism and other protections. [Reply-005/3.95-3.96] [Reply-006/8.37-8.41, 8.43-8.46]

3.51.1 Despite the large number of points Ofwat raises to support the decisions to ignore RPEs for energy costs, none of the arguments are convincing.

(a) An allowance for energy RPEs does not weaken incentives to minimise costs. In competitive markets, the impact of underlying input cost inflation should be passed through to prices. As

⁹⁷ Annex 09 (SoC), Oxera: 'Issues with Ofwat's frontier shift assessment in PR19' (March 2020).

incentive regulation is intended to replicate the outcomes that would arise in competitive markets, it is essential, as a point of principle, that regulated prices reflect both an appropriate efficiency challenge and the impact of underlying inflation. Ofwat itself has previously accepted this principle when allowing retail RPEs at PR14.

- (b) The pertinent question is just an evidential one regarding whether energy inflation for YWS is expected to be above CPIH, requiring an RPE allowance. If the evidence indicates that energy inflation forecasts are negative, then a symmetrical adjustment would be appropriate. Either way, the adjustment should be based on evidence and not be a policy decision by a regulator to just assume energy RPEs away 'on principle'.
- (c) Indeed, YWS recognises that energy price inflation can be uncertain. However, the existence of uncertainty should not be an excuse for the regulator to ignore the issue. As highlighted above, the focus should be on adopting the highest quality evidence.
- (d) YWS's evidence was based on a report by Economic Insight.⁹⁸ In relation to energy price forecasting, rather than develop its own forecasts, Economic Insight made use of the UK Government's official existing forecasts, as published by BEIS. The forecasts from BEIS use statistical techniques based on trends and relationships from historical data, adjusted to take account of Government energy policy. BEIS is clearly a credible source for energy projections, and YWS adopted a cautious approach by basing energy RPEs on the 'low growth' scenario for the economy.

3.51.2 Ofwat also resorts to trying to justify the position by reference to the number of other companies who have accepted the decision. As previously discussed, this is irrelevant to the issue of evidential quality.

3.52 YWS did not provide specific or additional evidence in support of a real price effect allowance for energy in its SoC. [Reply-006/8.4. There is no evidence to support an adjustment for real price effects in relation to chemicals. [Reply-005/3.97] [Reply-006/8.42 and Table 8.7]. There is insufficient evidence to support an adjustment for real

⁹⁸ Exhibit 066-052 (SoC), Appendix 8o to YWS's Business Plan, Economic Insight: 'Inflation forecasting: Real Price Effects and Input Price Inflation at PR19'.

price effects in relation to materials, plant and equipment. [Reply-005/3.97] [Reply-006/8.42 and Table 8.7]

3.52.1 YWS clearly set out evidence in support to the RPE for all input prices as part of the Business Plan submission in September 2018.⁹⁹ As outlined in paragraph 3.52 above, the evidence for RPE was based on credible sources and used econometric approaches to identify statistical relationships between Yorkshire's underlying inflation and wider measures of UK economic performance.

Ofwat's position of the impact of Covid-19 on frontier shift and RPEs

3.53 There is no strong evidence to suggest that the impact of Covid-19 will invalidate Ofwat's 1.1 percent frontier shift estimate. [Reply-00/7.76-7.79] Covid-19 might make the case for real price effect adjustments weaker. [Reply-006/8.43-8.46]

3.53.1 It is the case that the economic impact of Covid-19 remains very uncertain. While the water sector might be less exposed to it compared to other sectors, it is unclear why Europe Economics and Ofwat have *at least* not reconsidered their recommendation to focus on the upper end of their range of frontier shift estimates, as the evidence presented to support this was already weak (with additional significant weaknesses in its evidence/arguments set out below). This is particularly concerning given that data indicates a significant general economic recession is fast approaching and Europe Economics' analysis already ignores recent performance over the past 13 years on a representative set of comparator sectors. Similar considerations apply in relation to the effect of Covid-19 on RPEs.

Accounting for treatment complexity

3.54 On the basis of YWS's representations, Ofwat changed its approach to the "treatment complexity" cost driver by using company forecasts but did not change the data inputs to its models for this driver, owing to a lack of assurance of the new data. [YSP/1.20] YWS claims that Ofwat's econometric models contain a significant amount of statistical noise, however the paper by Oxera that YWS's relies upon to demonstrate this does not present an alternative approach with higher levels of accuracy. Oxera (i) ignored the fact that Ofwat triangulate different models at different levels of aggregation and (ii) chose an unsuitable stochastic frontier model to conduct their analysis, which cannot distinguish noise from

⁹⁹ Ibid.

inefficiency within the relevant sample size and faces the same challenge as deciding where to set the catch-up efficiency benchmark. [Reply-006/3.27-3.28]

3.54.1 Ofwat's treatment complexity driver (the proportion of water treated in complexity bands W3–6), cannot account for the increase in treatment complexity that YWS is anticipating in AMP7. Specifically, YWS will require more water to be treated in complexity band W5 and less in band W3, such that the magnitude of the water being treated in complexity bands W3–6 is largely unchanged, despite the water clearly requiring more complex (and therefore more costly) treatment. At PR14, 38% of water was treated at sites in complexity band 3, and a further 38% in complexity band 5. However, at PR19, only 22% of water will be treated at sites in band 3, with 52% treated at sites in band 5. YWS proposed alternative models that can account for this type of treatment complexity as part of the DD response, and Ofwat should have considered them in assessing the efficiency of YWS's wholesale water expenditure.

Growth costs

3.55 Ofwat's models suffer from missing variables to capture growth, meaning that they may fund the historical average growth rates across the industry, thereby overfunding companies with growth rates lower than the industry average. [Reply-006/4.65] It was therefore appropriate to make a downward adjustment to YWS's cost allowance of £34.7m because it is a low growth rate company. [YSP/1.21] [Reply-005/3.68]

3.55.1 In forecasting YWS's future efficient costs, Ofwat has under-forecast YWS's future expected growth in connected properties by using ONS based population data. As explained in SoC, paragraph 120(c) and 198, using this data compared to YWS's¹⁰⁰ has resulted in an under-prediction of future efficient expenditure. As such, YWS does not consider a further downward adjustment of around £35m is warranted.

3.56 It is appropriate to model growth costs with base expenditure. [YSP/2.18-2.20] [R006/4.2] Ofwat's post modelling adjustments sufficiently address the problem that its models suffer from missing growth variables and may only fund the average historical growth rate. [YSP/2.21] [Reply-006/4.4]

3.56.1 Given the limitations in the Ofwat data set and concerns with appropriate cost allocation for growth costs, modelling growth as part of base

¹⁰⁰ Exhibit 033, Edge Analytics: 'Population and Property Forecasts' (September 2016).

expenditure is the most appropriate approach currently. However, as explained above, company-specific growth forecasts should have been used.

3.56.2 As explained at SoC, paragraphs 120(c) and 198, if YWS's forecast connections growth had been used in Ofwat's post-modelling adjustments, YWS would have been entitled to an additional £27m in water and £53m in wastewater costs.

3.57 It is appropriate to use ONS household projections to forecast the number of new connected properties. Companies are protected from the risk of higher outturn population growth through the developer services reconciliation mechanism, cost sharing mechanism, and five-yearly price reviews. [YSP/2.22] [Reply-005/3.67] [Reply-006/4.7, 4.59, 4.72]

3.57.1 As set out in YWS's DD Representation, YWS does not agree with the approach of reconciling differences in growth projections at the end of the AMP, which is when the developer services reconciliation mechanism would be applied. The divergences between the ONS growth forecasts and the more realistic YWS growth rates in the region have the potential to result in significant bill fluctuations for future customers if applied through the developer services reconciliation mechanism.

3.58 Companies' forecast new connections based on local authority data. These tend towards the upper end of the range of possible growth estimates, expose customers to a risk of over-forecasting, and are inappropriate for short-term planning. Water resource management plans (including YWS's in 2009) have historically over-estimated household growth rates. ONS forecasts are therefore more appropriate. [Reply-005/3.63-3.65] [Reply-006/4.6, 4.47-4.50] The ONS's forecast growth rates are similar to YWS's historical growth rates. [Reply-006/4.51]

3.58.1 Companies in the water industry are subject to both environmental and economic regulation. The methodology for forecasting household growth rates has been well established through the water resource management plans and has been aligned with the price review process for several AMP periods. If Ofwat wanted to move away from this approach, it would have been more prudent to consult with both the environmental regulator and the industry to understand the potential implications of misalignment between the planning horizons. The growth rates are important as Ofwat has chosen to adopt a simplistic unit cost approach to determining efficient expenditure for growth needs in its base modelling. Ofwat allows for the incremental growth in a region but

does not allow for the impact of concentrated growth in the event of the development of new communities where up-front capital investment may be required (i.e. to build a new waste water treatment works).

3.58.2 YWS submitted a cost adjustment claim to this effect in the Business Plan submission, where £55m of additional investment was required due to concentrated developments. On review of the latest growth projections in March 2019, the investment requirements fell to £30m and were therefore below the materiality threshold for a cost adjustment claim. Nevertheless, there are still large capital investment requirements which are not accounted for in Ofwat's approach, which are further exacerbated when it also reduces growth estimates.

3.59 YWS does not dispute Ofwat's forecasts of wastewater cost drivers, despite these having been forecast in similar ways to the water cost drivers. Had its own forecast been used for the latter, YWS's allowance would have been £17m lower. [Reply-005/3.70-3.71]

3.59.1 Ofwat's statement that YWS benefits from Ofwat's forecasting approach in wastewater is inaccurate. Although it is true that YWS's modelled cost allowance is higher under Ofwat's approach, Ofwat's forecasting approach penalises YWS in other areas of the analysis, such as the post-modelling adjustment for growth activity (see paragraph 198 of the SoC). The additional allowance associated with using YWS's forecasts of cost drivers is insignificant compared to the penalty YWS suffers from Ofwat's flawed model specification and framework.

Flood Resilience in Hull

3.60 Ofwat's base cost allowance and £16m uplift means it has fully funded the initiative to improve resilience against flooding in Hull and Haltemprice. [YSP/1.22] YWS did not provide compelling evidence to justify the scope and cost build-up of the requested £28.6m nor did it itemise what customers can expect to receive from this capital investment. Therefore, Ofwat could not assess the claim via a bottom-up approach and would have been justified in rejecting the claim outright. Ofwat nevertheless applied a top down calculation because it supports innovation and partnership working. Ofwat's allowance for Hull is in fact £20.5m because it implicitly allowed YWS £4.1m in its base cost models. [Reply-005/3.103-3.107]

3.60.1 This is addressed in SoC, paragraph 307 et seq. The investment required to address the issues in Hull and included in YWS's Business Plan anticipated £50m to deliver the benefits associated with certain of these solutions. Of this, YWS sought £28.7m in its Business Plan in allowed

costs, with the balance of £21.3m to be achieved through partnership funding. In its FD, however, Ofwat allowed YWS only £16.4m for projects in Hull – a shortfall of £12.3m.

3.60.2 Despite Ofwat's claim to the contrary, YWS provided full details of the proposed scope and cost build up on the investment, as well as the expected benefits for customers in a query response to Ofwat.¹⁰¹ Four 'hotspot' areas in the region were identified through extensive modelling to determine which properties are most at risk of flooding.¹⁰² Estimated costs for specific solutions such as permeable paving, swales, verge and street planting, detention basins and geocellular storage were provided. The indicative costing for these interventions total more than £28.7m, however due to the nature of the proposal and the extensive multi-agency approach, specific details as to which elements would be delivered by YWS at this stage are not feasible. Benefits relating to the reduction of flooding (of all types, internal and external) and increases in green space were quantified, with wider resilience, regeneration and education benefits also referenced. In short, YWS's evidence was more than sufficient to support its claimed costs.

3.60.3 The method by which Ofwat chose to reach its allowance is opaque and seemingly has little relevance to the reason for the requested expenditure. Ofwat estimates its modelling allowance for YWS for addressing increased hydraulic flooding risk due to growth. It then identifies a proportion of this (£3.97m) which would be applicable to the Hull and Haltemprice region. Recognising that Hull's flood risk is five times higher than elsewhere, it calculated an additional allowance by multiplying this value by five and then subtracting £3.97m which it deems already implicit in the base costs, resulting in a final allowance of £16.4m (hence Ofwat's assertion that the allowance is £20.5m overall).

3.60.4 However, as evidenced in the IAP response on water resilience,¹⁰³ the prime reason for this investment is not growth or climate change in Hull and Haltemprice. The investment is required to provide general flood resilience to the area under the current population and climate parameters. The city is liable to flooding from a number of different sources and is unique because the sewer tunnel system that drains the city uses two large YWS pumping stations. The solutions to this resilience

¹⁰¹ Exhibit 084, PR19 Query YKY-FD-CE-001.

¹⁰² Exhibits 034.1-034.3, ARUP's Hull and Haltemprice Feasibility reports (2019).

¹⁰³ Exhibit 067-049 (SoC), IAP response annex, YKY.CMI.B1-1 Appendix 12b. Water Resilience in Yorkshire appendix, page 42.

issue will naturally consider future climate change projections as well as addressing the existing risks, but the primary driver for the investment is the *current* flooding risk.

- 3.60.5 Using an implicit allowance for growth in the area to calculate the resilience investment has no sound analytical basis. It does not make sense to then multiply this figure by the increased flood risk and claim it is an appropriate method for assessing efficient expenditure.
- 3.60.6 Once the need for the activity is agreed (which has never hitherto been disputed by Ofwat), the efficiency of the proposed costs should be assessed on their own merits, particularly given the importance of this issue to the residents of Hull and Haltemprice, who have suffered devastating flooding before, and not through a wholly inappropriate and arbitrary approach. Indeed, in its third-party representation Hull City Council expressed its deep concern about Ofwat's actions:

"A flood-prone city like Hull requires innovative green solutions to be built into the fabric of the city in order to make the city more resilient and, at the same time, fit within the societal fabric of the city. A reduction in funding would substantially threaten the ability to implement these vitally important and innovative schemes, which draw upon the expertise of many in the LWWP. ...

I remain hugely concerned that Ofwat's decision not to allow a significant amount of the funding Yorkshire Water had planned for the city risks adversely impacting the substantial progress that has been made and that has been planned. ...

The work with Yorkshire Water on City Water Resilience is central to our plans. We have completed the first phase of this work and the second phase now requires an in-depth analysis of the Water Resilience Framework, supported by LWWP and funded through YWS as it relates to the optimisation of its sewer infrastructure in the broader city-wide context. This work and the LWWP is fundamental to the city achieving its growth ambitions and objectives moving forward." ¹⁰⁴

- 3.60.7 This sentiment was echoed by the East Riding of Yorkshire in their own submission:

¹⁰⁴ See Exhibit 071, Hull City Council: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ebebca986650c27955a89ba/Hull_City_Council_Redacted.pdf.

"The Council believes that full funding of the proposals set out by Yorkshire Water in their business plan and continued collaboration between all Living with Water (LwW) partners is the only possible way to ensure that the East Riding and Hull area becomes more resilient to extreme weather events" ¹⁰⁵

3.60.8 A review of the Living with Water catchment approach to reducing flood risk in Hull has been carried out by Professor Dieter Helm¹⁰⁶ and compared to Ofwat's treatment of the matter in the FD. Summary extracts are copied below:

"There is little evidence too that OFWAT has paid much attention to the 25-year environment plan, its 10 goals and the overarching policy objective to leave the natural environment in a better condition for the next generation. Indeed, it is hard to see that the PR19 outcomes will result in anything other than an overall deterioration of the natural environment – more flood risk, more grey solutions, lower biodiversity and river quality and further carbon emissions"

"OFWAT proposes a generalised methodology to arrive at a specific sum, without proper regard to the longer term, without regard to the wider natural capital benefits and without regard to the role of a water company in the city's overall infrastructure. It dictates a shorter-term solution that does not take proper account of the characteristics of Hull."

"It is perfectly possible for OFWAT, given its existing duties, to facilitate the Living with Water approach. In due course it will have to take catchments and natural capital seriously. It would be better to embrace the wider benefits and the wider natural capital considerations now rather than be forced to do so later."

"Using the Hull example, the CMA has an opportunity to provide for an integrated and longer-term blue/green solution to Hull's sewer flooding and this would be a great example to the industry as it moves into the Environment Bill, Agriculture Bill and CCA net zero target context."

3.61 Ofwat's base econometric models include an allowance to reduce sewer flooding risk in line with historical rates of change in flood

¹⁰⁵ See Exhibit 035, East Riding of Yorkshire Council: Representation to the CMA. [Not yet available on CMA website]

¹⁰⁶ Annex 3, Dieter Helm: 'Catchments, Natural Capital and PR19' (May 2020).

risk due to climate change. This implicit allowance is generally higher than “the investments that companies request in their business plans”. [YSP/Box 2]

3.61.1 To the extent that all companies have invested in climate change adaptation and mitigation activities in the previous years, Ofwat’s models will include some implicit allowance for climate change. However, if the rate of expenditure required to address climate risks increases beyond that observed in historical expenditure, then self-evidently the models will not account for the increased expenditure need. A clear example of this for YWS is the Hull and Haltemprice resilience investment, where the implicit allowance in the cost models does not account for the increased need for expenditure to address climate change impacts now.

3.61.2 The inclusion of extreme weather events in Performance Commitment reporting figures in AMP7 will also require companies to mitigate those increased impacts, otherwise they will likely face significant penalties. This is especially relevant for flooding measures. Until PR19, flooding incidents occurring as a result of extreme weather (i.e. weather events which are outside the design standards of the assets) have been excluded from performance reporting, on the basis that extreme events are outside of management control. It is therefore unlikely that the cost of mitigating the new Performance Commitment requirements will have been captured in the historical cost information.

3.62 YWS did not provide sufficient and convincing evidence that it will face exceptional pressure relative to the wider industry or the historical rates of change to warrant an additional allowance (i.e. outside of that provided for in Ofwat’s cost models) to mitigate the effects of climate change. [YSP/Box 2]

3.62.1 YWS did not request additional allowances specifically for climate change, so it is irrelevant for Ofwat to suggest YWS did not provide sufficient evidence. The investment in Hull and Haltemprice is required to alleviate the pressing and specific geographical circumstances in that area under the current climate assumptions and population. In establishing the appropriate solution for the region, the impact of future climate change was taken into account, but the key driver for the investment is the *current* flood risk.

3.62.2 It is noted in respect to long term planning, that all hydraulic drainage models used by YWS and the Living With Water partners in Hull draw on the latest meteorological projections for climate change in the region.

WINEP**3.63 The £213m gap between Ofwat's view of efficient enhancement costs and YWS's view (as of August 2019) is due to inefficiency. [YSP/1.24, 2.30] [Reply-005/3.134]**

3.63.1 This statement is incorrect. Rather than being due to inefficiency (YWS has been consistently recognised by Ofwat as an efficient company), the cost difference predominantly arises because of:

- (a) flaws in Ofwat's modelling of p-removal, as explained in SoC, paragraph 197(c) and Annex 11 of this Response;
- (b) Ofwat's inappropriate choice of benchmark, SoC paragraphs 190 – 194, and for enhancement costs specifically, paragraph 195; and
- (c) double counting frontier shift with a forward-looking benchmark, SoC, paragraph 201.

Together, these account for £109m of the gap between YWS and Ofwat's view of efficient costs in wastewater services. Ofwat has failed adequately to address YWS's criticisms of its position on these issues, as addressed in Annex 11.

3.63.2 As explained in SoC, paragraph 102, the remainder of the gap in enhancement costs is the result of Ofwat's flawed position on other WINEP cost drivers (including storage schemes, investigations, and flow monitoring at sewage treatment works), as well as resilience investment in Hull and Haltemprice. None of these issues are addressed in Ofwat's Reply, except in relation to Hull and Haltemprice.

3.64 In the FD Ofwat remodelled YWS's P removal costs and increased its allowance by £16m as a result. [YSP/1.24] Ofwat increased YWS's enhancement funding relating to WINEP by around £93m between the DD and the FD. [YSP/2.28]

3.64.1 As explained in SoC, paragraph 197(c), the FD results in material underfunding of YWS's WINEP programme notwithstanding some increase in funding between DD and FD.

3.64.2 While Ofwat's remodelling provided an additional £16m, the additional increase of £93m for enhancement expenditure was the result of YWS reallocating costs from enhancement to base, and not the result of any Ofwat action.

3.64.3 With regards to Northumbrian Water's suggestion to average across all three Ofwat models of p-removal costs for all companies, YWS reiterates

the point made in SoC para 197(c). In particular it is not the case that “*the statistical performance of the model is as good as the performance of the other two models*”, as the other two models fail to account for the legislative drivers of costs. Accounting for the appropriate drivers is a more important consideration than the statistical performance of the models, especially given the small data set of ten observations. Averaging the outcome across all three models underestimates the required expenditure. A better approach would be to use only the model that Ofwat developed for the FD and it is not clear to YWS why Ofwat did not do this.

3.65 The most recent release of WINEP requires YWS to deliver a significantly smaller phosphorous removal programme in 2020-2025 than that assumed in the FD. The CMA must decide whether to take account of this in its redetermination. [Reply-005/3.125-3.129]

3.65.1 During the PR19 process YWS considered the potential of re-phasing the WINEP programme, in particular, the possibility of delivering some p-removal schemes by 2026, rather than during AMP7 as originally planned. This was within the legal timescales set out by the UWWTD and was investigated with the purpose of reducing customer bills in AMP7. The vast majority of the capital expenditure would have still been required in AMP7 due to the typical spend profile of delivering large schemes but there would have been a benefit of delaying operating costs by 1-2 years.

3.65.2 However, following discussions with Ofwat, YWS did not get the required confidence that the remaining costs of the schemes would be appropriately allowed for in AMP8. YWS deemed the risk of getting materially less funding than required to outweigh the benefits of delaying the implementation. This decision was detailed in YWS’s DD Representation.¹⁰⁷

3.65.3 As part of this consideration YWS wrote to the Environment Agency to confirm that the dates could be extended. Ofwat’s response is based on an updated release of the WINEP containing adjusted dates. However, YWS has since confirmed to the Environment Agency (email 14/4/2020) that it intends to deliver all the schemes in line with the original dates. Consistent with this, YWS expects that the regulatory compliance dates of 2025 will be reinstated for the schemes previously identified as being suitable for phasing. It has yet to be agreed whether a new company

¹⁰⁷ Exhibit 068-004 (SoC), 04 YWK DD Representation Cost Efficient, page 22.

specific release of the WINEP programme will be undertaken, or the change will be picked up in the annual release.

3.65.4 Based on this, the second option being proposed by Ofwat is irrelevant, as it will not meet the requirements of an updated WINEP. The only option available is the first option i.e. for the full programme of work to be considered in the AMP7 period.

3.66 The Environment Agency considers chemical removal to be the norm to reduce phosphorous in rivers. This is also the most cost-effective solution. Some companies have had negative experiences with biological removal. YWS's environmental concerns are overstated and the negative effects of chemical treatment to which it refers can be managed. There would be a relatively marginal increase in tanker deliveries if YWS used chemical rather than biological treatment at its seven proposed sites for the latter. [Reply-005/3.130-3.133]

3.66.1 It is accurate to say that chemical removal (ferric dosing) has historically been the norm to reduce phosphorus in rivers. However, the newer biological treatment technology (**BNR**) gives YWS the opportunity to reduce whole life costs, reduce environmental impact and to open up the opportunity for nutrient recovery when the technology is sufficiently developed. Given the scale of YWS's WINEP programme, there are also supply chain resilience concerns associated with ferric dosing.

3.66.2 YWS has confidence that BNR is appropriate having seen it demonstrated at large sites by United Utilities and Severn Trent Water. It disagrees with the anecdotal evidence presented by Ofwat that ferric dosing is the most cost-effective solution. It completed a detailed bottom up assessment of both ferric dosing and BNR solutions for removing phosphorus, which identified that BNR solutions produced lowest whole life costs at 12 of the 18 sites where it was feasible.

3.66.3 While it is true that BNR may not always be the most cost effective, since YWS's plan to retrofit existing Activated Sludge Plants (**ASPs**), the capital and carbon expenditure is favourable in the circumstances.

3.66.4 Subsequent to the publication of the 2013 Atkins report on which Ofwat relies (see R005/3.130), YWS has worked with other water and sewerage companies to better understand the opportunity to use BNR. It is accepted that at the time the report was published chemical dosing was the "go to" solution. This was because permit conditions for Phosphorus removal were less onerous and the equipment was relatively simple to

run. Moreover, BNR was then not well understood except by a small number of technical experts who were involved in design and operation.

3.66.5 However, it was subsequently shown by the National Chemical Investigations programme that it is technically feasible to remove Phosphorus to the low levels required by the AMP7 limits, sometimes with a combination of approaches of BNR and a “trim” chemical dose. YWS continues to work with Stantec (in their appointed capacity as Strategic Planning Partners) and technical peers across the industry to assess the treatment plants which adopt this approach and are satisfied that BNR offers the best whole life cost option for a number of its large sites. The environmental benefits come from the carbon savings from the reuse of existing assets (retrofit to existing ASPs) and longer-term sustainability by reducing reliance on the high quantities of chemicals required by ferric dosing. BNR solutions reduce YWS risk associated with the chemical supply chain challenges, including access to the required quantities of chemical, potable water prioritisation scenarios under emergency planning conditions,¹⁰⁸ logistical risks and opex cost variability.

3.66.6 However, as Ofwat’s methodology only allows costs based on the AMP7 Totex value and does not consider the whole life cost implications of different options, YWS constrained itself to proposing BNR only where it was the lowest AMP7 Totex value as well as producing the lowest whole life costs. As such, this applies at seven sites (and excluded YWS’s largest works) with 22% coverage of YWSs operations (population equivalent). As set out in the SoC Section H, this leads to a large environmental impact and ongoing operating costs to be borne by future generations.

3.66.7 An additional £113m reduction in Totex, as applied by Ofwat at FD, will force YWS to select solutions that are cheaper again. These are likely to have:

- (a) a worse environmental impact, directly contradicting YWS’s customers’ support for a greater focus on environmental solutions; and
- (b) a higher whole life cost (e.g. through the use of cheaper materials, or refurbishing rather than replacing aging existing assets),

¹⁰⁸ Under certain emergency planning circumstances chemical supplies are prioritised to the provision of clean water rather than wastewater treatment. In recent years, emergency planning has been carried in relation to both Brexit and Covid-19.

costing its customers more in the long term and thereby contributing to intergenerational unfairness.

3.66.8 Indeed, the environmental impacts of the FD in this regard were expressly recognised by the Aire Rivers Trust in their third-party submission:

“...the requirements for Phosphorus removal from sewage effluents will, under the proposed regime, lead to an increased use of chemicals with the resultant increased pollution risk from those chemicals and their residues discharged in final effluents, an increase in transport incidence and costs and by promoting investment in hard infrastructure increase the company’s embedded carbon requirement. Alternative approaches, such as integrated catchment management or Biological Nutrient Removal are available that could address this challenge in a potentially more sustainable and financially more effective manner. The short-termism inherent in the determination militates against even investigating this approach.”

3.67 There is no evidence to support YWS’s claim that the UWWTD causes higher phosphorous removal costs than other legislative cost drivers. Ofwat’s third model was used to take account of the fact that YWS had no schemes with a Water Framework Directive ‘no deterioration’ driver, as the latter were previously considered to reduce treatment costs. However, further consideration indicates that there is no evidence to support the latter contention, casting doubt on the need for the third model. The third model may therefore be capturing the tighter consent drive higher costs, which is already accounted for by one of the two other models, further weakening the justification for the third model. [Reply-005/3.135-3.139]

3.67.1 Annex 11 provides evidence that demonstrates that the UWWTD causes higher phosphorous removal costs than other legislative cost drivers, even if consents are included in the model. These results are statistically significant and Oxera’s proposed model improves the model diagnostics compared to Ofwat’s model. As a result, Ofwat’s assertion is incorrect and further underscores the necessity for Ofwat’s third model for the task at hand, which is presumably why Ofwat developed it in the first place.

*Business Rates***3.68 YWS's concerns regarding Ofwat's approach to business rates are sufficiently addressed by an uncertainty mechanism introduced in the FD. [YSP/2.24-2.27] [Reply-005/3.55-3.60]**

3.68.1 This is manifestly incorrect due to the design of Ofwat's uncertainty mechanism. Ofwat refers to the mechanism as incentivising companies to manage costs but persists in its failure to recognise that Business Rates are in fact a tax. Further, as evidenced in the YWS's DD Representation,¹⁰⁹ almost all the components of the revaluation are outside any influence by the company. So Ofwat's approach simply results in an underfunding of the required taxes.

3.68.2 Moreover, Ofwat's remarks fail to mention that it has not corrected two manifest and company-specific flaws in the setting of the baseline for Business Rates which YWS evidenced at both IAP and in its DD representations.

(a) On water, Ofwat has failed to recognise the impact of a time-limited reduction of circa £2m p.a. agreed with the Valuation Office Agency, resulting in an error of £10m over the five-year price control period. This is nothing to do with any uncertainty about the 2021 revaluation; it is a documented matter of fact.

(b) On wastewater, Ofwat has refused to take account of changes in the asset stock during the current regulatory period. Again, this is unrelated to any future revaluation; it is a documented matter of fact and clearly explained in the 2018/19 Annual Performance Report. Ofwat's refusal to recognise these new assets results in an understatement of the actual rates liability of circa £6.5m over the price control period. There is no reasoned basis for such an approach, especially as it appears that one of the fast-track companies received an adjustment for new assets.

3.68.3 Ofwat's presentation of the uncertainty mechanism also disguises the fact that Ofwat constructed the mechanism in a way that inevitably disadvantages the companies. On Ofwat's approach, there is no uncertainty as to whether there will be a revaluation, only as to what the outcome will be. Therefore, by excluding any influence of the revaluation, Ofwat is effectively asserting that the projected impact is zero. The uncertainty mechanism will only ever provide funding for 75% of the impact of the revaluation on the additional Business Rates YWS has to

¹⁰⁹ Exhibit 068-004 (SoC), 04 YWK DD Representation Cost Efficient, page 46.

pay and YWS will always have to fund the remaining 25%. Accordingly, it is not the case that Ofwat's approach to Business Rates is sufficiently addressed by its uncertainty mechanism: on the contrary, the 25% gap will *never* be addressed.

Traffic Management Act (TMA)

3.69 It was appropriate to apply a 50% reduction to YWS's proposed TMA costs because: (i) YWS's high forecast costs mainly result from implementation and covered costs such as manned traffic lights and out-of-hours working, which are covered in Ofwat's base allowance and could not be assumed for all roadworks; (ii) YWS provided no evidence to explain why its forecast costs are significantly higher than its historical and current costs; (iii) YWS has sufficient protection through the cost sharing mechanism and five-year price control mechanism should highway authorities introduce further 'all streets' permits; and (iv) YWS's allowance is the second highest in the sector and significantly higher than other comparable companies. [Reply-005/3.148-3.150]

3.69.1 With regards to point (i), YWS is pleased that Ofwat has finally acknowledged the role of the permit related costs, such as the requirements determined by the highway authorities for manned traffic lights and out of hours working. However, Ofwat has again failed to engage with the evidence provided that YWS's approach to the reporting of these costs was in line with the guidance that Ofwat itself provided around the 2018-19 Annual Performance Report. YWS's DD Representation noted that if other companies were not following this approach, this would seriously distort the comparison of costs between companies.¹¹⁰

3.69.2 YWS is most surprised by Ofwat's suggestion in point (ii) that it had not explained the evolution of its forecast costs. A great deal of evidence was provided about the basis of its forecast, explaining each of the individual components and the relevant drivers of these. The widespread use of permits rather than notices under the new legislation, and the encouragement by the Department of Transport to highway authorities to maximise the usage of the new legislation and permit system provide a very clear set of changes from historic arrangements.

3.69.3 With regard to point (iii), Ofwat has again failed to find anything approaching a balanced risk position. Ofwat seeks to cast doubt on the use of the permits, despite the evidence presented about the material

¹¹⁰ Ibid, page 59.

change in circumstances brought about by the relevant highway authorities. Further, the changes made to the cost sharing mechanism substantially alter the degree and timing of the protection provided.

- 3.69.4 Finally, with regard to point (iv), this is a further example of Ofwat relying on simplistic comparisons rather than undertaking balanced analysis. The fact that a cost element is higher than others may be inconvenient for Ofwat, but where it is supported by strong evidence, this is no basis to apply an arbitrary 50% reduction.

Drinking water quality

3.70 YWS did not detail in its Business Plan (nor following the DD) the options and cost breakdowns of the schemes it had considered nor how costs had been allocated between base and enhancement. Ofwat's cost allowance was therefore reasonable. [Reply-005/3.152-3.156]

- 3.70.1 To comply with guidance on cost allocation, YWS undertook an exercise to determine the split between enhancement and base expenditure of each component of each scheme for the Business Plan submission. Only the elements that met the definition of enhancement were represented in the Drinking Water Inspectorate Submission (the statutory drinking water quality requirements) and in the enhancement expenditure required in Ofwat's data tables. The costs, and the appropriateness of the cost allocation, were subject to YWS's assurance process, including external assurance and YWS Board sign-off.

- 3.70.2 It is true that YWS did not provide a detailed cost breakdown to Ofwat (this also true of the rest of the programme), but neither was this requested or required as part of the price review process. Rather YWS responded to specific statements in Ofwat's deep dive, providing additional clarity where it believed it was necessary. The YWS IAP response set out a point-by-point response to Ofwat's deep dive comments.¹¹¹ It provided whole life cost comparisons for schemes and showed costs split out by base and enhancement costs with accompanying explanations.

- 3.70.3 Ofwat's first assertion is therefore incorrect and does not provide support for the proposition that its cost allowance was reasonable.

¹¹¹ Exhibit 067-081 (SoC), IAP response annex, YKY.CE.A1: Securing cost efficiency, page 35 et seq.

Industrial Emissions Directive

- 3.70.4 Since the submission of the Business Plan in September 2018 the Environment Agency have determined that the IED applies to the biological treatment of sewage sludge. This means that large sludge digestion treatment sites will be required to operate under new and more rigorous environmental permits, which require conditions based around the use of best available techniques (BAT). In order to meet the Directive, there are material costs within AMP7 that were not taken account of in the Business Plan.¹¹²
- 3.70.5 YWS has developed and begun to apply a risk assessment process to meet the EU BAT Guidance. Based on the work carried out to date, the delivery of compliance at 11 relevant sludge treatment facilities will have a material Totex impact of around £150m in AMP7 (£119m capital cost and annual operating costs of £6.8m). This Totex will be a material impact on the bioresource price control, for which the FD set a cost allowance of £305.4m.
- 3.70.6 Further information on the IED is set out in Annex 20.

¹¹² For further detail see Annex 20, YWS: Industrial Emissions Directive Case Study.

4. Regulatory challenge on outcomes

Overview

This section provides YWS's evidence demonstrating that the decisions Ofwat has made regarding outcomes are seriously flawed. Ofwat has asserted that YWS is a poor performing company because it has chosen to carry out low levels of activity and has not looked after its assets as well as other companies. This is not true.

Section 4 provides evidence which demonstrates that:

- Ofwat's assertion that the performance levels set are "stretching but achievable" is not based on a comprehensive, evidenced risk assessment. Rather, it is an assertion based on selective and limited observations and flawed assumptions.
- Ofwat has failed to take account of legitimate regional differences in relation to YWS.
- The 'starting point' to achieve UQ performance is not consistent for all companies, and YWS faces a disproportionate challenge despite meeting or exceeding the majority of its AMP6 regulatory targets.
- Ofwat has not appropriately risk-assessed the package as a whole and there is a significant downside skew.
- There is a clear disconnect between costs and outcomes and there are material differences in water companies' approaches to reporting in the past that Ofwat should have accounted for.

This section considers the positions Ofwat has taken and provides fact-based counter arguments that demonstrate the flaws in Ofwat's approach and the resulting significant downside skew in risk that YWS faces.

4.1 YWS considers Ofwat’s FD included “*poorly designed penalty measures over the next five years*”. Ofwat is not clear which elements of its performance incentives YWS considers to be poorly designed. [YSP/2.35]

4.1.1 This should be clear to Ofwat: YWS has consistently explained – in detail – the inadequacies of the Performance Commitment and ODI framework. For example, SoC, Paragraphs 152 to 187 and Annex 5 (SoC)¹¹³ explain how the complex incentive framework is poorly designed, not based on sound evidence and often relies on inappropriate comparisons. For example:

- (a) Ofwat’s interventions in the performance incentive package ignored customers’ views (despite Ofwat’s assertions to the contrary) and skewed the package away from the efficient level (SoC, paragraphs 156 and 157 and Annex 5 (SoC));
- (b) after the Business Plan stage, Ofwat shifted its expectations for the measurement of UQ for common Performance Commitments, (SoC, paragraphs 158 to 161); and
- (c) Ofwat made numerous errors in its approach to incentive rates, caps and collars (SoC, paragraphs 175 to 182).

4.1.2 The analytical deficiencies in the ODI incentive design are further compounded by Ofwat’s failure to undertake any risk analysis on the individual ODIs or at the package level, resulting in an overstatement of potential upside and an understatement of downside risk.¹¹⁴

4.1.3 In its SoC, YWS pointed out flaws in Ofwat’s approach to numerous individual Performance Commitments and ODIs. YWS addressed:

- (a) Ofwat’s flawed approach to YWS’s leakage target (SoC, paragraphs 162 to 165);
- (b) Ofwat’s disconnect between leakage reduction and mains repairs (SoC, paragraphs 166 to 169); and
- (c) other common and comparable Performance Commitments (SoC, paragraphs 170 to 174).

¹¹³ Annex 05 (SoC), Economic Insight: ‘Maximising Customer Benefits from the Outcomes Framework’ (March 2019).

¹¹⁴ For further details, see Annex 02 (SoC), Economic Insight: ‘Ofwat’s Approach to Risk Analysis in the Final Determinations’.

4.1.4 Below, YWS has further addressed Ofwat's specific points on the following:

- (a) the water supply interruptions Performance Commitment, which YWS was forced to reduce because Ofwat did not provide sufficient funding;
- (b) pollution incidents, where YWS maintains that funding is required to meet UQ levels;
- (c) sewer collapses, where Ofwat's short-term change in methodology has meant that YWS's long-term strategy for asset renewal is compromised;
- (d) the length of river improved Performance Commitment, which is not a point in dispute; and
- (e) water quality contacts.

4.1.5 Overall, as explained at SoC, paragraphs 183 to 187 and Annex 5 (SoC), the combined effect of Ofwat's interventions has been to skew the performance incentive package to the negative and misalign the package with the preferences of YWS's customers. After management intervention, YWS's most likely overall outcome over AMP7 is a penalty position of around £60m, though the penalty position could be much higher (see paragraph 2.22.6, above).

Why Ofwat considers that its overall incentives package is appropriate for YWS

4.2 Ofwat identified three common Performance Commitments (water supply interruptions, internal sewer flooding and pollution incidents) where there was "good quality data and we saw no reason why companies should differ in their performance" [Ofwat Teach-in of 4 February, pages 44-45].

4.2.1 A common theme throughout PR19 has been that increases in levels of Performance Commitments have been driven by changes in reporting methodology rather than changes in company activity on the ground. As such, Ofwat is under an obligation to ensure that data collected from the different companies is reliably comparable. However, as shown below, companies differ substantially in terms of reporting compliance and the data collected cannot be reliably used to underpin an incentives regime that is unflinchingly rigid in its application. In setting common Performance Commitments and especially in applying its approach to UQ-level targets, Ofwat should have taken significantly more care in

considering company-specific factors that influence both performance and reporting.

- 4.2.2 The data used to compare performance across companies in these areas are dependent on the telemetry infrastructure¹¹⁵ available to each company – and this differs materially. In response to regulatory stimulus, YWS invested early in this type of technology and it has more robust datasets and methods of detection than many of the other water companies as a result.
- 4.2.3 The companies did not report their data in a uniform way for the three common Performance Commitments in year 2018/19, which, along with company forecasts, Ofwat relied on to determine the UQ levels for those Performance Commitments. While YWS noted improvement in the quality of reporting between 2017/18 and 2018/19, there are many areas where Ofwat's conclusion that there is "*good quality data*" to compare companies is misconceived.
- 4.2.4 For example, in the case of **water supply interruptions**, where companies are not able to rely on network data recorded by measurement devices, the results from that company are more reliant on customer feedback and notifications, which themselves are inherently less reliable or accurate. Companies are required to report a simple RAG conformance grade against its data. However, Ofwat did not provide evidence on how this was taken into account in its determinations of target UQ levels on comparative Performance Commitments.
- 4.2.5 Water companies' reporting of actual results for the water supply interruptions Performance Commitment shows a mixed level of reporting compliance, with only marginal improvements in reporting compliance between 2017/18 and 2018/19. Table 5 below illustrates the relative quality of company data in 2018/19. The three common Performance Commitments identified above contain a specific number of component measures. Companies self-assess on the quality of their reporting for each component measure, giving a red, amber or green rating for each component measure. A red rating indicates reporting is not compliant with the guidance and has a material impact on reporting; an amber rating indicates reporting is not compliant with the guidance but has no material impact on reporting; and a green rating indicates reporting fully complies with the guidance. For water supply

¹¹⁵ Telemetry Infrastructure refers to the instruments that measure performance or condition and the associated process of recording and transmitting the readings of these instruments. Examples include water pressure; water or wastewater flow and level; and monitoring of the vibration or heat of a pump.

interruptions, some companies still report deficiencies in their compliance with key components of this measure due to a lack of telemetry across their networks. This led YWS to ask Ofwat during the horizontal audit of converged PR19 Performance Commitments that companies be mandated to report the data source used for determining start times for supply interruption events, so that Ofwat could consider how a company’s ability to report accurately was impacted by the technology it had deployed. YWS provided this additional information voluntarily to give Ofwat and its customers confidence in its published figures.

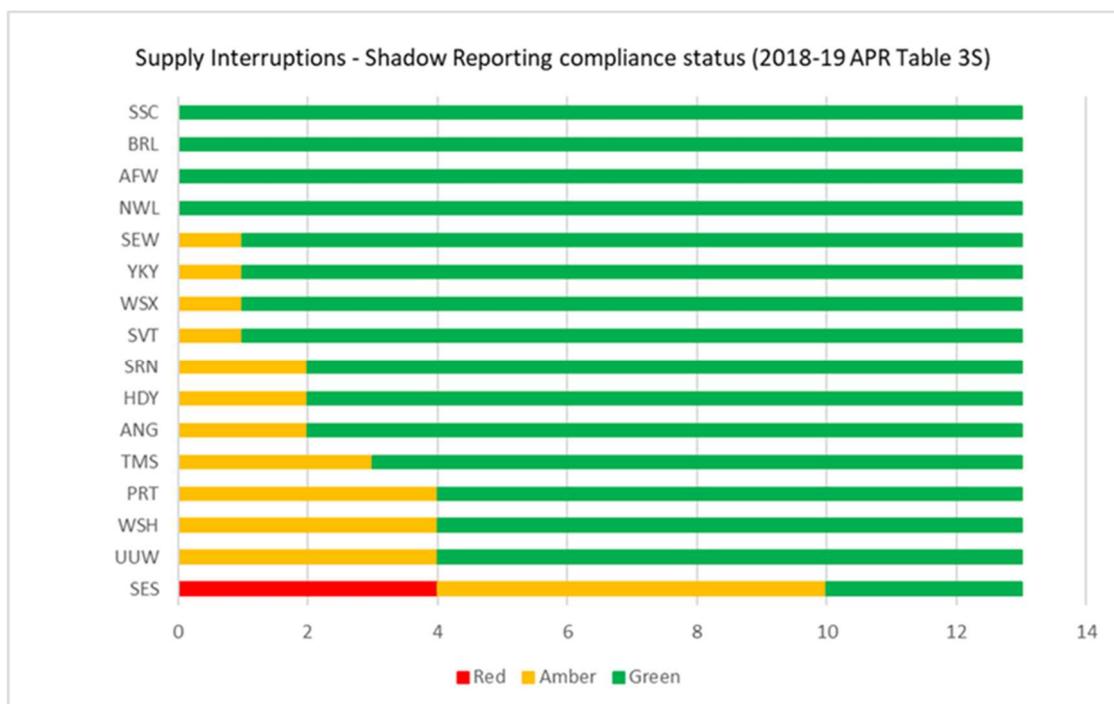


Table 5: companies reported compliance with water supply interruptions reporting obligations. Source: Table 3S from the 2018-19 Annual Performance Report (*APR*).

4.2.6 YWS has similar concerns about data reporting in relation to **internal sewer flooding**. While in 2018-19 five of the companies reported improved compliance, two reported a deterioration of their compliance. Some companies reported that they were not yet able to conform well to all of the components of the measure, especially in relation to the measurement of severe weather events. YWS notes that the two companies that are outliers in the data showing correlation between

internal sewer flooding and proportion of cellars (United Utilities and Anglian Water) also report the lowest levels of reporting compliance.

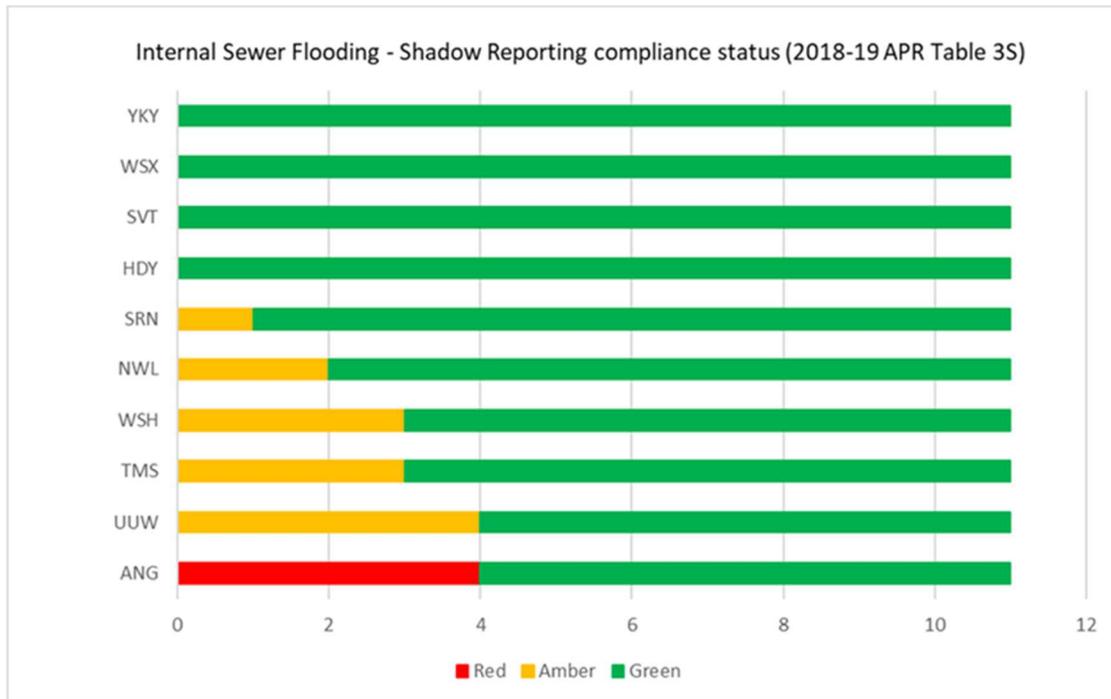


Table 6: companies reported compliance with internal sewer flooding reporting obligations. Source: Table 3S from the 2018-19 APR.

4.2.7 The position is even starker for **leakage**. Between the 2017-18 and 2018-19 reporting years, ten of the water companies reported a deterioration in reporting compliance. This is due partially to the change in the definition of leakage, which led to reporting on 76 component measures (in 2017-18 companies reported on only 24 component measures). As can be seen from Table 7 below, companies’ compliance with the new common definitions is patchy.

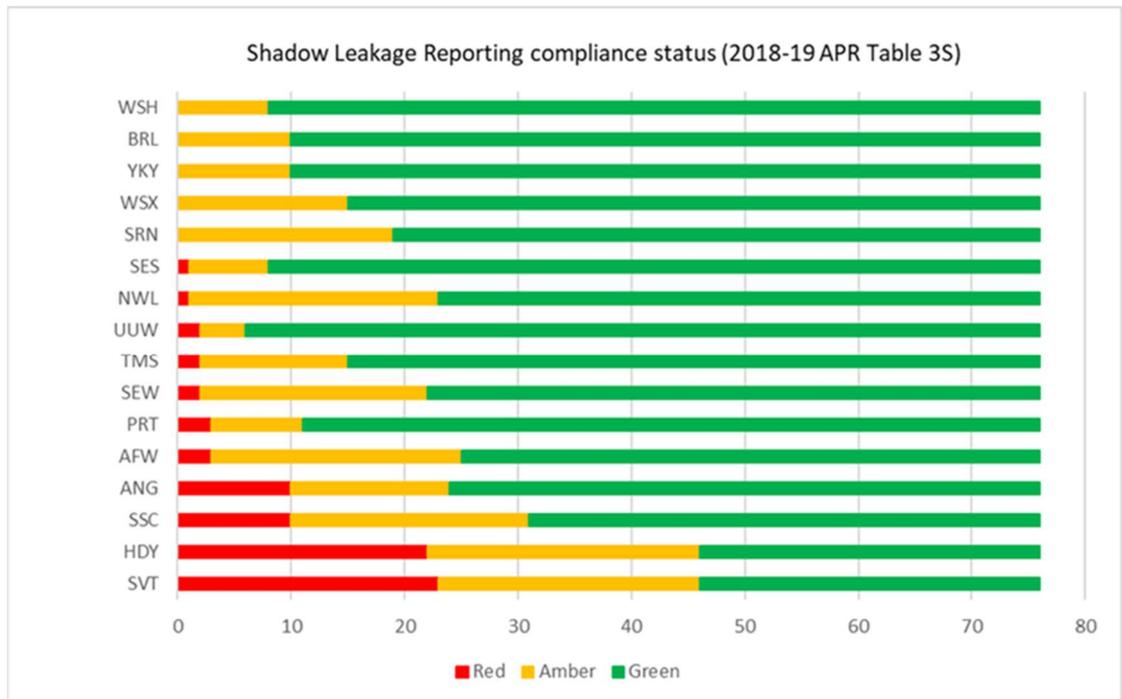


Table 7: companies reported compliance with leakage reporting obligations. Source: Table 3S from the 2018-19 APR.

- 4.2.8 Accordingly, YWS considers that none of these data sets provides “good quality data” and it doubts that it is reliable for setting common Performance Commitments across all companies. There are differences in conformance with the Methodology across multiple measures and therefore the data cannot be considered reliable in its comparability.
- 4.2.9 As can be seen from Tables 5 to 7 above, YWS is a strong performer in terms of compliance with the reporting criteria across each of the Performance Commitments. The technology used to measure more accurately the scale and duration of incidents is more likely to highlight increased non-compliance than more manual reporting. For example, if a water supply interruption happens overnight, a company that uses technology to report on performance would be able to note the loss of supply quickly due to changes in pressure and flow. Companies that rely on customer contacts to report supply interruptions would only record the interruption if a customer tried to use water during the night and, upon finding the supply interrupted, contacted the company (instead of waiting until the next morning). This has two consequences for the company using technology: (i) it is more likely that an event is recorded at all (for companies with manual reporting, the event could have resolved itself before being reported); and (ii) the length of the event will likely be longer (as the start time of the event is recorded promptly by technology as opposed to the time of the customer contact).

4.2.10 YWS's concern, therefore, is that companies such as YWS that have invested in telemetry technology and are better able to record incidents accurately are being perversely disadvantaged by the common Performance Commitments. The common Performance Commitments also disincentivise companies with weaker compliance with the reporting criteria from improving their performance.

4.2.11 YWS supports comparative regulation, but it submits that Ofwat should have given greater consideration to regional-specific factors and testimony from individual companies. Ofwat's cost models are not robust enough to set such stringent UQ benchmarks, and the performance data quality is not reliable enough to justify UQ targets without uncertainty being properly accounted for.

4.3 YWS is a poor performer in many of the common performance measures when compared with its peers [YSP/2.34]

4.3.1 As explained at SoC paragraph 29 et seq., Ofwat's characterisation is selective and ignores the wider picture that YWS has illustrated in its SoC, in particular YWS's historical track-record near the efficiency frontier.¹¹⁶

4.4 If YWS delivers the performance levels in the DD it would receive outperformance payments of £18m on water supply interruptions over AMP7 under the FD [YSP/2.34]

4.4.1 Ofwat's failure to undertake risk analysis means its numbers are not credible. Ofwat has adduced no evidence to inform the likelihood of YWS hitting the targets posed (whether in the DD or FD). The figure quoted is ultimately irrelevant given that it relates to only one section of the outcomes package and ignores the rest. In isolating the potential rewards for a single Performance Commitment, Ofwat has again failed to understand the fundamental point about the trade-offs companies face in delivering performance for allowed costs at the overall level.

4.4.2 Furthermore, Ofwat's statement is hypothetical as it is unrealistic to assume that YWS would be able to reach the performance levels in Ofwat's DD given the lack of funding it has received to reach UQ performance.¹¹⁷ Even if YWS were to meet the water supply interruption targets, an increase of £18m would be dwarfed by the funding gap inherent in Ofwat's FD, which amounts to over £300m.

¹¹⁶ See YWS, SoC, paragraph 41.

¹¹⁷ See Section 0, below; YWS, SoC, paragraph 139 et seq.; and Annex 01 (SoC), Economic Insight: 'Financeability of the notionally efficient firm: a bottom-up analysis'.

4.4.3 The fact is that YWS has already revised its delivery plans in light of Ofwat's FD. The delivery plan forecasts show a likelihood of significant underperformance of the overall incentives package during AMP7. Based on a P50 analysis, the most likely outcome over AMP7 is a penalty position of around £60m. This calculation includes sensitivity testing to assess the susceptibility of performance to weather volatility. However, it should be noted that the assessment was made before the Covid-19 crisis, which is likely to worsen YWS's potential penalty position.

4.5 Ofwat used both companies' evidence and historical and sector comparative information to ensure companies' outcome delivery incentives adequately protected customers and incentivised performance. Ofwat checked companies' proposed rates against a number of other factors such as large variance from PR14 rates, comparative performance, and past performance. [YSP/2.37]

4.5.1 YWS does not consider that Ofwat's incentive rate interventions better protect customers or better incentivise performance. As noted in SoC paragraph 177, Ofwat's general approach to incentive rate interventions was to move incentive rates closer to industry averages. However, given the differences between companies in terms of customer preferences and efficient costs, industry averages are not relevant for individual companies. Ofwat's incentive rate interventions therefore do not protect YWS customers and distort the incentives for YWS to deliver the efficient level of service to its customers.

4.5.2 The fact that Ofwat undertook a number of checks and used a number of evidence sources to set incentive rates is irrelevant. Some of the checks that Ofwat undertook were not appropriate and the alternative sources it used to retriangulate incentive rates were not comparable. Most notably, PR14 incentive rates are not comparable to PR19 incentive rates – both the definitions of Performance Commitments and the levels of performance are different. Furthermore, Ofwat did not undertake any checks to confirm the validity of PR14 incentive rates. This is particularly concerning given that Ofwat itself raised concerns about the robustness of the customer research that underpinned the PR14 incentive rates – which was the reason that Ofwat changed its methodology in terms of calculating incentive rates between PR14 and PR19.

4.5.3 The flaws in Ofwat's approach to intervening in incentive rates are set out in more detail in Annex 5 (SoC).

4.6 Since the start of PR14, water companies have received net payments of £112 million for the achievement of financial incentives on Performance Commitments. [CCIP/3.31] An efficient company

should on average have net zero outcome delivery incentive payments. [CCIP/3.53]

- 4.6.1 Ofwat implies that net ODI payments from PR14 show that the industry is benefitting from too-low targets, thus justifying the new targets at PR19 and/or that the level of stretch companies now must bridge is lower than the headline figures would suggest on the basis that the companies were already outperforming on important metrics. This is misleading.
- 4.6.2 First, these net ODI payments are relatively small and there is certainly no evidence of systemic outperformance. According to Ofwat’s own data, the £112m of net payments is equivalent to just 0.1% RoRE – a minor outperformance when considered in the context of Ofwat’s PR14 ODI cap of +/- 2% RoRE and Ofwat’s expected ODI RoRE ranges at PR14.¹¹⁸ Indeed, outperformance of 0.1% RoRE is entirely within Ofwat’s expected RoRE range at PR14.
- 4.6.3 Second, to the extent that Ofwat is suggesting industry-wide outperformance, this is not supported by the facts: as is illustrated in Table 8 below, there has been a broad spread of companies earning net positive and negative ODI payments so far in AMP6 (i.e. a balance of ‘winners’ and ‘losers’).

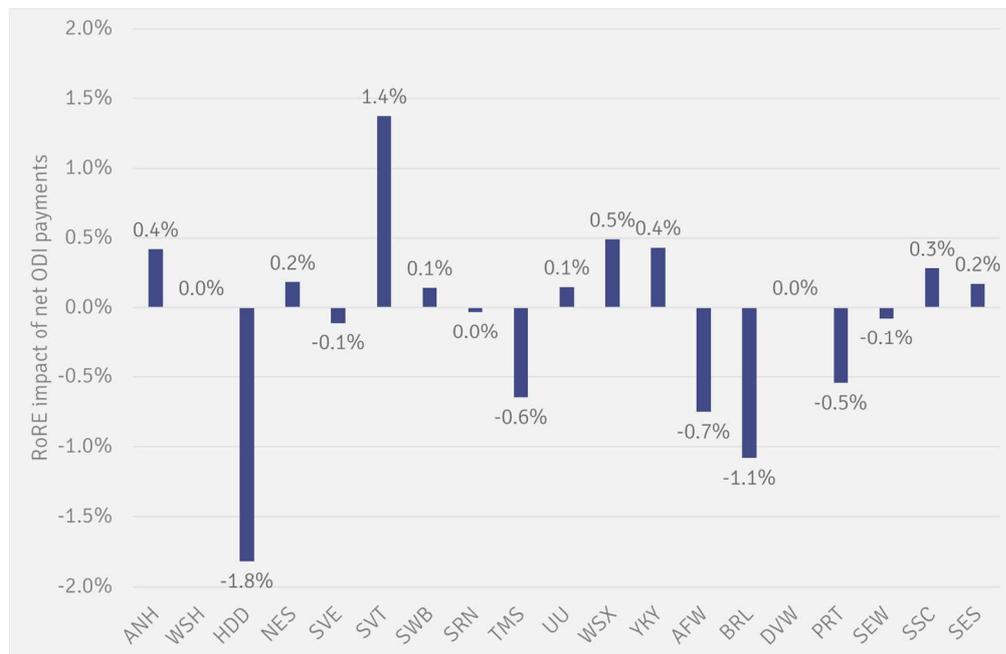


Table 8: RoRE impact of ODI payments in the first four years of AMP6. Source: based on published data from Ofwat’s Service Delivery Report

¹¹⁸ Ofwat’s expected ODI RoRE ranges at PR14 are illustrated in Figure 4.2 of the CCIP.

2018-19.¹¹⁹ Note: the figure splits out pre- and post-merger companies separately.

4.6.4 To put the £112m figure into context, it states on Ofwat's website that PR14 was a £44bn investment. As a proportion of that investment, £112m represents 0.25%. In addition, companies such as YWS responded to early indications about the potential stretch in PR19, further investing in infrastructure and therefore outstripping PR14 Performance Commitment incentives.

4.6.5 Moreover, the logic of Ofwat's implication is faulty – even if Ofwat had got the level of challenge wrong historically that does not imply that it has got it right this time. Ofwat set the ODIs at PR14 to encourage companies to outperform and now seeks to penalise companies because they did – rather than encouraging further outperformance.

4.7 Overall there is more opportunity to earn outperformance in the 2020/25 period than the 2015/20 period. At PR14 a greater number of ODIs had underperformance rates that were greater than outperformance rates, than is the case at PR19. [Reply-005/4.10, 4.11]

4.7.1 YWS disagrees with Ofwat's suggestion that it has a greater opportunity to earn outperformance payments in AMP7 compared to AMP6. The opportunity to earn outperformance payments is determined by the ability of the company to perform in relation to the Performance Commitment levels, along with the incentive rates, caps, collars, etc. As set out in Table 15 at paragraph 6.2.8 below, YWS faces a P90 upside of 0.19%. This is below the upside that Ofwat calculated for PR14 and below the upside that YWS has experienced so far in AMP6. As set out further in Section 6, the analysis that Ofwat relies on to draw its conclusion about RoRE risk for PR19 is not robust and should be disregarded.

4.7.2 Furthermore, the number of ODIs that have underperformance rates greater than outperformance rates is not deterministic of the extent of outperformance payments that can be earned. As noted above, what matters is the package as a whole and what levels of performance are actually achievable. YWS also disagrees with any suggestions that it can earn outperformance payments in AMP7 because it has done so in AMP6. The targets are clearly different, so this conclusion cannot be drawn.

¹¹⁹ Available from: <https://www.ofwat.gov.uk/regulated-companies/company-obligations/outcomes/service-and-delivery-2018-19/> (last accessed 27 May 2020).

4.8 YWS is a poor performer on asset health metrics. [Reply-005/4.8, 4.18]

4.8.1 Ofwat has made this statement without reliable evidence – see Annex 4,¹²⁰ Economic Insight’s report on a framework for asset health:

- (a) Asset health measures are not comparable across companies;
- (b) Ofwat has not taken into account differences between companies;
- (c) Asset health targets have not been set on a comparative basis;
- (d) Ofwat has not given a defensible view of what constitutes ‘good performance’ for YWS or other water companies.

4.8.2 As demonstrated in SoC paragraphs 26 and 27, against Ofwat’s own metrics YWS has been judged as ‘stable’ in 55 out of the 60 measures since 2005.

4.9 The Economic Insight report, Annex 5 (SoC), fails to mention that two of Ofwat’s most financially material Performance Commitment level interventions were large reductions in the stretch applicable to water supply interruptions and leakage. The scale of these stretch reductions was significantly greater than almost all interventions where Ofwat increased stretch on other Performance Commitment levels. [Reply-005/4.52]

4.9.1 The Economic Insight report does mention that Ofwat made a number of interventions that individually reduced the level of stretch, including specifically referring to water supply interruptions and leakage.¹²¹ Furthermore, the report repeatedly recognises that conclusions about the overall effect of Ofwat’s interventions cannot be drawn from individual examples or separate analyses of different types of interventions (e.g. changes in Performance Commitment levels, changes in incentive rates, etc.). Ofwat has not conducted a robust analysis of the overall financial implications of its FD ODI package, and is wrong to say that the lessening of stretch on water supply interruptions and leakage Performance Commitment levels offsets the increase in stretch in other aspects. The Economic Insight report presents the results of an overall risk analysis, which shows that Ofwat’s interventions significantly skew ODI payments to the downside. Ofwat’s failure to conduct a proper risk analysis is further discussed in Section 6, below.

¹²⁰ Annex 04, Economic Insight: ‘Framework for Asset Health’ (May 2020).

¹²¹ See Annex 05 (SoC), Economic Insight, ‘Ofwat’s approach to ODI interventions in the final determinations’, page 21.

4.10 As the Economic Insight report Annex 5 (SoC) acknowledges, Ofwat’s ODI interventions include a series of measures which collectively reduce YWS’s exposure to extreme downside ODI risks. These include sizeable reductions to enhanced underperformance ODI rates, increasing the number of standard and enhanced ODI collars and loosening enhanced ODI thresholds (which restricts the performance range over which enhanced ODI rates apply). Taken together, these interventions have substantially increased YWS’s financial protection from extreme downside performance scenarios, such as severe weather events [Reply-005/4.53, 4.54; Reply-007/Sections 8 and 12].

4.10.1 As the Economic Insight report repeatedly mentions, conclusions about the overall balance of risk can only be drawn from an overall analysis. Ofwat has not conducted a robust analysis of package risk, and its assertions that the FD package gives rise to balanced risk are false. Ofwat’s failure to conduct a proper risk analysis is further discussed in Section 6.

4.11 Annex 5 (SoC) Section 8.2 highlights two Performance Commitments where Ofwat materially increased the stretch required to meet Performance Commitment levels to efficient levels – namely mains repairs and external sewer flooding – and Economic Insight uses this to argue that Ofwat interventions have a large negative impact on expected ODI returns. [Reply-005/4.55]

4.11.1 As the Economic Insight report states, the two examples illustrate why the overall effect of Ofwat’s interventions is “large”. Section 8.3 of the report subsequently presents the results of the overall analysis. The report does not draw conclusions from these two examples alone, and so Ofwat has mischaracterised the use of the two examples. In relation to each of the three specific points that Ofwat raises in Reply-005, paragraph 4.55:

(a) YWS and its advisors disagree that Ofwat’s interventions (generally and in relation to the two example Performance Commitments) align Performance Commitment levels with what an efficient company can achieve. Ofwat’s interventions collectively go beyond what an efficient company can deliver, and therefore there is a negative financial impact for an efficient company.

(b) The Economic Insight report does not omit the fact that Ofwat intervened significantly in the ODI rates of the two example Performance Commitments. Nevertheless, the extent of Ofwat’s

interventions on the incentive rates is irrelevant for the analysis presented in Section 8.2 of the report, which quantifies the payments that YWS would earn if it performed as per the Performance Commitment levels it proposed, but which was also subject to Ofwat's FD ODI package. The analysis set out in Section 8.3 of the report addresses the combined effect of other interventions such as the introduction of collars.

- (c) Ofwat has mischaracterised the findings of one of the sections of the report and there is not a discord between the results of the analysis in the earlier and later parts of the report. The report is clear that the two examples are used to illustrate why the aggregate effect is "large" and that only the type of analysis presented in Section 8.3 of the report can provide an overall estimate of the effect of Ofwat's interventions. Section 5 of the report does not find that ODI interventions were broadly balanced in terms of their impact on ODI returns.

4.12 On assessing ODI rates, Ofwat does not agree that its incorporation of wider sector information on ODI rates was arbitrary. [Reply-005/4.97-4.101]

4.12.1 YWS does not disagree that the incorporation of wider sector information can be used to inform ODI rates. However, the way in which Ofwat has incorporated such information results in incentive rates that are arbitrarily closer to industry averages that are not applicable to YWS, along with PR14 incentive rates that are not comparable to PR19 incentive rates. YWS addresses Ofwat's points in Reply-005 paragraphs 4.97-4.101 in turn in the following paragraphs.

4.12.2 Ofwat's attempt to reduce the influence of unexplained variations does not better align ODI rates with actual customer preferences, as it suggests. It simply reduces variance between companies. As is summarised in SoC, paragraph 181, Ofwat's approach does not take appropriate account of the difference between companies or the views expressed by YWS's customers. Ofwat did not have the right evidence to judge independently what customers' actual preferences are, so has resulted in moving rates towards industry averages based on rates that are not comparable.

4.12.3 As Ofwat notes, it could have selected different points on the distribution (e.g. other than ± 0.5 standard deviations around the industry average). However, there was no basis for Ofwat's choice, and therefore it is arbitrary. Furthermore, although Ofwat used a range of 'tests' (including one based on the reasonable range), Ofwat nevertheless used the upper

/ lower bound of its reasonable range to set a number of YWS's ODI rates.

- 4.12.4 Similarly, contrary to Ofwat's position in Reply-005 paragraph 4.100, the fact that the PR14 incentive rate check was one of several is irrelevant. The test is flawed and the PR14 incentive rates should not have been used in the way that they were to retriangulate PR19 incentive rates. PR14 incentive rates are not directly comparable to PR19 rates, and therefore their use in triangulation cannot be expected to move incentive rates closer to customer preferences.
- 4.12.5 Finally, Ofwat is wrong to say that YWS has not explained why Ofwat's approach to diminishing marginal returns is inconsistent. SoC paragraph 181 directs the reader to Annex 5 (SoC), Section 7.3. The Economic Insight report explains that Ofwat uses a factor of 1.2 to set a number of outperformance rates lower than underperformance rates, to reflect the fact that there may be diminishing benefits to increased performance. The 1.2 factor is based on data from companies' plans. However, Ofwat also states that it does not adjust incentive rates to account for diminishing marginal benefits when it has increased Performance Commitment levels, because a standard adjustment factor would introduce distortion and uncertainty. Furthermore, it states that it does not have evidence from companies' plans to support a standard adjustment factor. Ofwat does not adjust PR14 rates for changes in Performance Commitment levels either. Ofwat's two different treatments of diminishing marginal benefits are clearly entirely inconsistent with each other.

4.13 Ofwat's analysis shows that YWS is one of only two companies for which the FD implies there is greater scope for net outperformance payments than underperformance payments. [Reply-005/4.57]

- 4.13.1 YWS sees no basis for this assessment and would ask Ofwat to explain it; YWS's (pre Covid-19) P50 analysis shows a likelihood of significant downside on its net performance payments, at around £60m (see paragraph 4.4.3 above). This is obviously inconsistent with achieving net outperformance payments. As discussed in detail in Annex 5 (SoC), there were significant flaws with Ofwat's risk assessment of YWS's ODI position.

Ofwat's position on customer engagement

- 4.14 Ofwat's interventions in the outcomes package did not override customer preferences. Interventions were designed to better align the company's outcomes package with customer interests, including**

ensuring Performance Commitments were in line with the costs the company was allocated. [Reply-005/4.9, 4.51, 4.93; Reply-007/5.3-5.13]

Ofwat's ODI interventions were in some cases made to better align YWS's rates with the results of its own customer valuation research (i.e. where YWS misrepresented the results of its research). [Reply-005/2.22]

Ofwat's interventions have largely preserved the preferences implied by the ODI rates in YWS's Business Plan. [Reply-005/2.25 and Figure 2.1]

- 4.14.1 YWS maintains that Ofwat's interventions override the preferences of its customers and it disagrees that the FD outcomes package is consistent with cost allowances (the latter aspect is discussed in Section 5 below).
- 4.14.2 As set out further in 4.16 et seq. below, YWS undertook extensive customer research in line with Ofwat's guidance (and Ofwat acknowledged the high quality of the customer valuation work YWS undertook – see paragraph 4.16.1 below). More specifically, YWS employed a range of approaches, including asking customers directly how much they were willing to pay for certain changes to performance. With the range of evidence from its customer research, YWS subsequently triangulated across the evidence, taking account of the merits of the different sources of evidence. Ofwat's interventions therefore replace YWS's careful reflection of its customers' views. For example, Ofwat replaces the views of YWS customers by:
- (a) averaging YWS's proposed incentive rates and those of other companies (whose customers have different preferences);
 - (b) averaging YWS's proposed incentive rates with PR14 incentive rates (which are not comparable);
 - (c) setting YWS's incentive rates at the industry average, or the upper/lower bound of Ofwat's 'reasonable range' (which is itself based on only a selection of proposed incentive rates);
 - (d) removing datapoints from YWS's triangulation of evidence to arrive at an incentive rate that more closely aligns with the

industry average (for example, as is the case with water supply interruptions¹²² and external sewer flooding).

4.14.3 Ofwat’s overriding of customer preferences was also extensive. As is illustrated in the figure below, out of YWS’s 27 financial Performance Commitments, Ofwat intervened in 19. Furthermore, the ‘magnitude’ of interventions was often large (e.g. more than halving or doubling incentive rates).

	PC levels	Standard incentive rates	Enhanced incentive rates	Caps, collars and deadbands
Internal sewer flooding	1			1
Pollution incidents	1	1		1
Water supply interruptions	1	1	1	1
Leakage	1	1	1	1
Drinking water quality			NA	1
Mains repairs	1	1	NA	
Per capita consumption	1	1	1	1
Treatment works compliance	1	1	NA	1
Sewer collapses	1	1	NA	
Unplanned outage	1	1	NA	1
Carbon/ Operational carbon	1	1	NA	1
Priority services awareness		1	NA	
Gap sites		1	NA	
Voids verification	1	1	NA	1
Drinking water contacts	1	1	NA	1
Low pressure			NA	
External sewer flooding	1	1	NA	1
Working with others		1	NA	
Land conserved and enhanced			NA	
Length of river improved	1		NA	1
Education			NA	
Water recycling			NA	
Repairing or replacing customer owned pipes			NA	
Surface water management			NA	
Quality agricultural products			NA	
Bathing water quality			NA	1
Significant water supply events			NA	

Source: Economic Insight analysis. Note: a red highlighted ‘1’ denotes an intervention, and a grey highlighted ‘NA’ denotes where Ofwat’s methodology did not allow for a PC to have an enhanced incentive. PCs are ordered by: common comparable level PCs; common non-comparable level PCs; comparable bespoke PCs; and non-comparable bespoke PCs.

Table 8a: Ofwat’s interventions in YWS’s financial Performance Commitments.

4.14.4 Ofwat’s interventions have not preserved the preferences implied by the ODI rates in YWS’s Business Plan. The rank order of incentive rates that Ofwat presents in Reply-005 Figure 2.1 (and uses as an example of preserving customer preferences) is relatively meaningless. This is because the values in the figure are in relation to the units of the Performance Commitments – which are not comparable. For example, it

¹²² See below further discussion of Ofwat’s overriding of the views of YWS customers in relation to water supply interruptions in paragraph 4.19.1 et seq. This is one example of where Ofwat suggests the rate it imposed is more reflective of YWS customers views.

is largely irrelevant whether the value of one internal sewer flooding incident is greater than the value given to one additional minute of a supply interruption. What matters is whether the monetary value reflects customer preferences. Rather than preserving customer views, Figure 2.1 shows Ofwat's interventions have significantly changed some of the incentive rates that YWS proposed, and which did reflect customer views.

4.14.5 Third parties also support YWS's implementation of its customers' views:

- (a) Yorkshire Forum for Water Customers states that "*the Forum commended Yorkshire Water on delivering high quality customer research within a very demanding timescale and for the extent of the consultation with the Forum. We believe that Yorkshire Water has gone to great lengths to understand what its customers want, and that this outcome has not been reflected in the final determination.*"¹²³
- (b) A joint-letter from the CCG Chairs of three of the appealing companies notes "[Ofwat's] *comment comes across as a poor reflection on the thousands of hours which CCG members have spent giving independent and challenging scrutiny to the company's customer engagement, and the degree to which it is reflected into business plans.*"

4.14.6 In the round, the impact of Ofwat's interventions are that the FD ODI package would incentivise YWS to deliver levels of service that YWS considers are *not* in customers' best interests, as compared to YWS's proposed incentive rates which were based on substantial customer research. Hence, YWS will find it extremely challenging to explain Ofwat's interventions to even the most informed customer. As Southern Water submitted, "*it is important that it is clear how Ofwat has taken into account the customer voice and balanced between customer views and its own sectoral policy objectives. Without this clear 'line of sight', there is a risk that customers become disenfranchised from these processes, or that companies cannot in good faith submit business plans that allow for their customers' priorities to be adequately reflected.*"¹²⁴

¹²³ Exhibit 036, Yorkshire Forum for Water Customers: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ebec05be90e071e37cfd1cf/Yorkshire_Forum_for_Water_Customers.pdf (last accessed 27 May 2020).

¹²⁴ Exhibit 037, Southern Water: Representation to the CMA (May 2020) Available at: https://assets.publishing.service.gov.uk/media/5ec502e886650c2794d750c7/Southern_Water_submission_.pdf (last accessed 27 May 2020).

4.15 Customers do not have access to the in-depth analysis of comparative and historical performance and engineering expertise that Ofwat applied to assess Performance Commitment levels. [Reply-005/2.20; Reply-001/3.115]

4.15.1 This statement is incorrect. YWS did share comparative and historical performance data with its customers; and Ofwat's assertion that it has greater 'engineering expertise' than customers in assessing the Performance Commitment levels is of no relevance, as explained below. Moreover, it is not apparent that Ofwat used significant engineering expertise in its analysis in any event as its approach was overwhelmingly statistical and based on industry averages.

4.15.2 Ofwat's PR19 Methodology required companies to focus on service levels that customers would expect and value in the long term, up to 2035. Throughout the PR19 process, YWS asked customers for their preferences for service both now and over the long term. Across a combination of qualitative and quantitative research studies which, contrary to Ofwat's suggestion, included sharing with customers comparative and historical industry performance data, customers were asked to rank the services they receive by importance and to place a relative value on each of these service areas presented.¹²⁵ An example showcard is provided below to illustrate how historical and company comparative information was presented to customers during willingness to pay research.

¹²⁵ Customer Aspirations and Comparability of Service (June 2017) and Willingness to Pay (November 2017).

YouGov

We are talking here about where pressure is low in Yorkshire Water’s pipes. There may still be occasions when people receive inadequate pressure because, for example, they share a supply with one or more other properties and this is a problem with their private pipes.

Properties include houses, flats and business premises. They may be affected by low pressure at peak times, or more often, meaning it could take a long time to run a sink or bath and a normal shower system may not work properly.



Poor water pressure

Yorkshire Water performance at 2020

15

properties per year affected by low pressure



Yorkshire Water ranking vs. water industry at 2020

< >

Table 9: example of a showcard providing service level performance and industry comparison.

4.15.3 In this research, customers were asked how they viewed the performance of YWS’s current service levels across a range of service measures. The impact of the performance data of other water and sewage companies, including the cost of the average bill, was also considered by customers. Based on an understanding of current performance of both YWS and other water companies, the research explored where customers would like to see YWS’s performance in 2025, 2030, 2035 and 2050. Finally, the research invited customers to express their thoughts in relation to common Performance Commitments and the possibility of Ofwat extending these.

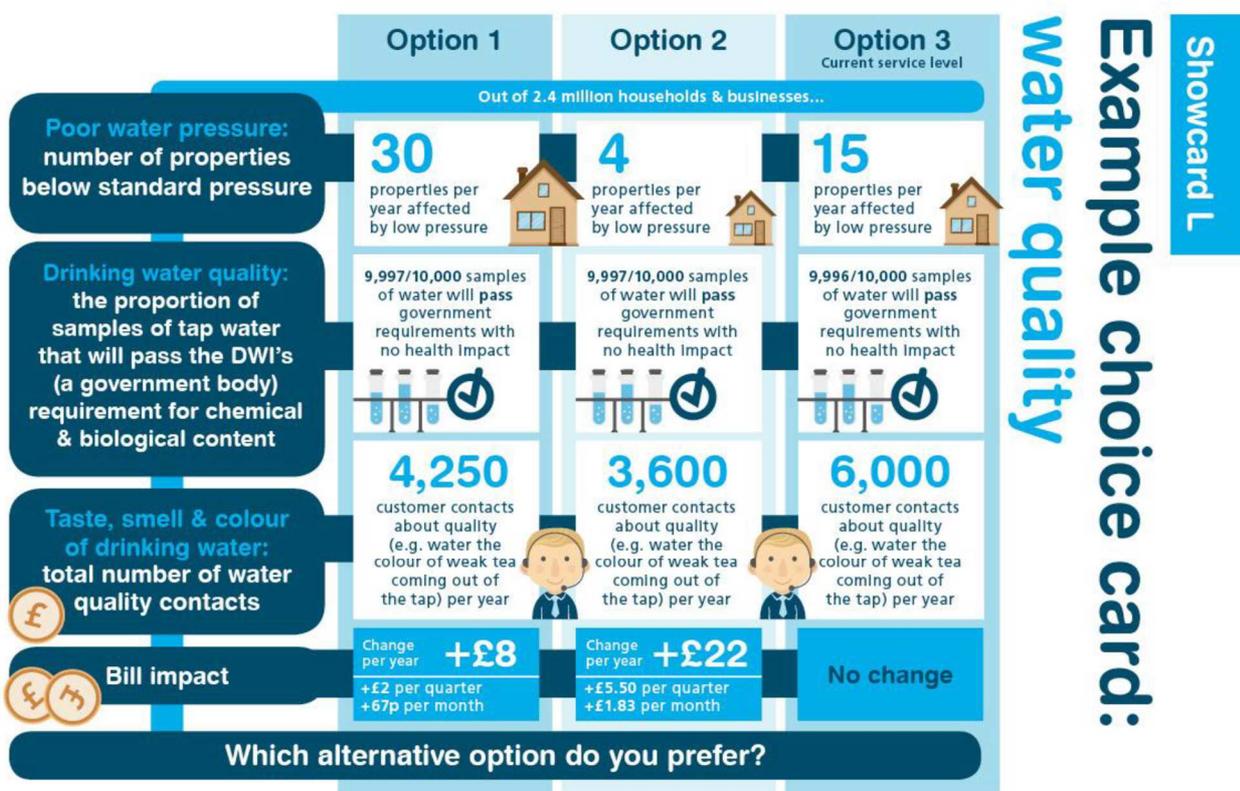


Table 10: Example of a choice card providing three choices with various options of service including bill impact.

4.16 Companies’ customer research varies in quality and must be challenged on the basis of the wider set of information available to Ofwat. [Reply-005/2.23; Reply-001/3.116]

4.16.1 The starting point is that YWS’s customer research was recognised by Ofwat as being of high quality: it stated that YWS’s Business Plan “is high

quality with convincing evidence of its customer engagement".¹²⁶ It is not clear to YWS, therefore, why its ODI package was subject to such extensive interventions, implicitly (according to this statement) on the basis of superior quality information from elsewhere.

4.16.2 From the outset of PR19, Ofwat made it clear that it expected companies' business plans to be built from the bottom up, thoroughly grounded in customer preferences.¹²⁷ Ofwat wanted to see companies using a range of tools and techniques to gather evidence and draw insight about customers' preferences and priorities for water and wastewater services, whether that be through day-to-day interaction with customers or via research studies. This expectation was further strengthened with the publication of Ofwat's Customer Engagement and Outcomes paper,¹²⁸ which acknowledged that a 'one size fits all' approach to customer engagement does not work. Ofwat's criteria for conducting customer research included:

- (a) use of more innovative customer engagement approaches, such as revealed preference surveys and use of insights from behavioural economics, together with evidence obtained through day-to-day contact with customers;
- (b) the need to triangulate the findings of customer feedback against other available data sources and research;
- (c) engagement with hard-to-reach and vulnerable customers; and
- (d) a need to inform customers of performance levels relative to other water companies.

4.16.3 In light of Ofwat's recommendations, YWS ensured that an innovative customer engagement programme was developed to meet Ofwat's expectations. The project included six work packages, as outlined in Table 11 below, which drew on a range of data to allow methodological

¹²⁶ Exhibit 038, Ofwat: 'PR19 initial assessment of plans: Yorkshire Water company categorisation', page 3.

¹²⁷ Exhibit 039, Cathryn Ross, speaking notes Customer Engagement Seminar (2 November 2017).

¹²⁸ Exhibit 040, Ofwat: 'Towards Water 2020 – policy issues: customer engagement and outcomes' (July 2015).

triangulation¹²⁹ whereby data of different types are used to cumulatively refine and validate research outputs.

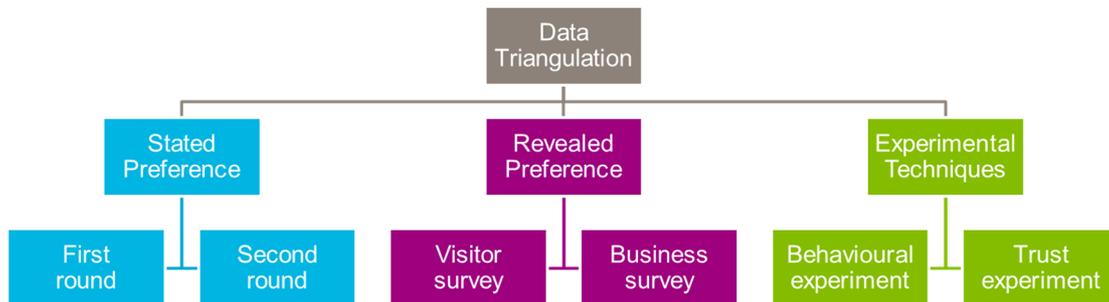


Table 11: Overview of the six work packages.

4.16.4 YWS's customer engagement process was also peer-reviewed by international experts and was further scrutinised by an independent customer challenge group to ensure that customers' views were fairly reflected in the Business Plan. The engagement was awarded a 'B' classification, which met the criteria set out by Ofwat.

4.17 Customer preference surveys should not be confused with judgments as to the efficiency of companies' plans, as customers are not well placed to make such judgments, and do not relieve companies of the obligation to evidence the need for or efficiency of their proposed expenditure. It can be assumed that customers do not want to pay for inefficiency. Ofwat had the discretion to depart from the output of customer engagement surveys. [Reply-001/3.117-3.119]

4.17.1 The customer preference surveys allow companies to understand which services customers value the most, which in turn informs the cost-benefit analysis all companies undertake (i.e. providing the benefit side of the cost-benefit equation). Ofwat's efficiency challenge focusses on the cost side of the cost-benefit equation and should not be mistaken as justification for overriding customer views.

4.18 Ofwat's interventions were not arbitrary but targeted and proportionate. [Reply-005/2.24]

4.18.1 Please see Annex 5 (SoC), which provides evidence to the contrary. YWS notes that Ofwat has failed to engage with this evidence.

¹²⁹ It is worth noting that while Ofwat recommended companies undertake a triangulated approach, it did not provide any industry guidance for companies to follow. Ofwat also stated that it still expected companies to undertake a traditional stated preference survey as part of the approach to triangulation in case values from other studies were not deemed robust.

4.19 Ofwat's imposed ODI rate for water supply interruptions is a better reflection of customer preferences than the rate YWS originally proposed. [Reply-005/2.26]

4.19.1 YWS disagrees that the incentive rates imposed by Ofwat for water supply interruptions are a better reflection of YWS's customer preferences. Ofwat appears to have selectively removed one of the evidence sources in YWS's triangulation to arrive at a result more consistent with its industry average. Ofwat is wrongly suggesting that the views of YWS customers are equivalent to industry comparative statistics.

4.19.2 To arrive at its incentive rate, Ofwat removed one of the datapoints that YWS used in its triangulation. Specifically, it removed a value for 3-6 hour supply interruption events in relation to non-household customers, which had been derived from a 'revealed preference' business survey. Ofwat removed the datapoint on the basis that it was an outlier compared to results from other forms of customer research. YWS does not consider this a valid reason to remove the datapoint. The relative size of the datapoint was considered in YWS's triangulation, along with the merits of the research approach, and YWS chose to include it within its calculations. Indeed, it is not surprising that non-household customers place a high value on short water supply interruptions as these types of water stoppages are likely to have significant impacts on business operations.

4.19.3 Notwithstanding the appropriateness of including that specific datapoint, Ofwat did not remove similarly sized datapoints resulting from the same research method for other durations of supply interruption events (e.g. 6-12 hours, 12-24 hours, etc.). The various durations were triangulated across to give a result for the Performance Commitment as a whole (which is defined on the basis of supply interruptions of longer than 3 hours). Ofwat's calculation approach is therefore inconsistent and selective. Ofwat's adjustment therefore amounts to an arbitrary change to YWS's incentive rate. Notably, if Ofwat had been consistent in its approach, the resulting incentive rate would be much lower.

4.19.4 Subsequently to selectively removing one of the datapoints, Ofwat made a series of further adjustments. It first adjusted the outperformance rate down, by setting it equal to the underperformance rate divided by 1.2. The 1.2 adjustment is based on the notion of diminishing marginal returns – it was calculated by Ofwat based on evidence in company plans

and is applied across companies. YWS does not consider this adjustment better reflects the views of its customers.¹³⁰

4.19.5 Finally, Ofwat then set the underperformance rate equal to the now reduced outperformance rate – removing any differential for diminishing marginal returns and resulting in both incentive rates being below Ofwat’s original interpretation of the customer research. This final adjustment was part of Ofwat’s attempts to ensure that YWS’s ODI package provided balanced incentives at the company and industry level. YWS does not consider that this adjustment better reflects the views of its customers.

4.20 Ofwat intervened in YWS’s per capita consumption ODI because it was not based on customer valuation and therefore cannot amount to Ofwat supplanting customer views with its own. [Reply-005/2.27]

4.20.1 YWS is surprised by this statement, which infers sub-optimal customer consultation by YWS. It is established economic valuation practice that it is not appropriate to expect customers to place a value on reducing their water use. Such an approach would effectively result in asking customers the question ‘would you be willing to pay more for using less water?’

4.20.2 Instead, YWS based the per capita consumption ODI rates on the average customer bill value, effectively linking the value of a litre of avoided water consumption with the avoided bill cost. Ofwat supplanted this economic logic with an average of other companies’ ODI rates for per capita consumption, which were presumably all derived using different methods, given the difficulties in eliciting customer valuations for per capita consumption. Ofwat’s view is arbitrary and is not grounded in Yorkshire-specific information.

4.21 YWS’s proposed underperformance rate for leakage was materially lower than the industry average and below the corresponding rate for AMP6 (i.e. customers would have been less protected in AMP7 despite the stretching 25% reduction proposed by YWS). Ofwat’s imposed rate is more robust, respects the relative ranking of YWS’s customers’ preferences, and respects the relative distribution of customer preferences across companies. Ofwat did not therefore

¹³⁰ The flaws in Ofwat’s 1.2 adjustment are further discussed in Annex 05 (SoC).

disregard the views of YWS’s customers. [Reply-005/2.29-32 and Figure 2.2]

- 4.21.1 Ofwat disregarded the views of YWS customers by averaging across YWS’s proposed leakage rate and: (i) the industry average (which is not a measure of the views of YWS customers); and (ii) YWS’s incentive rate from PR14 (which is not a comparable measure). YWS’s ODI rate for leakage at PR14 was not based on customer research but was instead linked to a specific marginal cost for a performance level i.e. very different to the one proposed by the company in PR19. Consequently, Ofwat’s intervention on the PR19 leakage ODI rate replaced a high-quality piece of contemporary customer research with a combination of out of date cost information and research from other companies that reflected their customer views and which may not have been of the same quality.
- 4.21.2 Ofwat further distorted the views of YWS customers by adjusting the outperformance rate by a factor of 1.2 to make it lower than the underperformance rate. This factor was based on industry wide data, and is not a reflection of the views of YWS customers.
- 4.21.3 Ofwat suggests that by including more datapoints in its triangulation it has increased the robustness of the incentive rate. This is incorrect because the other datapoints that it has included are not reliable estimates of the views of YWS customers. YWS’s proposed incentive rate was based on robust evidence. It was based on extensive customer research and calculated in accordance with Ofwat’s guidance (see Economic Insight’s report¹³¹). More specifically, the incentive rates were based on triangulation between the results from YWS’s stated preference survey and behavioural experiment survey, as well as an estimate of the costs of associated greenhouse gas emissions of leakage. Although Ofwat stated in the DD that it did not have any concerns with the quality of YWS’s customer research, or how YWS calculated the incentive rates, Ofwat still intervened:

“Whilst we have not identified any concerns with the quality of the underlying research nor the derivation of the outcome delivery incentive rate, the proposed rates imply a lower level of customer

¹³¹ Annex 05 (SoC), Economic Insight: ‘Ofwat’s approach to ODI interventions in the Final Determination’, (March 2020).

*protection compared to the company's corresponding 2015-20 outcome delivery incentive.*¹³²

4.21.4 Further, Ofwat appears to be justifying the intervention on the basis that, as the company proposed a large step change in performance, customers should therefore receive a greater level of protection in case the company did not deliver. Ofwat's logic here that 'harder performance should justify bigger penalties' demonstrates how the regulatory incentives create an unjustifiable increase in the downside risk for the company. Ofwat also appears to be equating larger incentive rates to greater customer protection. This is incorrect – customers are best protected by incentive rates that reflect their views and the marginal costs of performance (along with Performance Commitment levels set at the economically efficient level).

4.21.5 Finally, Ofwat's comments about preserving relative rankings and industry distributions are largely irrelevant. For example, as noted in paragraph 4.14.4 above, the ranking of YWS incentive rates is meaningless because all of the units are different; the absolute monetary values are what matters.

4.22 CCW found that 88 percent of YWS's customers found the DD plan and bill reduction acceptable, comparable with 86 percent approval for YWS's Business Plan. [Reply-005/2.33]

4.22.1 A 2% movement in a customer survey is not statistically significant and is certainly not enough evidence to justify the material change in bill profile resulting from Ofwat's interventions at the DD. Further, customer survey results should not be confused with the legitimacy of regulatory decisions, and do not relieve Ofwat from the obligation to make well-evidenced interventions.

*Why Ofwat considered the 25% reduction in **leakage** to be an inappropriate level*

4.23 Ofwat do not consider that the company provided sufficient evidence that customers supported the 25% reduction across the five-year period. [Reply-005/4.66]

4.23.1 YWS would suggest that Ofwat's bare assertion is not supported by the facts. The proposed target was presented to customers at the final stage of customer research undertaken to test acceptability and affordability of the Business Plan, which was supported by 88% of the customers

¹³² Exhibit 041, Ofwat: 'PR19 draft determinations, Yorkshire Water – Delivering outcomes for customers actions and interventions' page 13.

surveyed. Further to this, 97% of customers supported the 'Water Supply Big Goal', a customer research programme carried out in response to the IAP which also presented the 25% leakage target to customers.

4.24 Ofwat considers that the 25% reduction originally presented by YWS was not optimised. After 2025 the rate of leakage reduction reduces significantly. [Reply-005/4.70]

4.24.1 It is not clear what Ofwat means by "*not optimised*" in this context. The 25% leakage improvement included in YWS's Business Plan was cost-beneficial, and explicitly supported by customers – see Section 5 below. YWS set ambitious and stretching targets in response to Ofwat's Methodology, which challenged companies to consider the industry UQ performance level in setting targets.

*Why Ofwat considers the 15% reduction in **leakage** to be achievable without additional cost allowances*

4.25 All companies which have not sought a redetermination accepted the leakage Performance Commitment levels set in their respective FDs. [Reply-006/5.47]

4.25.1 This does not demonstrate that Ofwat's target is appropriate for YWS (nor indeed that other companies' leakage Performance Commitment levels were appropriate for them – leakage is just one area to consider when deciding whether or not to accept the FD overall).

4.26 Leakage levels in 2017-18 were similar to those in 2000-01 despite significant improvements in "leakage technology" in the meantime. [CCIP, 3.37] Innovation should enable companies to go beyond SELL within base costs. [Reply-006/5.43, 5.47]

4.26.1 This statement is a gross over-simplification of the facts relating to leakage rates and improvements.

4.26.2 There have been two types of innovation concerning leakage in the last two decades.

4.26.3 The first is **innovation in detection**, allowing companies to more easily and accurately detect leakage.

4.26.4 Traditionally, leakage has been harder to detect as it had to be done via manual processes. Over the last two decades, YWS has been at the forefront of new technology. For example, in the last few years it has invested in:

- (a) *Acoustic logging*: these devices analyse pipe noise and raise an alarm when a suspected leak is detected, which enables enhanced localisation of leak detected activity and quicker promotion of leaks for repair. YWS installed 35,000 such devices in Autumn 2019 (which at the time was the largest deployment in the UK).
- (b) *Satellite detection*: YWS uses satellite imagery and advanced algorithms to detect ground that has been saturated with treated water, creating points of interest for leakage activity.
- (c) *Conceptual detections techniques*: YWS continues to lead the industry in detection techniques and it is involved in ongoing trials of temperature and pressure transient sensors in the leak detection process.

Such technologies are helpful in assisting YWS in detecting and fixing leaks, but as the technology improves and more leaks are found, more leakage is recorded, so superficially it might seem that leakage rates are not improving. In addition, none of these activities yield benefit without a leaking asset being physically located and repaired in the network.

4.26.5 The second is **operational innovation**. Historically, and particularly through the period of 2000-2018, YWS has undertaken significant programmes of activities. These have included:

- (a) *Optimisation of zonal pressures*: following the significant leakage breakout in the winter of 2010/11 YWS conducted a large-scale review of zonal pressures to avoid excessive night pressure and unnecessary stresses on the network, including installation of pressure modulation at hundreds of key pressure control devices and pumping stations.
- (b) *Network renewal*: over the last two AMPs YWS has renewed over 500km of its distribution network. This process has been optimised to focus on areas with the highest failure rate to ensure the most cost-beneficial solutions are implemented.
- (c) *Calm Networks training*: YWS undertook a large-scale 'Calm Networks' training programme for all employees, contractors and third-parties that could potentially interact with the network (such as the fire service). This programme focussed on correct valve operations and utilised training rigs to demonstrate how pressure transients could be caused by incorrect operation.
- (d) *Prioritisation*: YWS has continuously developed its prioritisation process, targeting the most cost-beneficial areas for investment.

(e) *Water grid system.* YWS has the ability to move water around its network due to its innovative water grid, to which many other water companies do not have access. This has meant that YWS has not had a regional deficit and therefore its historic SELL has not supported driving further leakage reduction.

4.26.6 As YWS has undertaken large programmes of network optimisation previously, there are fewer parts of the network left to 'optimise'. Activities to 'optimise' in further areas are less cost efficient than activities that it has already undertaken during AMP5 and AMP6. Therefore YWS, as a relative high performer, requires more costly solutions to reach the same percentage level of leakage reduction. As opportunities to reduce leakage through more traditional routes have already been exploited, future programmes of leakage reduction require addressing the fabric of the network and addressing the aging asset base through network reconfiguration, i.e. repair and replacement.

4.26.7 YWS continues to investigate newer leakage technologies, however, fundamentally, the speed of improvement required to reach the 15% reduction in Ofwat's FD means that YWS has to continue to rely on the immediate benefits driven by its more traditional leakage 'find-and-fix' programme.¹³³ Ofwat's position that innovative solutions will enable companies to go beyond SELL within base costs in such a short period of time was formulated without evidence and is out-of-touch with the practicalities of an industry based on the physical transportation of large quantities of cheap, heavy liquid in assets with very long asset lives.

4.26.8 ***Statistical unreliability.*** YWS would respectfully suggest that the CMA should be cautious in relation to Ofwat's comparison of leakage totals from two individual years, as such comparisons can be misleading. Indeed, as acknowledged by Ofwat "*figures inevitably vary year on year*".¹³⁴ Please see Table 12 below, which shows the development of leakage totals from 1992-93 to 2018-19.

¹³³ For more details, please see Annex 05, YWS: Leakage and Mains Repairs Case Study.

¹³⁴ Exhibit 003 (SoC), CCIP, paragraph 3.38.

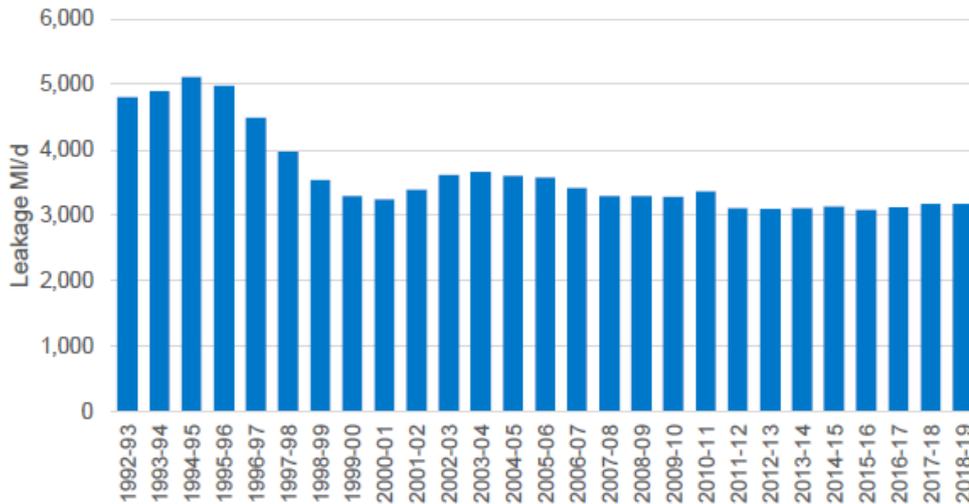


Table 12: total water industry leakage (ml/day) 1992-93. Source: Ofwat FD document 'Overall stretch on costs, outcomes and cost of capital policy appendix', page 30, Figure 4.

4.26.9 As explained at paragraph 4.2.7 above, it should be noted that due to significant development and improvement in leakage calculation methodology since 2000, a direct and exact comparison cannot be drawn between the 2000-01 and 2017-18 levels of leakage that are reported in Table 12. The understanding of leakage has improved dramatically throughout the industry during that time, which has led to more accurate reporting of actual levels of leakage. For example:

- (a) the accuracy of leakage calculation has been an area of focus for industry research groups over the period, resulting in several significant improvements to methodologies;
- (b) the percentage of properties with meters has increased significantly, which has improved the quantification of customer-side leakage; and
- (c) there have been significant improvements in the availability and accuracy of flow and pressure technology, improving the accuracy of leakage data.

4.26.10 As a result of the use of increasingly accurate methods of measurement, incidents of leakage are now being reported that would previously have gone undetected. This means that the levels reported at the beginning of that period were underreported when compared with later levels. Therefore, the levels from 2000-01 cannot reliably be compared with the levels in 2017-18.

4.27 YWS agrees in reducing leakage below the SELL in Yorkshire but has not proposed an alternative assessment of the level of leakage that can be delivered within base costs. [Reply-006/5.42, 5.46]

4.27.1 YWS does agree with reducing leakage levels below the SELL in Yorkshire, but, as has been YWS's position throughout PR19, enhancement funding is necessary to achieve this.¹³⁵

4.28 All water companies voluntarily accepted Ofwat's challenge to reduce leakage by 15% during AMP7. [Reply-006/5.9]

4.28.1 This misrepresents the position. Under Ofwat's approach for assessing companies' adoption in their business plans of the Ofwat's Methodology for PR19, companies were consistently marked down for not adhering to specifics of the Methodology, even if companies had good reasons to disagree. In other words, water companies were effectively forced to adopt (as opposed to voluntarily accept) Ofwat's Methodology, including its 15% leakage target. Indeed, the majority of companies strongly disagreed with Ofwat's approach to setting targets for leakage in the methodology consultation, raising concerns which Ofwat neither engaged with, nor addressed, throughout PR19.

4.28.2 Irrespective of the 15% target level, YWS not unreasonably expected Ofwat to have regard to costs in setting such an ambitious leakage reduction figure, as discussed below at paragraph 5.3.

4.29 The reduction in leakage was particularly challenging for YWS and Ofwat sufficiently moderated this in the FD in response to YWS's proposal for a lower target. [CCIP/3.40, 3.42]

4.29.1 This is a misstatement of the position. YWS has explained in SoC paragraphs 162-165 that its initial leakage reduction target in its Business Plan was significantly more ambitious (at 25%) than the 15% reduction expected by Ofwat. However, due to Ofwat's interventions to disallow funding to achieve such significant improvements in performance, YWS was forced to revise its target down to 15%. The "*challenging*" circumstances were created by Ofwat ignoring the link between costs and outcomes, which made it unfeasible for YWS to adopt the more ambitious leakage target supported by customers that it set itself in its Business Plan.

¹³⁵ Exhibit 001 (SoC), YWS's PR19 Business Plan, page 125: "*around £65 million will be needed each year to complete the step change in 2020-25*".

4.30 YWS contends that the 15% leakage reduction target lacks rationale but accepted that this challenge could be met within base costs in its DD representations. [Reply-006/5.46]

4.30.1 This is a misrepresentation. YWS clearly explained in the DD representation that its acceptance of the revised Totex and Performance Commitments created a significant change in the risk profile of the company. While YWS sought to challenge itself to find ways to follow Ofwat's policy approach, YWS continued to highlight to Ofwat the concerns around the significant flaws in its methodology.¹³⁶

4.30.2 In accepting a 15% leakage reduction, without being allowed appropriate costs to do so, YWS had to shift around £65m from capex to opex in order to drive this level of leakage reduction while minimising its penalty exposure. This shift from capex to opex will necessarily result in a reduction in longer-term asset maintenance programmes and prevent some planned works from being carried out.

4.31 While YWS has met its 2018-19 leakage Performance Commitment level, its comparative performance on leakage is relatively poor. The company is currently a lower quartile performer in terms of its comparative leakage levels when normalised by mains length and on a per property basis.

It is inappropriate to provide funding to YWS to reduce leakage to levels achieved by its peers. [Reply-006/5.26]

4.31.1 Leakage is not a comparative measure, which is why every company has a different SELL, so Ofwat's statements about YWS's relative performance are unsound. Furthermore, Ofwat has not adequately demonstrated that UQ leakage performance corresponds with its cost allowance models.¹³⁷

4.32 YWS did not use historical data showing the amount of leakage reduction from additional mains repairs to forecast the requirement of increased mains repairs to reduce leakage in the future. It provided data to show the recent historical impact of additional mains repairs on leakage reduction, but did not use this data to forecast future additional mains repairs to meet leakage reduction

¹³⁶ Exhibit 042, YWS: 'DD representation document: Delivering Outcomes for Customers', page 4.

¹³⁷ See Section 6 below and Annex 06 (SoC), Economic Insight, 'Ofwat's approach to funding UQ performance'.

requirements. Therefore, the company does not demonstrate the leakage reduction it will gain from its forecast mains repairs levels.

4.32.1 As illustrated in SoC, paragraph 169, Ofwat has recognised the relationship between mains repairs and leakage. See Annex 5, which explains in more detail the potential leakage reductions that would be gained from its forecast mains repairs levels.

4.33 Ofwat reduced the frontier shift to 1.1% in part to take account of the challenge on leakage performance. [Reply-006/5.22, 5.54, 7.15]

4.33.1 YWS welcomes Ofwat's apparent recognition that frontier shift captures the combined performance and cost improvements available to companies throughout the period, and that these should be considered together. However, the extent of the combined improvement challenge on leakage (15%) and efficiency expectations on costs (15%) far outweighs the token movement Ofwat has made on the frontier shift assumptions. Section 3.31 et seq. above also demonstrate that Ofwat's choice of 1.1% for frontier shift is not supported by sufficient evidence.

*Why Ofwat thinks its targets for **internal sewer flooding** are appropriate*

4.34 On internal sewer flooding, Ofwat states that "*based on comparative data, Yorkshire Water is now the worst performer of the eleven wastewater companies.*" [YSP, 1.12] This uses the 'shadow reporting' data. [Reply-005/4.29 – see figure 4.2, 4.32]

4.34.1 This is misleading. YWS's performance targets in AMP6 were set by reference to targets specific to YWS, rather than to an industry level. When assessed against prior AMPs, it can be seen that YWS has met Ofwat's performance targets and the CMA should not, therefore, accept Ofwat's insinuation that YWS is a poor performer.

4.34.2 Any national comparison must also be considered with caution as this does not involve a like-for-like comparison as circumstances may differ materially between regions. As described below in paragraphs 4.40 to 4.41 below, the proportion of cellared properties connected to YWS's waste water network is close to four times the national average. 71% of YWS's occurrences of internal sewer flooding relate to cellared properties. This is consistent with the CMA's approach in its PR14 determination for Bristol Water, where it observed that a blanket use of the industry upper quartile target was inappropriate.

4.34.3 Further details are provided in the Internal Sewer Flooding Case Study at Annex 6.¹³⁸

4.35 The statement in YWS's SoC that its historical internal sewer flooding performance is strong is "misleading" as it infers that YWS's performance was strong relative to other firms. In fact, YWS's PR14 internal sewer flooding Performance Commitment was firm-specific and Ofwat made it less challenging for YWS, and what YWS says is a "strong" performance really means it is earning outperformance payments while being a poor performer relative to the sector. [Reply-005/4.30]

4.35.1 YWS disputes the characterisation that its SoC is misleading: YWS did not suggest that its performance was strong relative to other firms. On the contrary, YWS was simply showing that it had met all of Ofwat's prior performance targets for internal sewer flooding "*when compared with Ofwat's previous regulatory standard*".¹³⁹ Please see the prior response in relation to the limitations of the comparative assessment Ofwat has undertaken.

4.35.2 At the PR14 DD stage, Ofwat took the decision to implement a system of horizontal comparisons across companies which included setting an UQ target for internal sewer flooding. Ofwat recognised that the data used by companies was not directly comparable.¹⁴⁰ Therefore, Ofwat based the UQ target on data to which it applied three sets of adjustments:

- (a) including flooding on private sewerage assets that had recently been adopted by the companies;
- (b) including all incidents irrespective of their cause; and
- (c) adjusting for the difference between the number of properties impacted, and the number of incidents (i.e. where there are repeat incidents).

4.35.3 Ofwat used the adjusted data to set targets for each company. Importantly, Ofwat made no adjustments to the numerical targets proposed by YWS. In Ofwat's view, these already satisfied the required UQ performance standard.

¹³⁸ Annex 06, YWS: Internal Sewer Flooding Case Study.

¹³⁹ YWS, SoC, paragraph 36.

¹⁴⁰ Ofwat provided an overview of the adjustments it made in the technical appendix on outcomes. See Exhibit 043, Ofwat: 'Draft price control determination notice: technical appendix A2 – outcomes' (August 2014).

4.36 Ofwat’s argument at [YSP/2.39] implies that YWS outperformed its PR14 targets due to the “per incident” basis upon which the ODI was measured.

4.36.1 Ofwat’s use of non-comparable data at PR14 meant that it had to make three sets of adjustments as summarised in paragraph 4.37.1, below. The target set was the result of the combined effect of all of these adjustments. Note also that Ofwat did not make any adjustments to recognise the impact of different regional circumstances. As evidenced in detail in the Internal Sewer Flooding case study, these have a uniquely important impact on YWS due to the large numbers of cellars in specific types of aged-housing stock.¹⁴¹

4.36.2 As further explained in the Internal Sewer Flooding case study, once it became apparent that YWS showed a performance gap against the likely PR19 comparative targets, the ‘early start’ programme was implemented in 2018, in anticipation of the change in regulatory reporting approach.¹⁴² As outlined in SoC, paragraphs 92 *et seq.*, YWS invested additional expenditure above that required to meet the PR14 targets to start moving towards the higher targets expected in the PR19 approach.

4.37 In its Business Plan, YWS proposed Performance Commitment levels which were slightly less stretching than our estimate of forward-looking industry UQ. [YSP/2.40]

4.37.1 In line with Ofwat’s Methodology, YWS proposed performance targets for the comparative commitments using a forecast of industry UQ performance to 2025. At the time of the Business Plan submission, only two years of data existed for the new definition of internal sewer flooding, and the industry as a whole had not achieved full compliance with the new reporting methodology. Therefore, YWS was expected to forecast an industry performance level eight years in advance based on two years of unreliable data. Despite the obvious challenges inherent in Ofwat’s Methodology, YWS’s original Business Plan target for internal sewer flooding was only 6.3% higher than the FD target set by Ofwat.¹⁴³ As the regulator had the benefit of information from all companies’ business plans, as well as an extra year of improved reporting data to set the FD target, the 6.3% variance does not seem particularly significant,

¹⁴¹ Annex 6, YWS: Internal Sewer Flooding Case Study, page 1.

¹⁴² Ibid, pages 3-5.

¹⁴³ Note that the internal sewer flooding target in the Business Plan was accompanied by additional enhancement expenditure and a cost adjustment claim for cellars. See paragraph 3.26.3.

especially in the context of an overall step change in performance of 73% between the regulatory targets of 2019-20 and 2024-25.

4.37.2 YWS notes that one of the companies receiving 'fast-track' (United Utilities) proposed significantly poorer service levels than the rest of the industry in its business plan. Yet this does not feature in Ofwat's IAP assessment for that company. Ofwat's above statement is another example of the differential treatment the regulator has administered throughout the price review

4.38 YWS received funding for internal sewer flooding on the same basis as other companies during PR14 and at least three years' notice that Ofwat was moving to a comparative measure of incidents. [...] Ofwat also does not believe it appropriate that customers should pay now for their company to improve to match its peers when it has received the same level of funding as them in the past. [YSP/2.41]

4.38.1 Ofwat has mis-characterised the position. YWS has not "*received the same level of funding as [its peers] in the past*" for internal sewer flooding and rejects Ofwat's implication that it is seeking special treatment. While it is true that YWS received a cost allowance on the same basis as other companies at PR14, Ofwat has knowingly mischaracterised the position. Firstly, Ofwat's methodology at PR14 suffers from the same flaws as PR19 in that it has failed to link the allowed costs with the expected level of service. Put simply, there is no economic link between the PR14 cost allowances and the performance levels. Secondly, even disregarding the untrue assertion that companies were funded to a specific service level at PR14, Ofwat fails to acknowledge that YWS had a company-specific target for internal sewer flooding. By claiming YWS was funded to deliver the same level of service as other companies at PR19, Ofwat is applying a retrospective view to the regulatory settlement at PR14.

4.38.2 YWS also rejects the implication that it has not acted on Ofwat's forewarning that it was moving to a comparative measure of incidents: on the contrary, as described in SoC paragraph 92 et seq., YWS began improvements to internal sewer flooding in the last three years of AMP6. Please see paragraph 4.39 below for a fuller description.

4.39 In fact, YWS has underspent during PR14. YWS was allowed a sewerage Totex allowance that was built up from a number of modelling approaches, including a unit cost allowance of £82.5 million to deliver improvements in sewer flooding performance. The

company's actual costs for the 2015-20 period show that only £39.8 million has been spent [Reply-005/4.35, 4.49].

4.39.1 As in all price control periods, YWS allocates expenditure based on a cost benefit approach to achieve the required outcome. Where the full output is achieved below the forecast level of expenditure due to efficiency (and following the regulatory mechanism) this becomes out-performance. Following discussion with the CCG (the Yorkshire Forum for Water customers) and the YWS Board demonstrating the benefits of reinvesting this outperformance, the resulting outperformance was reinvested to improve performance in other areas of the programme. The issue at hand is not that YWS has not spent the full allowance, because the AMP6 internal sewer flooding target has been out-performed, rather the problem is the required step change between AMP6 and AMP7. As discussed in further details in the Internal Sewer Flooding Case Study,¹⁴⁴ the key deliverability constraint is in relation to the speed of improvement required.

4.40 Ofwat considered there was no reason for customers in Yorkshire to suffer three times as many sewer flooding incidents as customers in the rest of England and Wales. [YSP/2.41] In its FD Ofwat did not consider that having a greater proportion of properties with cellars is sufficient reason to allow worse performance for YWS given other companies also have specific factors which could impact their performance, such as higher property density which can mean that a single event can affect multiple properties. [YSP/2.44]

4.40.1 11% of the nearly 2.3 million properties connected to YWS's waste water network have cellars. This proportion is close to four times the national average. 71% of YWS's occurrences of internal sewer flooding relate to cellared properties. This is why customers in Yorkshire suffer significantly more flooding incidences than customers of other water companies.

4.40.2 Moreover, 3% of the properties in Yorkshire that are connected to YWS's network are back-to-back properties, and these account for 17% of internal sewer flooding incidents. 95% of the flooding incidents that occur in back-to-back housing involve a cellar. YWS has provided data to show that the existence of a cellar is a higher risk factor for internal sewer flooding than property density more generally. Ofwat has failed properly to take into account the regional specificities of Yorkshire relating to cellared properties and in particular back-to-back cellared properties in its internal sewer flooding assessment. While other

¹⁴⁴ Annex 06, YWS: Internal Sewer Flooding Case Study.

companies of course have their own specific factors, which could impact their internal sewer flooding performance, Ofwat has made this statement without offering an evidential basis to support the implication that those other factors are as relevant and/or are on the same scale that YWS faces in relation to internal sewer flooding performance.

4.40.3 YWS has provided detailed information on the reasons for the disproportionate number of cellared and back-to-back housing in Yorkshire (as opposed to modern basements built with drainage and waterproofing required under modern building regulations) in the SoC, in paragraph 4.41 below. This shows that not only were more of these cellared properties built in Yorkshire, but there has also been less concerted effort to eradicate such dwellings in Yorkshire compared to other parts of the country.¹⁴⁵

4.40.4 YWS supplemented this qualitative analysis with quantitative data in its Business Plan. Contrary to Ofwat's suggestion that the quantitative data is not representative,¹⁴⁶ further sets of data (including the census data and the DG5 data)¹⁴⁷ both show a consistent picture (see paragraph 4.44, below).

4.40.5 On a crude analysis of these figures, if YWS had an average proportion of cellared properties that were affected by flooding incidents at the same rate, this would more than halve the number of internal sewer flooding incidents in Yorkshire.¹⁴⁸ This significantly impacts YWS's ability to have an effect on internal sewer flooding.

4.41 Ofwat also considered that the evidence in relation to cellars was unconvincing because the company did not justify how the survey results presented to support the high number of cellars could be

¹⁴⁵ See Exhibit 066-175 (SoC), Appendix 8k.iii to the YWS Business Plan.

¹⁴⁶ See, for example, Exhibit 003, Reply-005, paragraph 4.40.

¹⁴⁷ See paragraph 4.41.

¹⁴⁸ Among the 2.3m total properties that YWS serves, 260,000 cellared properties account for 71% of the internal sewer flooding incidents, while 2,040,000 non-cellared properties account for 29% of internal sewer flooding incidents. If the proportion of cellared properties were the same as the national average, this means that there would be 52,000 cellared properties and 2,248,000 non-cellared properties. Applying the same likelihood of internal sewer flooding incidents as observed among YWS's network, there would be 142 internal sewer flooding incidents in cellared properties and 320 internal sewer flooding incidents in un-cellared properties. This gives a total of around 462 internal sewer flooding incidents.

considered to be representative of its supply region as a whole. [YSP/2.44; Reply-005/4.27]

4.41.1 YWS has not suggested that the high number of cellared properties that are prevalent in some of its urban areas are representative of its supply region as a whole. That does not, however, detract from the fact that YWS has a far higher proportion of cellared properties than any other area in the UK and that over 70% of the observed instances of flooding in those cellars.

Further arguments from the Reply:

(a) YWS's survey evidence was unrepresentative as it was based on a small sample size of 110 interviews, and it is out-of-date as it was from 1998. [Reply-005/4.40]

4.41.2 The survey evidence does not account for the totality of the evidence YWS has adduced, and YWS considers it neither unrepresentative, nor out-of-date.

4.41.3 Ofwat's allegation that the data is "*out-of-date*" is irrelevant since the 1998 data still reflects today's position. YWS's explanation for why it still remains current is provided in Appendix 8.k.ii to the Business Plan.

4.41.4 Furthermore, contrary to Ofwat's suggestion that this data is unrepresentative, it is entirely consistent with more recent data:

4.41.5 **DG5 data:** according to the DG5 data at least 11% of the properties in YWS's service region have legacy cellars, which are responsible for approximately 70% of the internal sewer flooding incidents. The DG5 data was originally taken from a 1990 survey of all but 2% of the Yorkshire region. As previously explained to Ofwat in support of YWS's cost adjustment claim for the cellared properties,¹⁴⁹ the data was added to from the company's SAP (Enterprise Resource Planning System) regarding projects with their associated expenditure at an investment category level by year going back to the project's creation, therefore providing a representative overview of the network that YWS serves.

4.41.6 **Census data:** as explained in further details in the Internal Sewer Flooding Case Study,¹⁵⁰ the 2001 Census data is nationally representative and delineable by service area of each company. Consistent with the MORI survey data and the DG5 data, it also shows that the area served by YWS has the highest percentage of cellared properties in England and

¹⁴⁹ YWS Business Plan, Commentary for the data tables, pages 228 et seq.

¹⁵⁰ Annex 06, YWS: Internal Sewer Flooding Case Study.

Wales (6.2%), almost twice as high as the second (Thames Water, 3.5%) and almost three times that of the average of the rest of England and Wales combined (2.4%). The 2001 Census data covers a total 22.5 million households in England and Wales and over 2 million households in Yorkshire, and is the latest census including a question of whether a property included a basement.

(b) YWS's survey evidence was inconsistent as YWS gave different values of estimates for the amount of flooding occurring in cellared properties. [Reply-005/4.40]

4.41.7 The values of estimates for the amount of flooding occurring in cellared properties cover different periods based on the latest data available to YWS. For example, the figure of "over 70%" quoted in the SoC is based on an average of the shadow reporting figures from 2018/19 and 2019/20.

4.41.8 It would be surprising for different periods to exhibit the same percentage of cellared properties being related to internal sewer flooding incidents, which is reflected in the different values provided by YWS. Furthermore, the value figures are similar, and importantly all of them show high internal sewer flooding risk.

(c) Generally YWS has not attempted to validate the findings. [Reply-005/4.41]

4.41.9 This is incorrect: the data provided by YWS has been internally challenged and validated through YWS's assurance process to ensure that the analysis is accurate.¹⁵¹ This is in direct contrast to the PR19 process in which Ofwat has not provided any evidenced basis for its position pertinent to YWS's particular situation.

(d) YWS provided limited quantitative, engineering-based evidence of the link between cellars and the increased risk of internal sewer flooding instead relying on empirical statements and descriptions. [Reply-005/4.42]

4.41.10 This is a 'red herring': quantitative, engineering-based evidence is not required to demonstrate the link of increased internal sewer flooding in cellared properties. YWS's data referred to above of the materially higher number of cellared properties affected by internal sewer flooding provides the evidence of this link. As described in detail in Appendix 8.k.ii

¹⁵¹ See Exhibit 001 (SoC), YWS's Business Plan, Chapter 3; see also Exhibit 044.1, YWS: 'Business Plan, Appendix 4a: Board oversight of Plan development' and Exhibit 044.2, YWS: 'Business Plan, Appendix 4b: PR19 Principal Assurance Activities'.

to the Business Plan, cellars are particularly vulnerable to internal sewer flooding due to their position below or only marginally above sewer soffit level (the top of the inside of the pipe). Sewerage discharges in wet weather are either more likely to enter the cellars through connected sewer pipes or through exfiltration from the pipe seeping into the cellar through walls or floors than in the case of properties without cellars, which sit above the sewers.¹⁵² This is common sense, and should be common ground; it does not require particular engineering evidence.

(e) Limited information was provided on the root cause of flooding in cellars (for example whether incidents were caused by blockages or hydraulic overload). [Reply-005/4.42]

4.41.11 This is incorrect. YWS provided information in its Business Plan,¹⁵³ which showed that over 90% of flooding in cellars was attributable to service-related issues ('other causes'). Hydraulic overload thus accounted for less than 10% of internal sewer flooding incidents (it was 5% during that time-period, and the latest shadow-reporting shows hydraulic overload accounts for 2% of incidents). It is not clear what further information Ofwat would expect to receive and why it did not ask for further information if required.

(f) YWS provided no quantitative information on what proportion of cellars in its region are actually connected to the sewer and therefore potentially may represent an increased sewer flooding risk. [Reply-005/4.43]

4.41.12 As the ingress of water into a cellar is a private connection, YWS does not have access to wholesale data. It does have data collected from historic cellar flooding incidents, which indicates that approximately 20% of cellars are directly connected to the sewer network via a gulley (i.e. a drain in the cellar connected via pipework to the property's private sewer, then to the public network).

4.41.13 As explained in YWS's Business Plan¹⁵⁴ and in the Internal Sewer Flooding Case Study,¹⁵⁵ the fundamental reason why a cellar is more susceptible to flooding is due to its low position relative to the sewer pipes. Surcharge water in wet weather can enter cellars either through connected pipes, or

¹⁵² See Exhibit 066-174 (SoC), YWS : 'Appendix 8.k.ii to the YWS final business plan', page 11 et seq.

¹⁵³ Exhibit 066-172 (SoC), YWS: Business Plan Appendix 8k.

¹⁵⁴ Exhibit 066-174 (SoC), YWS: Business Plan Appendix 8.k.ii.

¹⁵⁵ Annex 06, YWS: Internal Sewer Flooding Case Study.

through exfiltration from the pipe seeping through porous walls or floors. The implication that cellars not directly connected to the network have a lesser risk of sewer flooding is therefore incorrect, as is evidenced by the high incidence rate (approximately 80%) of internal sewer flooding incidents occurring in cellars that are not connected to the network.

4.41.14 On a procedural note, Ofwat never indicated during PR19 that its decision was based on the (flawed) reasoning that cellars not connected to the sewer are at less risk of internal sewer flooding. It is incumbent on Ofwat to properly explain its decision-making upon making the decision (rather than during redetermination) so companies can provide evidence.

(g) The evidence presented by YWS in relation to cellars did not consider other factors that might increase the costs associated with sewer flooding that other companies may experience (for example, companies that experience higher rainfall than YWS). [Reply-005/4.45]

4.41.15 When the Business Plan was submitted, only 5% of YWS's internal sewer flooding resulted from hydraulic overload¹⁵⁶ (which is generally associated with heavy rainfall), which suggests that higher rainfall is not a significant issue. On the other hand, as described above, YWS has demonstrated that the disproportionate number of cellars in combination with back-to-back housing is the predominant factor in the risk of internal sewer flooding in Yorkshire over other factors. YWS would suggest that it is incumbent on Ofwat to properly understand the different factors that affect different companies, in particular in relation to the use of common performance measures.

4.42 Even if the impact of cellars is excluded, YWS still seems to have the worst performance in the sector. [Reply-005, 4.34] YWS has not demonstrated that without the impact of cellars its performance would be in line with the rest of the sector. [Reply-005/4.43]

4.42.1 This statement is incorrect. See paragraph 4.40.5 above and Annex 6.

4.43 Evidence from other companies also showed that large improvements in performance can be made in relatively short periods of time (for example South West Water improved its

¹⁵⁶ Latest shadow reporting data shows that this has dropped to 2% in the latest period.

internal sewer flooding performance by over 51% during the period 2014-15 to 2018-19) [YSP/2.44].

- 4.43.1 This statement ignores the key regional specificity that YWS faces in dealing with internal sewer flooding, namely the large number of cellared properties, including those in back-to-back terraces.
- 4.43.2 The prevalence of cellared properties in YWS's operational area contributes to the challenge of deploying proactive intervention at scale and speed. As most incidents happen at cellared properties and within clusters of high building density, such as back-to-backs, physical access to sewers is difficult, gained often through working on or in a customer property to access manholes or cellar connections for CCTV, jetting or to install mitigation devices. Customers can be suspicious of YWS's attempts to gain access to their properties. Whilst formal approaches to apply powers of entry can be used, YWS considers that this is counter-productive to the long-term shift of customer behaviour required to prevent network abuse and foster engagement between YWS's customers and its operations.
- 4.43.3 YWS is aware that internal sewer flooding is a priority of its customers and has taken action to reflect this. For example, YWS has delivered an improvement of 16% between 2018/19 and 2019/20.
- 4.43.4 Other companies do not face this challenge on the same scale as YWS; even London, which has the second largest number of cellared properties, has half of those that are situated in YWS's area. Furthermore, those cellars may not be as challenging to access as in Yorkshire (for example they may not be in densely populated building developments). As a result, a company with few cellared properties in its area and where such cellars and properties are easily accessible might find it very much easier to address internal sewer flooding and improve its performance.

4.44 The FD introduced a glidepath and caps and collars on internal sewer flooding for YWS. [CCIP/3.59]

- 4.44.1 This reflects the fact that the position in the DD was untenable, but the revised position is insufficient given YWS's specific circumstances.
- 4.44.2 As explained above, the scale of interventions required to deliver the performance required by the FD within AMP7 remains impossible practically speaking. Ofwat's change in methodology by introducing the collars on internal sewer flooding for YWS (rather than either providing sufficient funding or revising the targets) means that, due to the scale and cost of intervention, YWS would be forced to choose to incur significant penalty, rather than fully delivering on its commitment to

achieve the long-term resilience improvements for its customers. YWS estimates that under the FD its P50 most likely position over AMP7 for internal sewer flooding is to receive a £35m penalty.

Why Ofwat thinks its targets for mains repairs are appropriate

4.45 If a company's level of mains repairs increases, it suggests a deteriorating asset health. [YSP/2.46]

4.45.1 This is superficial analysis: as discussed at SoC, paragraph 166 et seq., YWS's strategy of proactively detecting leakage will necessarily result in more mains repairs, regardless of asset health. On the other hand, if YWS adopted a reactive-only approach, more leaks would remain undetected and the number of repairs would fall – but again, that would not necessarily signal good asset health.

4.46 Ofwat considers that it has recognised the link between leakage and mains repairs and made adjustments to Performance Commitment levels accordingly. [Reply-005/4.74]

4.46.1 As discussed at SoC, paragraph 169, while Ofwat did belatedly recognise the interaction between leakage and mains repairs, it adjusted YWS's mains repair target by only a small factor to account for leakage improvements. The FD still requires an untenable 34% performance shift for mains repairs over AMP7.

4.47 While YWS submitted evidence to show a positive relationship between active leakage control activity and the volume of proactive mains repairs, its own data also demonstrated a symmetrical relationship between proactive mains repairs and reactive mains repairs (i.e. that an increase in proactive mains repairs generates a decrease in reactive mains repairs). YWS, therefore, did not demonstrate that its leakage reduction activities will necessarily lead to an increase in the total number of mains repairs. [YSP/2.48, 2.49]

4.47.1 YWS disagrees with Ofwat's analysis of the evidence YWS has submitted on the relationship between leakage and mains repairs during the PR19 process,¹⁵⁷ including as part of its DD representations.¹⁵⁸ This was

¹⁵⁷ See, for example, Exhibit 067-091 (SoC), YWS: 'IAP response YKY.OC.A1-A52: delivering outcomes for customers', page 28 et seq.

¹⁵⁸ See Exhibit 070 (SoC), YWS: 'YKY follow up representation meeting, 16 October 2019', particularly page 9.

supported by evidence from the UKWIR report 'The impact in reduction of leakage levels on reported and detected leak repair frequencies'.¹⁵⁹

- 4.47.2 Indeed, YWS's data on this topic has been consistently misinterpreted by Ofwat. At the IAP stage, Ofwat requested that YWS demonstrate the relationship between reactive and proactive mains repairs. In response, YWS demonstrated the inverse relationship between the proportion of proactive / reactive mains repairs when the total number of repairs are considered together¹⁶⁰, but Ofwat failed to recognise that the total number of mains repairs jobs will increase if more proactive repairs are carried out as a result of leakage reduction activity.
- 4.47.3 YWS's data shows that for the years in which considerable leakage improvements were realised (for example 2011/12, 2018/19 and 2019/20), there was an associated high level of proactive mains repairs, resulting in a higher total number of mains repairs in those years.¹⁶¹
- 4.47.4 This was further supported by the findings of the UKWIR report, which stated that *"there is no clear evidence of an offsetting of increased detected leaks by fewer reported leaks as leakage is reduced. As a result, the total number of leak repairs would be expected to increase. The implication is that there are very few leaks that grow from being detectable to being reported at leakage levels currently observed in the UK"*.¹⁶²
- 4.47.5 In response to this evidence, Ofwat acknowledged in the FD the need for the mains repairs target to account for increased proactive activity.¹⁶³ As such, the number of permissible mains repairs was uplifted by 8% in year 1 (compared to Ofwat's DD position), reducing by 1.5% in each following year. The historic data suggests that this uplift is inadequate as proactive activity would need to more than double from the baseline level in order

¹⁵⁹ See Exhibit 045, UKWIR, 'The impact of reductions in leakage levels on reported and detected leak repair frequencies'.

¹⁶⁰ See Exhibit 067-091 (SoC), YWS: 'IAP response YKY.OC.A1-A52: delivering outcomes for customers', page 28 et seq.

¹⁶¹ See, for example, the graph in *ibid*, page 31, which shows a large number of proactive mains repairs.

¹⁶² Exhibit 045, UKWIR: 'The impact of reductions in leakage levels on reported and detected leak repair frequencies' (2019), page 6.

¹⁶³ See Exhibit 046, Ofwat: 'PR19 final determinations: Yorkshire Water - Delivering outcomes for customers additional information appendix', page 6 et seq.

to meet the Performance Commitment. This equates to 30% more mains repairs compared to the 8% given in the FD.¹⁶⁴

*Why Ofwat thinks its targets for **water supply interruptions** are appropriate*

4.48 For water supply interruptions, YWS have forecasted that their 2019-20 performance will be better than their 2024-25 Performance Commitment level. [CCIP/3.35] YWS is therefore well placed to achieve or outperform UQ performance levels on the comparable Performance Commitments. [CCIP/3.36]

4.48.1 This is misleading. The FD Performance Commitment level for 2024/25 for water supply interruptions is 5 minutes. While YWS's forecast for 2019/20 for water supply interruptions was 4 minutes, it actually achieved a result of 6.1 minutes – its best ever performance – and lower – not better – than the 2024/25 Performance Commitment level of 5 minutes. This was achieved by deliberately diverting funding from other projects in order to prepare for the stretching targets anticipated in PR19. The evidence clearly shows that it is not the case therefore that YWS is "*well placed to achieve or outperform UQ performance levels*".

4.48.2 By way of further background, YWS actively worked to improve its water supply interruptions in years 4 and 5 of AMP6 (to deliberately outperform its PR14 targets) in order to prepare for the step-change Ofwat had signalled for AMP7. It did so by increasing funding to water supply interruptions by £11.4m.

4.48.3 In its Business Plan, YWS ambitiously forecast that its performance level would be 4 minutes in 2019/20 (compared to its PR14 target for that year of 12 minutes), reducing to a target of just 2.5 minutes by 2024/25. These ambitious targets were justified in the Business Plan by a claim for additional enhancement expenditure of around £45m.

4.48.4 The decision by Ofwat not to award enhancement expenditure for water supply interruptions has compromised YWS's ability to achieve a more stretching performance target over AMP7. The FD 2024/25 target of 5 minutes represents a significant improvement on YWS's current 'best ever' position. The further step up required by the FD is not attainable without adequate additional funding.

¹⁶⁴ Annex 05, YWS: Leakage and Mains Repairs Case Study.

*Why Ofwat thinks its targets for **pollution incidents** are appropriate*

4.49 For pollution incidents, YWS did not adjust the Performance Commitment level in its IAP Representations to reach the UQ levels, instead claiming that sufficient Totex funding to reach UQ level should be allowed. [YSP/2.26]

4.49.1 YWS stands by its position in its IAP Representations that UQ funding should be allowed for pollution incidents on the basis that additional performance requires additional funding, and that a Performance Commitment set at the UQ level should be contingent on that. See Section 5, below.

*Why Ofwat thinks its targets for **external sewer flooding** are appropriate*

4.50 For external sewer flooding, YWS did not adjust the Performance Commitment levels in its IAP Representations as UQ performance was not cost beneficial for external sewer flooding. [YSP/2.26]

4.50.1 YWS stands by its position in its IAP representations.¹⁶⁵

*Why Ofwat thinks its targets for **sewer collapses** are appropriate*

4.51 YWS's proposed Performance Commitment level is worse than its historical average performance over 2015-20. [YSP/2.61]

YWS has the worst comparative performance on this measure and Ofwat considers that delaying asset renewal to keep bills low is an inappropriate approach to asset management which passes the risk of asset failure on to future generations. [YSP/2.63]

For sewer collapses, YWS acknowledged that it had engaged in low levels of historical asset renewal in order to keep bills low and that this practice was no longer sustainable. [YSP/2.6; Reply-005/4.16, 4.22]

This resulted in a required performance improvement of 19% over the 2020-25 period which Ofwat considered achievable for YWS, given significant improvements can be made through the adoption of best practice operational methods to better pro-actively identify and repair collapses before they are reported and that large scale capital investments are not necessarily required. [YSP/2.64]

¹⁶⁵ See Exhibit 067-091 (SoC), YWS: 'IAP response – YKY.OC.A1-52 Delivering Outcomes for Customers', section 1.6.

YWS's PR14 document for assessing performance for its 'stability and reliability' factors is less stringent in its assessment than Ofwat's. [Reply-005, 4.19; 4.16] This methodology means that deterioration in performance has to be severe for penalties to apply, reducing the incentive to improve. [Reply-005/4.23]

4.51.1 This is another example of Ofwat's changes to its reporting methodology being the significant driver of Performance Commitment expectations as opposed to actual company activity, as discussed above at paragraph 4.2. In relation to sewer collapses, Ofwat created significant confusion in its late changes to the reporting methodology. Contrary to Ofwat's claims, YWS's proposed 5% reduction in the Business Plan and IAP response is stretching in the circumstances and takes into account (i) YWS's current asset cycle; and (ii) the actual works YWS needs to undertake to improve assets in Yorkshire over the next 25 years.

Reporting methodology

4.51.2 A late change in Ofwat's methodology for counting sewer collapses meant that Ofwat has not been making like-for-like comparisons.

4.51.3 Historically, sewer collapses formed part of the 'serviceability' basket of measures. YWS has historically performed within the bounds of the upper and bottom reference levels of this measure. Indeed, Ofwat recognises that YWS's performance in sewer collapses has "*historically been comparable with the sector average using the serviceability definition*" and has been "*largely 'stable'*".¹⁶⁶

4.51.4 YWS historically interpreted the reporting methodology as requiring sewer collapses where deformation of the sewer was greater than 50% to be reported, whether or not a service impact had occurred. This methodology was agreed with YWS's external auditor following Ofwat's assurance requirements.

4.51.5 As explained in YWS's response to the IAP, the final reporting guidance for sewer collapses for PR19 was not received until March 2019. In it, Ofwat adopted a comparative approach by setting the target using an upper quartile percentage improvement proposed by the companies, rather than setting a company-specific target based on historic performance. The new reporting methodology meant that the following are reportable: (i) all collapses (partial and complete, i.e. not just those where deformation is greater than 50%) (ii) where a service or

¹⁶⁶ Exhibit 003, Reply-005, paragraphs 4.21 and 4.15 respectively.

environmental impact has occurred, both of which are changes to YWS's historical interpretation.

- 4.51.6 The change in methodology meant that YWS's historic data was meaningless for setting performance levels without significant further work. As YWS highlighted in its IAP response, the new methodology gave YWS "*insufficient time to review historical incidents to understand how the new definition would affect future performance forecasts.*"¹⁶⁷ It meant that YWS's historic data was not comparable to new data.
- 4.51.7 The 2018/19 shadow reporting data¹⁶⁸ shows that while under the new methodology YWS remains the company with the highest number of reported sewer collapse incidents, it has caught up significantly to the rest of the industry, having reacted quickly to the change in reporting methodology. YWS expects this trend to continue, having adjusted its investment plans to address the challenges presented by the new methodology (see paragraph 4.51.12, below).

PR19 Performance Commitment level

- 4.51.8 YWS provided Ofwat with evidence throughout the PR19 process that its proposed Performance Commitment level was stretching.
- 4.51.9 Using the new methodology, in the Business Plan YWS proposed a sewer collapse target of a 5% reduction over AMP7 from YWS's estimate of the AMP6 year 5 outturn position.¹⁶⁹ At the IAP response stage, YWS revised the proposed sewer collapse targets to better align with the newly confirmed AMP7 methodology and deliver an improvement in performance over 2020-25. The level of reduction (5%) was retained.¹⁷⁰ YWS considered this to be a stretching target and a significant improvement on its historic performance, given that the "*sewer collapse*

¹⁶⁷ Exhibit 067-091 (SoC), YWS: 'IAP response – YKY.OC.A1-52 Delivering Outcomes for Customers', page 72.

¹⁶⁸ Ibid.

¹⁶⁹ In its redetermination documents, Ofwat has continually focussed on the values provided in the Business Plan. This data was compiled at a point when YWS had had very little time to understand the methodology (which at that point was not even confirmed as final). As YWS highlighted during the PR19 process, the values were revised by a significant degree in the IAP response.

¹⁷⁰ Though this was applied to a lower starting point (i.e. the AMP7 outturn level was lower).

asset health measure is slow to influence and requires significant additional expenditure in sewer rehabilitation to improve."¹⁷¹

4.51.10 In its Business Plan, YWS proposed achieving improvement over two AMPs, allowing for a balanced approach that would address asset health and reduce the total number of collapses by (i) addressing the natural rate of rise of collapses through sewer rehabilitation; and (ii) carrying out proactive collapse identification.

4.51.11 In order for YWS to achieve any reduction in sewer collapses over AMP7 interventions are required to negate the natural rate of rise in collapse rate. As the age of a pipe increases, it becomes more prone to collapse.¹⁷² Due to YWS's current position in its asset cycle, over the 25-year period from 2020 to 2045, YWS has estimated that the sewer collapse rate will increase by 15% due to asset deterioration.¹⁷³ In other words, simply to stay at the same level of sewer collapses over that time-period, YWS needs to address the increasing collapse rate. Therefore, any improvement in the rate can happen only on top of mitigation of the natural rate of rise.

4.51.12 As explained in the IAP response, YWS's target of 5% fewer incidents already took into account proactive, innovative and efficient ways to improve asset health. These will identify sewer collapses after they occur but before service is impacted, to be more responsive to Ofwat's new reporting methodology. These included the following methods:

- (a) Using a smart networks approach to identify failures pre-emptively, through analysing performance.
- (b) Deploying innovative construction techniques, for example, adapting spray-lining techniques for use on high-risk rising mains.

¹⁷¹ Exhibit 067-091 (SoC), YWS: 'IAP response – YKY.OC.A1-52 Delivering Outcomes for Customers', page 41.

¹⁷² By way of example, YWS data indicates a pipe with an average age of 50 years has a collapse rate of circa 0.025 per km, while a pipe with an average age of 150 years has a collapse rate of circa 0.06 per km – i.e., 2.4 times greater. See also Exhibit 067-091 (SoC), YWS: 'IAP response – YKY.OC.A1-52 Delivering Outcomes for Customers', page 40.

¹⁷³ This estimate was calculated using YWS's Decision Making Framework (DMF) Asset Deterioration model. Exhibit 067-091 (SoC), YWS: 'IAP response – YKY.OC.A1-52 Delivering Outcomes for Customers', page 41.

- (c) For first time repairs, upskilling field staff and providing them with innovative equipment to enable rapid, 'on the spot' repairs or to identify the need to escalate to others.
- (d) Targeting expenditure planning to achieve the optimal level of service through the Decision-Making Framework (**DMF**) (see SoC, paragraph 85 et seq.).

4.51.13 Although these operational methods could reduce the overall number of reportable collapses (i.e. by addressing them before they impact upon service levels), such measures are not able to fully address the actual underlying health of the network, which requires large-scale rehabilitation programmes.¹⁷⁴ YWS considers Ofwat's flawed approach to measuring asset health to be inappropriate, as it passes the risk of asset failure on to future generations by failing to provide for sufficient asset rehabilitation in the immediate future.

4.51.14 In the FD, Ofwat increased the level of improvement to 19% over AMP7 based on the upper quartile percentage improvement proposed by companies.

4.51.15 YWS considers its proposed improvement of achieving 5% fewer sewer collapse incidents by 2024-25 is stretching. Moreover, YWS considers that the required improvement levels in the FD sewer collapse Performance Commitment cannot be achieved without large-scale capital investments.

Asset health

4.51.16 As explained in SoC, paragraph 28 et seq., YWS has consistently followed regulatory direction. YWS has good levels of asset health and YWS's general policy of asset renewal has led to its asset health being judged as 'stable' for 55 out of the 60 serviceability measures since 2007.¹⁷⁵ Furthermore, Ofwat has severely underfunded YWS in many areas in its FD, meaning that YWS has been forced to abandon programmes of capex-based solutions to improve asset health in favour of shorter-term Opex-based solutions.

¹⁷⁴ See Exhibit 067-091 (SoC), YWS: 'IAP response – YKY.OC.A1-52 Delivering Outcomes for Customers', page 43 for further details of the scale of such programmes and the costs involved.

¹⁷⁵ See YWS, SoC, paragraph 26.

4.51.17 Furthermore, Ofwat's new methodology forces YWS to change its approach to investment. Under the previous methodology, YWS would target sewer collapses.

YWS's PR14 performance assessment

4.51.18 YWS's PR14 document for assessing performance¹⁷⁶ is in line with its PR14 FD.¹⁷⁷ As such, YWS's PR14 sewer collapses penalty calculation incentivises YWS to improve this Performance Commitment.

Why Ofwat thinks its targets for length of river improved are appropriate

4.52 Ofwat describes in detail the development of the length of river improved / WINEP ODI at [YSP/2.55-2.60].

4.52.1 YWS previously argued for the re-instatement of this ODI as it reflected customers' priorities. This point is not in dispute and YWS is surprised that Ofwat has raised it.

*Why Ofwat thinks its targets for **water quality contacts** are appropriate*

4.53 YWS is a company with poor knowledge of its network, its configuration, and the root cause of customer service impacts. [Reply-005/4.85]

4.53.1 This is incorrect. On the contrary, the success of reducing customer contacts between 2013-14 and 2018-19 to which Ofwat refers at Reply-005 paragraph 4.83 is a result of a full and detailed understanding of the causal factors and the network operational considerations that result in water quality contacts. Indeed, it is this detailed understanding of root cause and an intimate knowledge of the operational performance of the network that has allowed YWS to deploy its innovative and successful flushing programme.¹⁷⁸

¹⁷⁶ Exhibit 047, YWS: 'The right outcome for Yorkshire (2015-2020) Stability and Reliability Factors' (September 2016).

¹⁷⁷ See Exhibit 005 (SoC), Ofwat: 'Final price control determination notice: company-specific appendix – Yorkshire Water', page 136.

¹⁷⁸ See Exhibit 001 (SoC), YWS's Business Plan, page 135.

5. Overall regulatory challenge on costs and outcomes

Overview

YWS clearly demonstrated in the SoC that Ofwat has created a disconnect between costs and outcomes. In short, Ofwat is wrong to believe that it is possible to make the improvements to service levels purely through allowed base costs and improving productivity:

- Ofwat failed to develop a methodology that is capable of reaching a robust forward-looking view of what it would cost YWS to deliver the service levels set out in its FD.
- Ofwat wrongly attached too much weight to its backward-looking analyses of cost and service performance. These do not show that Ofwat's cost allowances are sufficient for YWS to improve its service levels.

This Section shows that Ofwat's attempts to rebut this conclusion do not stand up to scrutiny:

- Ofwat is wrong to argue that the fact companies were able to meet or exceed certain specific targets in PR14 implies that they will be able to meet or exceed them in PR19.
- Ofwat is also wrong to argue that cost efficient companies have been able to improve their performance, as its cost models do not account for outcomes when estimating the efficient level of future costs. Moreover, the benchmark companies Ofwat used to set YWS's costs allowance have not systematically or routinely achieved the level of performance expected by Ofwat across all relevant Performance Commitments.

The costs-outcomes disconnect leads to underfunding of YWS's Business Plan (in particular YWS is not funded to deliver the required performance level in relation to the comparable Performance Commitments), exposes YWS to material penalty risk, and will load costs and risks onto YWS's future customers. It therefore contributes to intergenerational unfairness.

Introduction

- 5.1.1 YWS reiterates the issues with Ofwat's costs-outcomes disconnect which it detailed in the SoC at paragraphs 135 *et seq.*. The material issues with Ofwat's requirements on costs and outcomes derive from its position that it is possible to make the improvements to service levels set out in FD purely through allowed base costs and improving productivity. Therefore, it maintains that YWS must improve its service levels (to the significant degree demanded by Ofwat's step-change at PR19) without allowing any additional expenditure to do so.
- 5.1.2 The principal flaw in Ofwat's approach is that it failed to develop a methodology that is capable of reaching a robust forward-looking view of what it would cost YWS to deliver the service levels set out in its FD. In particular, Ofwat:
- (a) set its UQ Performance Commitments before it could have known what the UQ performance forecast and its cost allowances would be;
 - (b) used costs models which omitted service levels as cost drivers, such that the models cannot be used to forecast what it would cost YWS to achieve UQ performance in AMP7 (and failed to develop alternative methods for doing so); and
 - (c) overstated or double-counted companies' ability to fund service improvements using the cost savings they could make through productivity gains. Ofwat's methodology already returns such gains to customers in the form of lower prices through its application of a (overstated) frontier shift challenge.
- 5.1.3 Instead, Ofwat wrongly attached too much weight to its backward-looking analyses of cost and service performance, and has drawn the wrong conclusions from them. These backward-looking analyses do not show that Ofwat's cost allowances are sufficient for YWS to improve its service levels. This is because they:
- (a) fail to recognise the trade-off between costs and outcomes faced by efficient firms; and
 - (b) fail to account for the significant increase in service levels that Ofwat expects YWS to deliver in AMP7 compared to its own performance and the performance of the benchmark companies Ofwat used to set YWS's cost allowances.

- 5.1.4 The above collectively contribute to a disconnect between costs and outcomes which leads to underfunding of YWS's Business Plan (in particular YWS is not funded to deliver the required performance level in relation to the comparable Performance Commitments), exposes YWS to material penalty risk, and will load costs and risks onto YWS's future customers.
- 5.1.5 In contrast, Ofwat maintains that it is possible for YWS to deliver UQ performance levels in relation to the comparable Performance Commitments in its FD and that there is no costs-outcomes disconnect. Ofwat's main points in support of its position are:
- (a) firstly, that YWS and others have met or exceeded their respective Performance Commitments during PR14 without exceeding their corresponding cost allowances. Ofwat's contention is, in broad terms, that since companies were able to meet or exceed their targets in PR14, they will be able to meet or exceed them in PR19 too; and
 - (b) secondly, that cost-efficient companies have been able to improve their performance. Ofwat's argument is that there is no trade-off between reducing costs and improving performance in practice.
- 5.1.6 The rest of this Section is split into two parts:
- (a) The first part responds to Ofwat's main points as set out above. It then addresses several other points that Ofwat considers relevant to this issue. The conclusion is that none of Ofwat's arguments withstands scrutiny.
 - (b) In view of this conclusion, the second part considers the options for remedying the costs-outcomes disconnect. The appropriate remedy is to increase YWS's cost allowances so that they are sufficient to cover the additional efficient costs that the company will incur as it tries to deliver the UQ Performance Commitments in its FD.
- 5.1.7 Before turning to these matters, however, YWS notes that an apparently more constructive approach to addressing costs and outcomes jointly has been demonstrated by the Water Industry Commission for Scotland (**WICS**). WICS acknowledges that adopting an approach which prioritises minimising charges in the current regulatory period, so denying

companies the necessary allowances for improving their services, necessarily increases the prices that will be paid by future customers.¹⁷⁹

- 5.1.8 YWS supports taking a balanced approach which spreads costs fairly between its current and future customers. Its proposals at PR19 were designed in close consultation with its customers, looking to develop plans which offset the costs of improving its performance and maintaining its assets with consistently high levels of service for current and future customers.

Ofwat's first main argument – YWS and others have met or exceeded their Performance Commitments during PR14 without exceeding their cost allowances

- 5.2 In PR14 costs allowances and targets in relation to the comparable Performance Commitments were both based on UQ levels. YWS and Anglian Water met such targets in 2018-19 without overspending their respective cost allowances. In general companies that performed well on PR14 UQ outcomes also performed well on costs. [CCIP/2.5, 3.45, 3.48]**

The forward looking UQ challenge on the comparable Performance Commitments in PR19 is of a similar magnitude to the historical UQ challenge on those Performance Commitments achieved in PR14. [CCIP/3.58. 3.64]

Some companies who requested additional funding are already performing well, such that the additional challenge set by Ofwat is limited. [CCIP/3.54]

There is evidence that Ofwat's base funding allowance is sufficient for companies to achieve the performance improvements required to meet Ofwat's Performance Commitment targets. [CCIP/3.55]

Poorer performing companies have historically made substantial improvements in relation to the comparable Performance Commitments. [CCIP/3.64]

YWS's historical cost data demonstrates that it has been efficient as shown by Ofwat's PR19 cost models. It is when comparing Ofwat's efficient level of base costs against YWS's business plan that efficiency falls. High future costs for the same activities when compared with historical costs inevitably means it is less efficient. [R005/1.21]

¹⁷⁹ Exhibit 021, WICS, 'Strategic Review of Charges'.

5.2.1 As YWS sets out in detail at paragraph 6.4, an examination of historical performance in totality, over a sufficient period of time, and using the appropriate measure (ROCE) can be informative of whether the overall risk balance has been appropriately calibrated at PR19. This perspective is particularly important where, as it the case here, the regulator is imposing a ‘step change’ in the incentives / level of overall challenge, relative to the past.

5.2.2 But Ofwat is wrong to argue that the fact the companies were able to meet or exceed certain specific targets in PR14 implies that they will be able to meet or exceed them in PR19. As set out in SoC, paragraph 142 and Annex 4, this backward-looking assessment of performance at AMP6 does not take account of the fact that the allowed costs and Performance Commitments in PR14 were different to those in PR19.

5.2.3 To illustrate this, Figure 13 below compares the Performance Commitments required by the end of AMP7 to the Performance Commitments required at end of AMP6. It shows that Ofwat expects YWS to achieve a higher level of performance against each of the comparable Performance Commitments by the end of AMP7 than the end of AMP6.

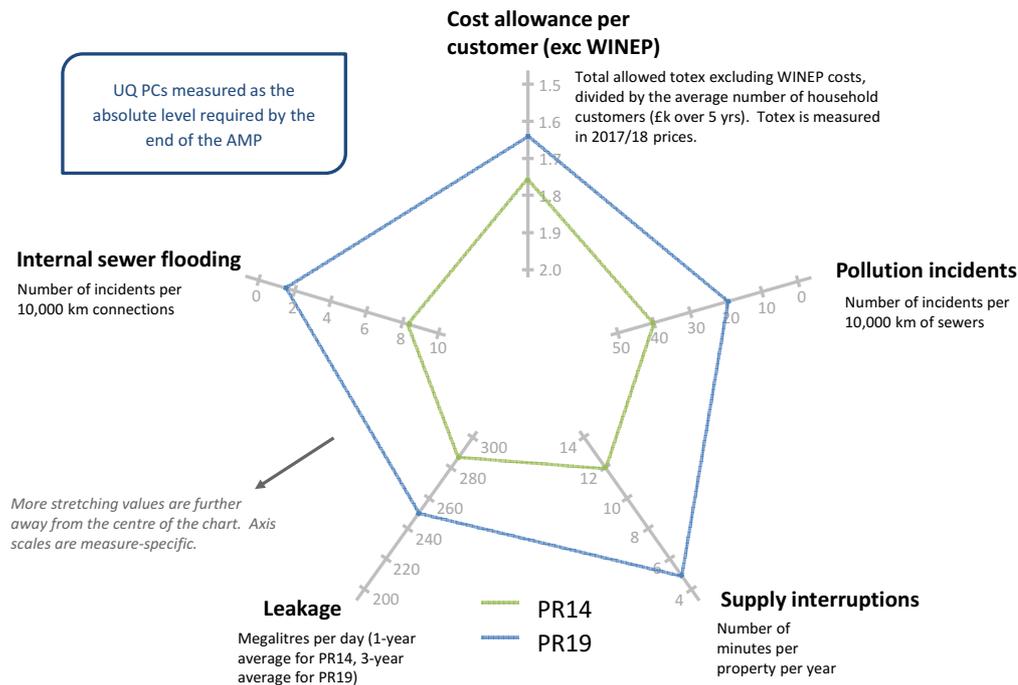


Figure 13: comparison of Performance Commitments required by the end of AMP7 to the Performance Commitments required at end of AMP6.

5.2.4 Ofwat is also wrong to suggest that “the overall level of stretch on costs and outcomes in PR19 is similar to PR14”.¹⁸⁰

- (a) As Ofwat acknowledges in its Reply that the stretch level set out in the FD is “*large when viewed against Yorkshire Water’s current performance*”.¹⁸¹ Figure 13 above clearly shows that the challenge is harder. Ofwat expects YWS to achieve a higher level of performance within a lower cost allowance per customer.
- (b) On publishing its FD, Ofwat itself stated that “*The move towards a forward-looking UQ for three of the most comparable common outcomes (out of 15) is an increase in the level of stretch compared to commitments set at PR14*”.¹⁸²
- (c) Therefore, Ofwat’s own analysis shows that it is plainly incorrect to argue that YWS’s Business Plan contains “*high future costs for the same activities*”. Rather, YWS’s Business Plan contains higher future costs in order to deliver significantly improved levels of service compared to PR14, as Ofwat itself recognises.

5.2.5 Further, as explained in YWS’s presentation to the CMA of 15 April 2020, the size of the ‘stretch’ (as measured by the percentage difference in Performance Commitments between the start of an AMP and the end of the AMP) is significantly higher for PR19 than it was for PR14. Specifically:

- (a) the Totex allowance per customer (excluding WINEP) has been reduced by 7%;
- (b) the challenge on outcomes has increased – for the comparable Performance Commitments shown in Figure 13 above, the challenge has increased from an average 8% in PR14 to 20% in PR19; and
- (c) for key asset health Performance Commitments (mains repairs, sewer collapses, and unplanned outages), the challenge has increased from ‘stable’ (i.e. 0%) to an average of 37%.

5.2.6 The need to look at the ‘totality’ of the stretch is also relevant to why, when examining historical performance, it is also essential to use a metric that properly captures overall out / under performance against prior determinations. As we explain in paragraph 6.5 in the water industry the

¹⁸⁰ Exhibit 001, Reply-001, paragraph 2.26.

¹⁸¹ Exhibit 003, Reply-005, paragraph 1.25.

¹⁸² Exhibit 048, Ofwat: ‘PR19 final determinations: Overall stretch on costs, outcomes and cost of capital policy appendix’, page 8.

appropriate measure of this is ROCE. Consequently, Ofwat is further wrong to attempt to draw strong inferences relating either to the 'correctness' of individual targets or the overall balance of risk under its PR19 FDs, from prior performance relating to subcomponents of the price control, such as Totex or ODIs.

5.2.7 Finally, YWS fundamentally questions the inferences Ofwat seeks to draw from its presentation of historical performance. That is, even if the analysis showed that the 'stretch' at PR19 is the same as it was at PR14 (it is not), it would not follow, as Ofwat implies, that YWS is funded to deliver the UQ Performance Commitments in the FD. Whether YWS is funded depends on whether:

- (a) Ofwat's cost models control for outcomes performance levels; and, if they do not
- (b) Whether the benchmark companies that Ofwat has used to set the cost allowances have achieved the targets for the comparable Performance Commitments Ofwat has set in the FD.

5.2.8 As set out in SoC, paragraph 140b and Annex 8 (SoC)¹⁸³, Ofwat's models do not control for outcomes levels¹⁸⁴ and the benchmark companies have not achieved the Performance Commitments¹⁸⁵. It follows that YWS is not funded to deliver the UQ Performance Commitments in the FD.

Ofwat's second main argument – cost efficient companies have been able to improve their performance

5.3 It is simplistic and inaccurate to assume that a trade-off must be made between costs and outcomes [CCIP/3.1].

Ofwat's analysis suggest a positive correlation between its estimates of historical cost efficiency and improved outcome performance. [CCIP/3.51]

This shows that it is possible for companies to perform at UQ levels on both costs and outcomes. [CCIP/3.52, 3.53] In particular:

¹⁸³ Annex 08 (SoC), Oxera: 'Integrating cost and outcomes' (March 2020).

¹⁸⁴ During YWS's Initial Presentation, the CMA noted that Ofwat's PR14 costs models did not control for outcomes performance levels either. It is correct that this limitation of the PR19 cost models was also a limitation of the PR14 cost models. The problem is that at PR19 this limitation has materially contributed to YWS's cost allowances at PR19 being insufficient for it to meet its PCs at PR19, whereas this was not the case at PR14.

¹⁸⁵ SoC, paragraph 143 and Annex 04 (SoC), Economic Insight: 'Ofwat's approach to funding upper quartile performance' (March 2020).

For wholesale water, Portsmouth Water and South Staffs Water are UQ for supply interruptions but have already met their 2024/5 Performance Commitment level. [Reply-001/7.39]

For leakage, South West Water and Hafren Dyfrdwy perform well on both leakage and cost efficiency. [Reply-001/7.40]

Water companies should be able to reduce leakage by 15% within their respective base allowances because there is no evidence that high levels of cost necessarily lead to better outcomes, and indeed cost efficiency and high performance levels often go together. [CCIP/3.56]

Stretch in ongoing outcomes performance reflected catch-up rather than frontier shift – because on pollution incidents and ISF, some companies have already reached the 2024-5 Performance Commitment target. Therefore there is no double counting. [Reply-005/5.59]

EI's analysis is misleading as it averages absolute performance over time and compares this with PR19 Performance Commitment level where performance improved on UQ based metrics at start of PR14. Ofwat considers it more important to consider more recent years. [Reply-001/7.43]

- 5.3.1 As explained in SoC, paragraphs 141 and 197(a) and Annex 8 (SoC), Ofwat's cost models do not account for outcomes when estimating the efficient level of future costs. This has the following effects:
- (a) The results of Ofwat's cost modelling are biased and Ofwat does not know what the efficiency benchmark would have been had measures of service quality been included.
 - (b) Therefore, no valid inferences can be drawn from Ofwat's models.
 - (c) Therefore, there is no basis on which to conclude that Ofwat's correlation of cost efficiency and improved outcome performance is correct.
- 5.3.2 Moreover, as explained in SoC, paragraph 149-150, firms at the efficiency frontier (such as YWS) cannot simultaneously improve costs and outcomes performance. This implies that (i) the funded level of outcomes performance is the level of performance achieved by the benchmark companies Ofwat used to set YWS's cost allowances and (ii) analyses of whether individual firms have delivered improvements in both costs and individual outcome measures are wholly irrelevant. Failure to recognise

the essential trade-off between costs and outcomes faced by efficient firms – as Ofwat has done – results in an unachievable overall efficiency challenge.

- 5.3.3 Ofwat’s observation that there are some companies that perform well on cost efficiency and one of the Performance Commitments¹⁸⁶ neither undermines these points nor demonstrates that YWS has sufficient funding. What matters is whether benchmark companies Ofwat used to set YWS’s cost allowances have routinely achieved the level of performance expected by Ofwat across all of the relevant Performance Commitments – the evidence clearly shows that they did not.¹⁸⁷
- 5.3.4 Similarly, Ofwat’s observation that *“some companies have already reached the 2024-5 Performance Commitment target”* is irrelevant. As set out above, what matters is whether the cost benchmark companies have persistently met the Performance Commitment targets. The data shows that they have not: none of the cost benchmark companies have met their Performance Commitment targets for pollution incidents and only one (of three) of the cost benchmark companies have met their Performance Commitment targets for internal sewer flooding.¹⁸⁸ Therefore, Ofwat’s cost allowances would (at best) allow YWS to deliver the service levels achieved by the cost benchmark companies, but not Ofwat’s Performance Commitment target. It follows that the stretch cannot be characterised as a catch-up efficiency challenge.
- 5.3.5 Finally, Ofwat is wrong to argue that it is misleading to compare (historic) average absolute performance over time to the PR19 Performance Commitment level¹⁸⁹ [Reply-001/7.43] for two reasons:
- (a) first, Ofwat’s assessment of companies’ cost efficiency is based on an average of their efficiency scores over several years, not just the more recent years – therefore, the comparison is ‘like-with-like’; and
 - (b) second, the average absolute performance is what, in fact, companies delivered with their cost allowances – they were not funded to deliver the level of performance they achieved in the more recent years in every year.

¹⁸⁶ Reply-001, paragraph 7.40.

¹⁸⁷ Annex 04 (SoC).

¹⁸⁸ Ibid.

¹⁸⁹ Reply-001, paragraph 7.43.

Other arguments advanced by Ofwat in support of its position that there is no disconnect between costs and outcomes in the FD

5.4 YWS has typically not spent its cost allowance in previous price reviews. Although Ofwat acknowledges that this could be due to efficiency, it thinks a “likely explanation” is rather due to underinvestment. [Reply-005/1.22]

5.4.1 YWS strongly rejects any unsubstantiated assertion that underspending its cost allowances is due to underinvestment rather than efficiency, or that the implied counterfactual whereby YWS spent all of its cost allowance would have been better for its customers. An objective of the regulatory framework is to encourage companies to improve their cost efficiency where possible and customers benefit from such underspends through the cost-sharing mechanism. The under-investment accusation is made for the first time in the context of these proceedings, was not discussed at all during the PR19 process or in any other fora with YWS management. Ofwat’s letter of 12 May 2020 criticises the parties for adducing new arguments in this redetermination process but it has done so itself. Ofwat has not advanced any evidence to support these assertions. Nevertheless, to address the point, included at Annex 4¹⁹⁰ and Section 6 is conclusive evidence demonstrating that Ofwat’s position is incorrect.

5.5 Productivity gains allow companies to simultaneously improve outcomes and reduce costs. [CCIP/3.56].

The frontier shift was reduced from 1.5% to 1.1% per annum. [CCIP/3.61]

5.5.1 As explained in SoC, paragraph 150, Annex 4 (SoC) and Annex 9 (SoC), Ofwat cannot rely on the possibility of frontier shift to justify its position, because it has allocated all such potential productivity improvement to the cost challenge, and cannot therefore use it simultaneously to set harder outcome targets.

5.5.2 Reducing the frontier shift assumption does not imply that there is now ‘headroom’ for companies to reduce costs and improve outcomes because as explained in Annex 9 (SoC):

(a) there was no sound basis for the frontier shift assumption of 1.5%, which was too high to start with; and

¹⁹⁰ Annex 04, Economic Insight: ‘Framework for Asset Health’ (May 2020).

(b) although Ofwat reduced the frontier shift assumption, it also increased the value of costs it applies to, thereby reducing the benefit of the lower frontier shift assumption.

5.6 Most quality improvements are covered by Ofwat's allowed enhancement funding. [CCIP/3.65]

5.6.1 YWS does not understand this statement. Insofar as it relates to YWS the FD omits £300.5m in funding required to achieve UQ performance levels in relation to the comparable Performance Commitments, as set out in SoC, paragraph 122.

5.7 Of the six water companies whose forecast cost were within Ofwat's base cost allowance, five accepted the Performance Commitment challenge in response to their respective draft determinations, none of whom are seeking a redetermination. [CCIP/3.47]

5.7.1 As explained in SoC, paragraph 145, this argument is an obvious non sequitur for the following reasons: (a) water companies may have chosen to accept the FD and yet still not expect to achieve the targets, on the basis that they have accepted the FD 'in the round' and also accounted for the direct and indirect costs of seeking a redetermination by the CMA; (b) there may be regional, operational and financial differences between companies which mean the targets can be achieved without funding for some but not others; and (c) companies may decide to divert resources from elsewhere to meet the targets.

5.8 In response to the DD, YWS removed the requested £300m in enhancement costs to improve performance in relation to the comparable Performance Commitments. [YSP/2.31] YWS provided the most extensive response of all disputing companies in this area, despite it saying in response to the DD that "*[i]n the spirit of compromise with Ofwat, we are willing to tolerate the absence of the costs that we believe are necessary from our final determination. Accordingly, we have removed £300m of enhancement expenditure for upper quartile service from our tables*". If it could meet these Performance Commitments without this additional funding in response to the draft determinations, it seems odd that it cannot do so now. [Reply-005/5.36]

5.8.1 As explained at SoC, paragraph 122, although it disagreed with Ofwat's policy position, YWS offered to tolerate Ofwat's disallowing £300.5m in enhancement expenditure in the DD representations in an effort to reach a compromise and avoid redetermination proceedings, but this offer was conditional on Ofwat accepting the totality of YWS's position in those

representations, and subject to further review when the FD was received. Ofwat did not meet this condition and therefore the costs-outcomes disconnect remains uncorrected, with the result that YWS is not funded to deliver the Performance Commitments in its FD.

5.9 YWS focusses on only four out of an average of 40 Performance Commitments per company. [Reply-005/5.59]

- 5.9.1 YWS has focused on the four Performance Commitments because: they clearly demonstrate the issue; they are clearly material; and YWS sought funding to meet them in its Business Plan, which Ofwat did not allow.

6. Balance of Risk and Return

Overview

A key deficiency in Ofwat's FD is that (when considered as a whole) it creates a material disconnect between risk and return, wrongly resulting in YWS facing a material downside skew in its risk position.

This gives rise to material harm to customers, the environment and investors, and threatens the long-term resilience of the company. It is therefore one of the key reasons the YWS Board took the decision to reject Ofwat's FD and seek a redetermination by the CMA.

This Section addresses Ofwat's assertions that the FD provided an appropriate balance between risk and return. Contrary to Ofwat's claims, YWS shows that:

- Ofwat's published risk ranges do not show that it has calibrated risk and return correctly, because they were not the product of risk analysis.
- Historical performance is important to informing the overall balance of risk and challenge set by Ofwat. This is especially so given Ofwat's 'step change' policy at PR19.
- Ofwat's measures of historical performance are flawed because they: (i) focus on individual elements of the price control, instead of overall performance; and (ii) use RORE instead of ROCE when assessing returns.
- Using the correct measure, the industry has not substantially, systematically and persistently outperformed.
- YWS's Plan was informed by robust risk analysis, which meant it reflected an even balance of risk. It is Ofwat's spurious interventions in YWS's Plan, not information asymmetry, that create a material downside risk skew under its FD.
- Risk for companies and their investors has increased at PR19 relative to prior price controls.

In short, Ofwat has no basis on which to claim that the FD is "stretching but achievable", or that risk is balanced, and YWS rejects this.

Introduction

- 6.1.1 As YWS explained in SoC, paragraph 282, a key deficiency in Ofwat's FD is that (when considered as a whole) it creates a material disconnect between risk and return. In turn, this gives rise to material harm to a range of stakeholders, including customers, the environment and investors, as demonstrated in Sections 3-5 and 11. In totality, the YWS Board therefore considered the FD represented a significantly downside skewed balance of risk, which could threaten the long-term resilience of the company. As such, this is one of the key reasons the YWS Board took the decision to reject Ofwat's FD and seek a redetermination by the CMA.
- 6.1.2 There are two key issues relating to the risk / return balance at PR19:
- (a) Ofwat's PR19 Methodology and FD materially increase equity risk, but Ofwat has set the lowest equity return ever applied in the industry, thus allowed returns are too low to adequately compensate investors for risk; and
 - (b) Ofwat has failed to properly calibrate incentives (in particular, cost allowances and ODIs) meaning that the expected return for an efficient firm will be below its allowed return. YWS has submitted a range of evidence that not only directly demonstrates Ofwat's methodological failures of relevance to this, but further shows that, consequently, on a notional basis YWS faces both: (i) a low likelihood of being able to earn its allowed return; and (ii) risk significantly skewed to the downside under Ofwat's FD¹⁹¹.
- 6.1.3 Issue (a) above is addressed in Section 7 of this document, as part of a broader discussion of the evidence relating to the WACC. This section considers issue (b); and in particular sets out: Ofwat's claims regarding the risk balance under its FDs; and YWS's replies to these claims (which focus on the evidential matters relevant to assessing the risk balance 'in practice' under Ofwat's determinations). Section 9 explains why the evidential issues addressed here matter; namely, because they are fundamental to informing whether an efficient firm is 'investable'.
- 6.1.4 In Ofwat's response to company SoCs, it has challenged YWS's position that risk and reward have become fundamentally disconnected, arguing that it has, in fact, set an appropriate balance of the two under its FDs. However, Ofwat's submissions appear to amount to little more than

¹⁹¹ See Annex 01 (SoC), Economic Insight: 'Financeability of the notionally efficient firm: a bottom-up analysis'.

assertions, which are themselves often counterintuitive and illogical. In summary:

- (a) Ofwat's suggestion is that its published RoRE risk ranges and charts provide evidence that it has properly calibrated risk and return under the FDs because the risk ranges are broadly symmetrical (i.e. symmetrical upside and downside risk). This is incorrect because, as YWS has explained,¹⁹² Ofwat's RoRE risk ranges are not themselves an output of a risk analysis and therefore are of no value (i.e. in relation to ODIs, for example, Ofwat's method by definition meant that, regardless of what targets the regulator ultimately set, its RoRE ranges would always *'appear'* broadly symmetrical).
- (b) In addition to interrogating the validity of each individual component of the price control, the question of whether the overall risk / reward balance has been appropriately set can be further informed by a careful analysis of historical performance. YWS has provided detailed evidence (using the appropriate method of comparing outturn ROCE with the regulatory determined WACC) that the industry has not, in fact, routinely outperformed prior regulatory settlements, raising serious questions as to why incentives needed to be fundamentally reset at PR19, as per Ofwat's 'step change' policy.

In its response, Ofwat has argued that: (i) its step change policy was not predicated on prior outperformance; (ii) historical performance should be measured on RoRE rather than ROCE; and (iii) performance against individual elements of the price control are relevant to informing its targets.

In reply YWS explains that: (a) the very basis of incentive regulation is to reveal performance over time – hence, if a regulator is to impose a 'step change' as a point of policy, prior to developing any evidence as to the individual building blocks, one would expect that to have been supported by a careful examination of historical performance. Therefore, if Ofwat's

¹⁹² For example, see IAP response documents: Exhibit 067-091 (SoC), YWS: 'IAP response – YKY.OC.A1-52 Delivering Outcomes for Customers', passim, but especially section 5; Exhibit 067-093 (SoC), Economic Insight: 'Maximising Customer Benefits from the Outcomes Framework' (Annex 1 to YWS's IAP response document); see also DD response documents: Exhibit 068-003 (SoC), YWS: '03YKY DD Representation Financeability', pages 24-25; Exhibit 068-005 (SoC), YWS: '05YKY DD Representation OC', pages 5-7; see also SoC, paragraph 152 et seq..

position is now that its step change was not predicated on this, YWS regards this as a deficiency in the regulator's approach, rather than outperformance being irrelevant; (b) ROCE is plainly the appropriate measure of economic profit in the water industry (the industry is regulated on this basis, and the Water Industry Act directs Ofwat to assess financeability with reference to return on capital); and (c) performance against individual components of the price control in isolation is irrelevant to an assessment of the overall risk reward balance.

- (c) YWS's analysis and evidence (and that of other companies) has consistently shown a significant negative risk skew *under Ofwat's FDs*.¹⁹³ Ofwat claims that this simply reflects what it considers to be an information asymmetry and that YWS has an incentive to overstate downside risk. If companies were benefitting from an information asymmetry, and were using it to advantage themselves, one would observe overall financial outperformance against the regulatory determined WACC over time. However, as noted above, it has been conclusively shown that this has not been the case in the water industry.¹⁹⁴ Further, it is clear that it is Ofwat which lacks any evidence to substantiate a symmetrical balance of risk under its FDs, rather than YWS, whose original Plan *was* balanced precisely because it was informed by risk analysis (i.e. the downside skew under the FDs arises because Ofwat took YWS's carefully balanced plan and then made numerous unwarranted interventions, without itself undertaking any risk analysis).
- (d) Ofwat argues that its FD creates strong incentives for companies to achieve the targets it set and that this further means there is not a downside risk skew. This is a particularly untenable argument, as the strength of incentive has little bearing on whether the target is achievable.

¹⁹³ For example, see Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the Final Determinations', *passim*, but especially page 4; Annex 05 (SoC), Economic Insight: 'Ofwat's approach to ODI interventions in the Final Determinations', section 8.3. See also Exhibit 067-093 (SoC), Economic Insight: 'Maximising Customer Benefits from the Outcomes Framework' (Annex 1 to YWS's IAP response document), section 4.

¹⁹⁴ Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the Final Determinations', section 7.5; Annex 06 (SoC), Economic Insight: 'Top-down analysis of the financeability of the notionally efficient firm', section 2.

- (e) Ofwat has highlighted various regulatory mechanisms that mitigate risk and uncertainty for companies and has sought to infer that this implies it has got the balance of risk 'right' at PR19. The fact that mechanisms exist to allocate risk between customers and companies is, however, wholly irrelevant to whether Ofwat struck an appropriate balance of risk and return in totality.
- (f) Ofwat has further intimated that risk for companies and their investors has *reduced* at PR19 relative to prior price controls. A cursory comparison of PR19 to preceding determinations shows this suggestion lacks credibility. Indeed, even Ofwat's own published RoRE risk ranges show it believes more equity is at risk at PR19 than at PR14. As explained below, Ofwat's view at PR14 was that there was 6.6% (percentage points) of equity return 'at risk', compared to a much higher figure of 11.1% (percentage points) at risk for PR19.
- (g) Ofwat argues that there is nothing particularly new about asymmetric performance incentives and notes that at PR14, as at PR19, there were more ODIs where the outperformance incentive rate exceeds the underperformance incentive rate. From this Ofwat seeks to imply that, because companies outperformed in PR14, so they can be expected to outperform in PR19 as well. As the financial impact of ODIs depends on each individual parameter (and most obviously, the targets Ofwat sets) across the entire suite of ODIs, YWS fails to understand the relevance of a 'count' on incentive rates. The key question for the CMA remains: *'has Ofwat set a package such that an efficient firm is expected to earn its base allowed return?'*

6.1.5 Ultimately, Ofwat concludes that: *"our final determinations represent an overall risk-reward package which is stretching but achievable for the notionally efficient company... we affirm our view that the efficient notional company will achieve our targets on average, and earn its allowed return on capital in doing so."*¹⁹⁵ However, as is clear from YWS's responses to Ofwat's specific points in this Section 6, this claim is made wholly without evidence and YWS rejects it in its entirety. On the contrary, it is Ofwat that has failed to provide any evidence of: the expected performance of an efficient firm; risk analysis capturing the uncertainty inherent in the possible performance of an efficient firm; or evidence that its package risk is appropriately balanced.

¹⁹⁵ Exhibit 003 (SoC), CCIP, paragraph 4.17, pages 28-29.

Evidence from Ofwat's RoRE risk ranges under its FDs

6.2 The FD entails a RORE risk range of 3.5-7.3% on the upside and 3.7-8.3% on the downside. [CCIP/4.14] The overall risk range that Ofwat has derived is broadly neutral. [CCIP/4.16]

- 6.2.1 It is well understood that, in principle, incentive targets should be set such that, for an efficient firm, the 'expected return' should be equal to the base allowed return; and that risk should be symmetrical. The crucial evidential question before the CMA is: *'has Ofwat done this in practice?'*
- 6.2.2 Ofwat suggests that its published RoRE risk ranges and charts provide evidence that it has properly calibrated risk and return under its FD (i.e. that the above is the case). This is incorrect because, as set out in a report by Economic Insight¹⁹⁶ accompanying YWS's SoC, Ofwat's RoRE risk ranges are not themselves the outcome of any robust risk analysis. YWS therefore wishes to remind the CMA that the regulator's published risk ranges should not therefore be interpreted as being a meaningful measure of risk. See below at paragraph 12.1.7 for YWS's proposed suggestion to the CMA on approach to be taken to calculate the overall risk.
- 6.2.3 Further to the above, and by way of example, consider Ofwat's approach to ODI RoRE risk ranges. As set out in Economic Insight's report, for each individual ODI, Ofwat simply: (i) assumes that its target levels are 'by definition' the most likely level of performance for an efficient firm; and then (ii) crudely transposes company estimated risk ranges around these.
- 6.2.4 YWS notes that in Ofwat's CMA 'teach in' on financial modelling and risk,¹⁹⁷ Ofwat confirmed YWS's understanding of point (ii) above is correct, as highlighted in the figure below (taken from Ofwat's presentation).

¹⁹⁶ Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the Final Determinations' (March 2020).

¹⁹⁷ Exhibit 049, Ofwat presentation to the CMA: 'Return on regulatory equity (RoRE)' (11 May 2020).

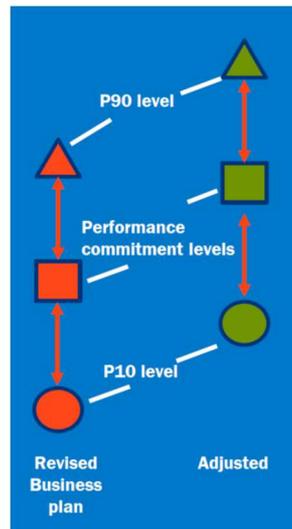


Figure 14: Ofwat's approach to individual ODI risk range; *taken from Ofwat's RoRE presentation to the CMA*

6.2.5 The transposition of company risk ranges in absolute terms is itself clearly problematic. However, the more substantive matter before the CMA (which Ofwat did not discuss or mention during the teach in) relates to the regulator's changes to Performance Commitment target levels and the presumption in every case that these represent the most likely (P50)¹⁹⁸ performance level for an efficient firm. With reference to the above figure, it is the movement in the rectangular box, the target level, that should particularly concern the CMA. The reality is Ofwat's Performance Commitment levels reflect crude and arbitrary judgements, totally unrelated to performance risk. As YWS has previously submitted, Ofwat's method really is as basic as saying: *'the expected performance level is whatever I say the target is'*. YWS would therefore encourage the CMA to look closely at the actual methods and evidence used by Ofwat to set targets, as set out in Annex 2 (SoC)¹⁹⁹. This will reveal that there is no basis whatsoever to conclude that the Performance Commitments Ofwat has set reflect the expected performance of an efficient firm.

6.2.6 Notwithstanding the above, YWS notes that Ofwat's published RoRE ranges do, in fact, imply a downside skew for the industry in totality. YWS further notes that (at an individual company level) Ofwat's published risk ranges are counter-intuitive and contradict Ofwat's own position. For example, Ofwat actually considers YWS to face a *positive* upside skew in

¹⁹⁸ P50 refers to the point in a probability distribution whereby 50% of the outcomes lie 'above' the point in question and 50% lie below that point. The P50 is, therefore, the 'most likely' (or median) level of performance.

¹⁹⁹ Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the final determination' (March 2020).

relation to ODIs, despite Ofwat assessing YWS not to be at the efficiency frontier at PR19. These two positions are contradictory and further show a lack of robust risk analysis on Ofwat’s part.

6.2.7 Just to help further illustrate the specific point above, the following table shows ODI RoRE ranges, based on YWS’s risk modelling and as reported by Ofwat. As explained elsewhere, when YWS developed its Business Plan, its ODI package was informed by Monte Carlo risk modelling, to help ensure it results in an appropriate overall risk balance, consistent with Ofwat’s method and published guideline RoRE ranges. As shown in the first column, YWS’s Business Plan therefore included a near symmetrical ODI risk balance, ranging from -1.92% RoRE to +2.11% RoRE. Following Ofwat’s FD, YWS ran the regulators innumerable interventions to the Business Plan’s ODI package through the same risk model. As can be seen in the second column, this gives a significant downside RoRE risk skew, ranging from -2.78% to +0.19%.

6.2.8 As noted above, Ofwat itself, however, believes under its FD YWS faces a *positive* risk skew on ODIs (see the third column, showing an upside of 2.95% RoRE compared to a downside of -2.46%). This position makes no sense to YWS as, under economic theory: (i) no firm should face a positive skew; (ii) a perfectly efficient firm should face symmetrical risk with expected performance in line with the regulator’s targets; and (iii) as Ofwat itself has judged YWS not to be a cost efficiency benchmark at PR19, its own logic implies it should have found a *negative* skew.

ODI related RoRE risk range

High / bw case outcomes	YWS Business Plan	YWS modelling of Ofwat FD	Ofwat’s own assessment at FD
P90 – high case (% RoRE)	1.92%	0.19%	2.95%
P10 – low case (% RoRE)	-2.11%	-2.78%	-2.46%

Table 15: ODI RoRE ranges as modelled by YWS and subsequently reported by Ofwat. Sources: column 1 from YWS Plan, Appendices 13a and 13b; column 2 from updated YW risk modelling, EI’s bottom up financeability report; column 3 from Ofwat’s FD for YWS, table 5.1.

6.2.9 The contradictory nature of Ofwat’s position in relation to YWS’s ODI RoRE risk ranges provides further evidence of the lack of robustness in the regulator’s approach to risk analysis. Indeed, what the above makes

plain is that Ofwat's ODI RoRE numbers omit any assessment of performance risk at all.²⁰⁰

6.3 The approach Ofwat took to understand risk in our final determinations, while pragmatic, was sufficient to support our conclusion that no company faces undue downside risk. [Reply-007/12] It was impractical to model package risk stochastically. [Reply-007/12.7] Stochastic risk analysis is not necessarily superior. [Reply-007/12.8]

- 6.3.1 ODI risk plays an important role in the overall risk balance faced by investors and customers at PR19. Indeed, the 'expected' return of an efficient firm will only be equal to the allowed return if ODI targets have been set appropriately (i.e. the Performance Commitment levels are equal to the expected level). The key implication being that, if this is not the case, the notional firm will not be investable for equity, thus the financing duty is breached.
- 6.3.2 Given this, it is absolutely essential that the approach to understanding ODI *package risk* is based on robust evidence. In YWS's Business Plan, this was indeed the case, where P50, P10 and P90 values were all derived from Monte Carlo modelling, which was itself based on data driven probability distributions. This meant the plan YWS submitted (i.e. prior to Ofwat's extensive interventions under its FDs) reflected a broadly symmetrical ODI risk balance, with a very slight downside skew, reflecting the fact that YWS is not 'perfectly' efficient.
- 6.3.3 As explained in YWS's SoC, Ofwat made no meaningful attempt to estimate ODI package risk. Ofwat now seeks to characterise this as a sensible decision based on pragmatism. In reality, this is far from the case. In actual fact: (i) there is no reason why Ofwat could not have undertaken a proper package risk analysis and it is a material deficiency in its approach; (ii) Ofwat's actual approach to package risk is not based on any alternative sensible analysis; and (iii) Ofwat's package risk numbers are primarily driven by its approach to assessing individual ODI risk – for which, crucially (and as explained above), Ofwat merely assumes the P50 is *'whatever it says the target is'*. YWS would again refer the CMA

²⁰⁰ That is to say, as outlined above, Ofwat's method consists of 'transposing' YWS's ODI performance risk ranges around its PC. Hence, this method step by Ofwat would always (and falsely) imply a near even balance of risk. Ofwat's reported 'positive' RoRE risk skew of YWS must, therefore, be entirely driven by changes the regulator has made to other parameters (incentive rates, caps, collars, deadbands etc.).

to YWS's previously submitted report by Economic Insight²⁰¹ for a fuller description of the regulator's approach to package risk. YWS encourages the CMA to consider this evidence with care.

Historical evidence of outperformance and implications for the balance of risk

6.4 Our proposal for a step change is not based on whether there has been systemic outperformance of previous price controls. [Reply-001/6.2] Companies have claimed there is no basis for a step change unless there is evidence of historical outperformance. [Reply-001/6.1]

6.4.1 In addressing Ofwat's claims, it is important to be clear as to the relevance of historical performance to the ongoing redetermination process. In reaching its views on appropriate allowed revenues for YWS, the CMA will rightly need to examine the evidence on each individual building block in turn and come to a view as to how those should be set. However, it is nonetheless also important to consider the 'totality' of the settlement in context, and understand whether the challenge set is 'harder' or 'less hard' than prior challenges and whether it is, more broadly, likely to be consistent with an even balance of risk for an efficient firm. In reaching a view on that, it seems plain that historical performance is an essential input, without which no sensible judgement can be made.

6.4.2 In fact, this is the very 'spirit' of incentive regulation. Neither a company nor regulator can be certain as to what an efficient firm can achieve. So, incentive regulation sets a challenge, then actual performance is observed, and both parties 'learn' from that revealed performance, so informing the next round of incentive setting at the subsequent price control. In other words, observed performance is the 'truth finding' element at the heart of regulation. This description of incentive regulation is commonly used in the academic literature. For example, Armstrong et al (1994)²⁰² characterise regulation as incentivising firms to 'reveal' performance over time. It therefore stands to reason that, if a regulator is to impose a 'step change' as a point of policy, prior to developing any evidence as to the individual building blocks, one would expect that to have been supported by a careful examination of historical

²⁰¹ Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the Final Determinations'.

²⁰² Armstrong, M., Cowan, S. and Vickers, J.: *Regulatory Reform: Economic Analysis and British Experience* (Cambridge, Mass: MIT Press, 1994).

performance. Therefore, if Ofwat's position is now that its step change was not predicated on this, YWS regards this as a deficiency in the regulator's approach, rather than outperformance being irrelevant.

6.4.3 There is also a marked tension between Ofwat's new claim in its response that historical outperformance is not important to its 'step change' and the fact that the regulator's response is littered with evidence it seeks to position as demonstrating historical outperformance (i.e. if the regulator thinks outperformance is not necessary to justify its position, why has it submitted so much evidence on this?) YWS further notes that Ofwat acknowledges that: *"Nevertheless historical performance is informative in this context [of examining whether the challenge set is achievable]."*²⁰³ YWS would suggest that this second remark by Ofwat is not a minor point but is, in fact, a recognition that historical performance is plainly relevant. YWS would further note that in the context of PR19, it is not considering a 'trivial' change in incentives, but in Ofwat's own words, a 'step change'. It is in this specific context (a very large change in challenge and incentives, as described by Ofwat) that historical performance becomes more relevant still. As is explained elsewhere in this Response, YWS must also emphasise that Ofwat's selective presentation of outperformance data on specific components of the price control in isolation (and without consideration of the key context: that targets at PR19 are more challenging) is disingenuous and misleading. This matter has been addressed further at paragraph 5.2 of this Response.

6.4.4 Finally, YWS should remind the CMA that Ofwat has previously cited historical performance as being relevant to its imposition of a 'step change'²⁰⁴. There is therefore an additional tension between Ofwat's new position in its response (whereby it asserts its step change is unconnected to historical performance) and ones it has previously argued during the PR19 determination process. Furthermore, Ofwat's response to company SoCs appears to be the first time the regulator has argued that historical performance is not relevant to the 'step change' (i.e. this is a 'new' argument).

6.5 Since 2014, Ofwat has used RORE to measure the return to equity. [Reply-001/6.12] Measurement of out- and underperformance on a RoRE basis allows for comparisons across companies on a more consistent basis. [Reply-001/6.14] Return on regulatory equity

²⁰³ Exhibit 001, Reply-001, paragraph 6.2.

²⁰⁴ Exhibit 034 (SoC), Economic Insight: 'Financeability of the notionally efficient firm top-down analysis' (August 2019), page 15.

(RoRE) is the most appropriate measure to assess outperformance under a Totex regime. [Reply-005, 5.29] Ofwat is not aware of Yorkshire Water objecting to the principle of focusing on RoRE in its annual performance reports or our annual monitoring reports. [Reply-005/5.29] Economic Insight’s ROCE measure is influenced by company accounting policies. [Reply-001/6.13]

- 6.5.1 If the question before us is whether companies have outperformed their regulatory settlements in totality, it is essential to use a measure appropriate to this. It is notable that Ofwat’s response does not address this question, and nor does Ofwat suggest that RORE is superior to ROCE *for this specific purpose*. Rather, Ofwat merely states that it has used RORE since 2014 to measure equity returns.
- 6.5.2 The substantive point is that the industry is regulated on a WACC / ROCE basis. Indeed, the financing duty within the Water Industry Act specifically refers to the requirement that companies can earn “reasonable returns on their capital”²⁰⁵. The reason for this is obvious: that regulation seeks to ensure that firms do not earn excess economic profits. As economic profit includes opportunity cost, it is essential that any such measure captures both the opportunity cost of debt and equity. In the water industry, where the necessity of heavy capital investment, combined with long asset lives, means that debt finance plays such a central and intrinsic role, it is fanciful to suggest that overall profitability can be measured without reference to debt financed capital employed.
- 6.5.3 YWS should also draw the CMA’s attention to the fact that, in its FDs, Ofwat did seem to consider ROCE was the relevant measure for this purpose. Indeed, Ofwat undertook its own analysis of ROCE versus WACC, focusing only on selective years in PR14, which it claimed, did show significant outperformance.²⁰⁶ YWS explained in its SoC, supported by a report by Economic Insight, that the method Ofwat had used was misleading and disingenuous, as it sought to compare a WACC set on the building block method with a ROCE based on historical cost accounting (the APR ROCE).²⁰⁷ YWS observes that Ofwat has now dropped this altogether in its response to company SoCs, from which one might reasonably infer that Ofwat is entirely aware that: (i) ROCE *is* the relevant measure; but (ii) its previous comparison of the APR ROCE

²⁰⁵ The Water Industry Act (1991), section 2A.

²⁰⁶ Exhibit 008 (SoC), Ofwat: ‘PR19 final determinations: ‘Securing cost efficiency technical appendix’, page 184.

²⁰⁷ Annex 06 (SoC), Economic Insight: ‘Top-down analysis of the financeability of the notionally efficient firm’ (March 2020).

to the building block WACC in an attempt to show outperformance was inappropriate.

- 6.5.4 YWS has provided detailed evidence, both as part of the PR19 process and updated as part of the CMA's redetermination, which clearly establishes that the water industry has not persistently, systemically and substantively outperformed the regulatory determined WACC (i.e. a ROCE versus WACC basis).²⁰⁸ YWS has also highlighted that Ofwat's own evidence, including that given to a Select Committee²⁰⁹, is consistent with its findings. Even within the PR19 determination process, Ofwat conceded this, stating: *"...we do not observe the same degree of systematic outperformance as Ofgem in our historic price controls..."*²¹⁰
- 6.5.5 Ofwat's reference to YWS not objecting to the use of RORE in its annual performance reports is irrelevant. The question here is: 'what is the appropriate measure of economic profit in the water industry?'
- 6.5.6 As to Ofwat's comments that Economic Insight's ROCE will be influenced by individual company accounting policies, YWS agrees that this will be true. However, it is important to note that this will only impact the ROCE post PR14, as prior to that, Ofwat applied a standardised approach to current cost regulatory accounting across the industry. In addition, the ROCE, based on current costs, remains conceptually the 'right' measure. Hence, deviations in accounting policies, which impact only 4 years of data, should not lead one to adopt an alternative (incorrect) method. Furthermore, the fact that the cessation of standardised current cost accounting is a relatively recent event means it is unlikely to be material to any conclusion regarding the *persistent* or *systemic* nature of outperformance necessary to robustly support claimed information asymmetry.
- 6.5.7 Finally, and further to the above, given that the Water Industry Act specifies that the financing duty be interpreted in relation to return on capital, we note that Ofwat's statement that its decision to cease

²⁰⁸ For example, see Annex 06 (SoC), Economic Insight: 'Top-down analysis of the financeability of the notionally efficient firm', *passim*; Exhibit 068-003 (SoC), YWS: '03 YKY DD representation – financeability', page 7; Exhibit 034 (SoC), Economic Insight: 'Financeability of the notionally efficient firm: top-down analysis', section 3.

²⁰⁹ Annex 06 (SoC), Economic Insight: 'Top-down analysis of the financeability of the notionally efficient firm', page 11; Exhibit 034 (SoC), Economic Insight: 'Financeability of the notionally efficient firm: top-down analysis', section 3.2.2.

²¹⁰ Exhibit 050, Ofwat: 'PR19 final determinations – Allowed return on capital technical appendix', page 23.

standardised current cost accounting means that, from PR14, there are some limitations to comparing ROCE across companies is itself troubling. Remarkably, Ofwat appears to be saying that it is unsure it can measure outturn performance on the very basis on which, by statute, it is compelled to regulate the industry.

6.6 Analysis of companies' outturn historical performance against our assessment of efficient cost allowances, shows that overall, there has been a positive skew towards outperformance against the benchmarks of our past determinations. [CCIP/4.8; Reply-008/2.52]²¹¹ Companies have, on average, outperformed cost allowances at PR99, PR09 and PR14. Half of the occurrences of underperformance in the data Ofwat assessed relate to PR04, three relate to Dŵr Cymru, a company limited by guarantee that retains all financial surpluses for the benefit of customers and three relate to Thames Water. [Reply-008/2.52] Anglian Water and Yorkshire Water have outperformed their cost allowances in each of the previous four price control periods. [Reply-008/2.55; Reply-005/6.49; Reply-006/2.6-2.7]

6.6.1 As explained in the above passages, when considering whether the overall 'risk /return' balance has been appropriately set, it is vital to look at the regulatory settlement in its totality. Rather than examine performance against any individual building block (such as cost efficiency), the correct perspective to apply is whether, overall, companies have or have not persistently, routinely and substantively outperformed the allowed cost of capital. This is for well-established reasons: namely, that firms face trade-offs and so it is inappropriate to draw inferences on the overall 'risk' or 'challenge' based on a narrow examination of performance on only certain dimensions of their offer. This is precisely the lens the CMA uses in the context of merger control assessment and market investigations, where measures of economic profit are sometimes used to inform an assessment of competitive effects²¹². As noted in paragraph 6.5.2, in the water industry, it is unquestionably the case that ROCE is the correct measure of economic

²¹¹ References to 'Reply-008' are to Exhibit 051, Ofwat: Reference of the PR19 final determinations: Risk and return – response to common issues in companies' statements of case'.

²¹² For example, the CMA considered this in its funeral market investigation. See Exhibit 052, CMA: 'Funeral Market Investigation, Approach to profitability and financial analysis' (July 2019).

profit (YWS again notes that the industry is regulated by Ofwat on ROCE for precisely this reason).

6.6.2 Ofwat's attempt to conflate performance against allowed Totex in isolation against this broader, and much more pertinent, issue is clearly not an adequate response to this concern. The simple fact is, when the 'right' measure is used (ROCE versus WACC) there is no evidential basis whatsoever to suggest that the risk / return balance was misaligned in the past, requiring a fundamental 're-set' at PR19 via a 'step change' policy.

6.6.3 Setting the above to one side, YWS further notes that a measure of under / over spend against Totex itself has an important limitation. Namely, where a company underspends, one cannot differentiate between whether this is an indication of a company: (i) outperforming on cost efficiency; or (ii) making 'cuts' to expenditure to live within its allowed revenues. The possibility of the latter should be of great concern to a regulator that has responsibilities to customers over the long term (i.e. because if 'cuts' are made, in time service quality and / or resilience are undermined). A further limitation of Ofwat's reference to Totex underspend at PR14 is that it focuses only on five years of data. In an industry characterised by long-lived assets, where expenditure is inherently 'lumpy', this seems a questionable basis on which to draw such strong inferences.

6.6.4 In relation to (ii) above, YWS explains at paragraph 2.7 why, in practice, this concern does not apply to this, when one looks at the appropriate evidence.

6.7 In PR14 companies made representations about risk levels and negative skews in expected ODI performance but on average outperformed the corresponding final determinations. [CCIP/4.10-4.12; Reply-008/1.10] Since the start of PR14, water companies have received net payments of £112 million for the achievement of financial incentives on Performance Commitments. [CCIP/3.31] The industry as a whole has, on average, neither outperformed nor underperformed on ODIs with a 0.0% RoRE impact. [Reply-008/2.76]

6.7.1 As per the comments at paragraph 6.6.1 in relation to Totex out / under spend, YWS does not think any inferences should be drawn as to the overall 'risk / reward balance' or 'challenge' in determinations 'as a whole', by examining out or under performance against individual elements in isolation (over a limited number of years). Ofwat's analysis in relation to ODI performance at PR14 is, therefore, irrelevant to the core issues before the CMA.

- 6.7.2 Notwithstanding the above, Ofwat seems to be intimating that ex-post outperformance in relation to ODIs at PR14 is evidence of information asymmetry, given that companies expected a downside skew at the time. This seems to be a difficult conclusion to reach without carefully analysing: (i) how that outperformance is split by ODI / company; and (ii) the likely source of that outperformance (i.e. good management practice, beneficial exogenous shocks, or information advantages). As explained at paragraph 6.8 even if Ofwat found evidence of information advantages for companies at PR14, it would then need to consider *why* this was the case before considering the appropriate implications for PR19. Furthermore, in the context of Ofwat now asserting concerns over information asymmetry, it is difficult to rationalise its choice to significantly increase the number and value of ODIs at PR19, and more broadly its choice to considerably increase the complexity of these incentives and the overall price control design.
- 6.7.3 Notwithstanding YWS's concerns with drawing inferences from individual elements of the price control over limited numbers of years, there has *not* been significant industry-wide ODI outperformance so far in AMP6 contrary to Ofwat's suggestion. Specifically, based on data published by Ofwat, in the first four years of AMP6 the industry earned net outperformance payments equivalent to 0.1% RoRE. This represents modest outperformance when considered in the context of Ofwat's PR14 ODI cap of +/- 2% RoRE and Ofwat's expected ODI RoRE ranges at PR14.²¹³ Indeed, outperformance of 0.1% RoRE is entirely within Ofwat's expected RoRE range at PR14. YWS is surprised, therefore, that Ofwat has chosen to quote the £m value of ODI payments as implying evidence of information asymmetry.
- 6.7.4 Furthermore, as is illustrated in Figure 16 below, there has been a broad spread of companies earning net positive and negative ODI payments so far in AMP6. This is not consistent with any systemic outperformance or information asymmetry. Put simply, there have been 'winners' and 'losers', just as one would expect if incentives were working as intended.

²¹³ Ofwat's expected ODI RoRE ranges at PR14 are illustrated in Figure 4.2 of Exhibit 003 (SoC), CCIP.

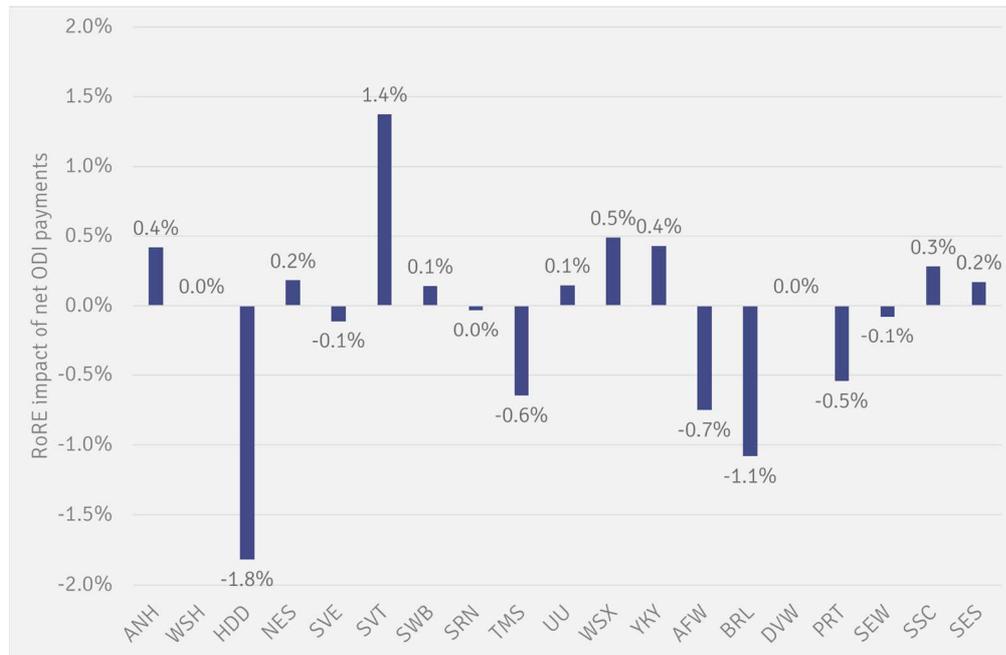


Figure 16: RoRE impact of ODI payments in the first four years of AMP6. Source: based on published data from Ofwat’s Service Delivery Report 2018-19.²¹⁴ Note: the figure splits out pre- and post-merger companies separately

6.7.5 Variance in out / under performance across Performance Commitments so far in AMP6 further illustrate a lack of information asymmetry. Figure 17 below shows the breakdown of the 0.1% RoRE industry outperformance across the four UQ Performance Commitments (leakage; supply interruptions; internal sewer flooding; and pollution incidents) and other ODIs. As can be seen, net penalties have been earned on leakage and supply interruptions, and net rewards have been earned on the others. Again, it is hard to square this with Ofwat’s claim that companies have an ‘information asymmetry’ advantage that means they can systematically fool the regulator.

²¹⁴ Available at: <https://www.ofwat.gov.uk/regulated-companies/company-obligations/outcomes/service-and-delivery-2018-19/>.

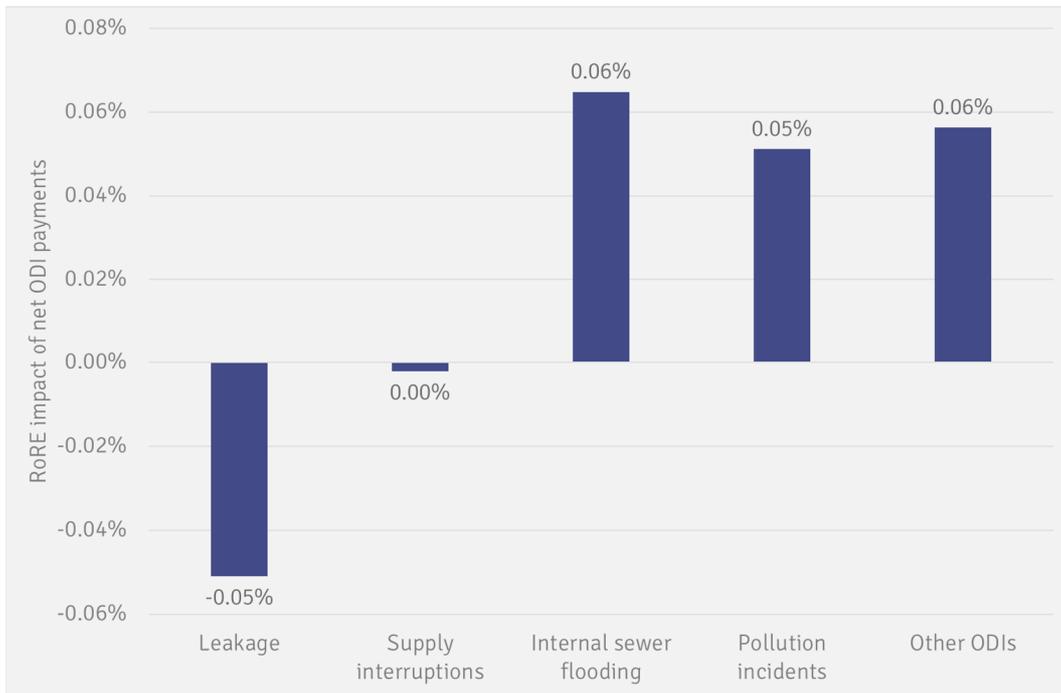


Figure 17: RoRE impact of ODI payments in the first four years of AMP6 split by ODI. Source: based on published data from Ofwat's Service Delivery Report 2018-19²¹⁵

6.7.6 Notwithstanding the above, we note that Ofwat's statement indicates that, overall, companies have neither over, nor under, performed on ODIs at PR14 on average. In paragraph 6.7.3 however, YWS note that, in seeking to assert that companies benefit from an information asymmetry, Ofwat quotes ODI payments in £m terms, rather than on a RoRE basis (as above), in an attempt to make 'fractional' outperformance appear more material.

Information asymmetry creating an incentive to overstate downside risk

6.8 Water companies have little incentive to discover and reveal accurate information on the level of their efficient costs – since cost information is used by Ofwat to set their allowances in price determinations. [CCIP/2.1]

Company analysis indicating a 'negative downside' skew to risk at PR19 actually reflects the fact that companies: (i) benefit from an asymmetry of information advantage; and (ii) have an incentive not to reveal full information about the scope for outperformance and to be unduly risk adverse about expected performance. [YSP/2.81; CCIP/4.16]

²¹⁵ Ibid.

Information asymmetry between regulator and companies has in the past led to regulatory targets that have been insufficiently stretching. [CCIP/4.16]

In the absence of appropriate incentives, companies are likely to bid up requested cost allowances. [Reply-005/6.48]

Regulators should make downward adjustments to allowed costs or returns to account for information asymmetry and prevent companies earning high financial rewards by outperforming regulatory assumptions. [CCIP/2.6]

Historical performance of companies demonstrates Ofwat can set a downside skewed incentive regime in the expectation that companies will, on average, earn the base allowed return with the potential to outperform. This is consistent with the findings of the National Infrastructure Commission who said “regulators may need to ‘aim off’ in order to take the known information bias into account”. [Reply-008/2.54]

Outperformance should therefore be expected, as information asymmetries mean companies have a more detailed understanding of the extent of stretch in requested costs than the regulator, and each of the determinations Ofwat has made includes incentives for companies to outperform. [Reply-008/2.53]

- 6.8.1 Addressing the fact that, contrary to its own position, companies have submitted evidence of a strong negative RoRE risk skew at PR19 (under Ofwat’s FDs), Ofwat states that companies both: (i) benefit from information asymmetry; and (ii) have an incentive to use this to their advantage by not revealing information on their performance potential to the regulator. Ofwat further suggests this (in and of itself) provides evidence that, in reality, risk is appropriately balanced under its FD.
- 6.8.2 If companies had the benefit of an information asymmetry, and if they chose to advantage themselves through it, there would be clear evidence of overall outperformance in the industry (observable in terms of company outturn returns on capital being in excess of the WACC). Again, the evidence shows that the industry has not persistently, routinely and substantively outperformed the regulatory determined WACC.²¹⁶ In

²¹⁶ See Exhibit 034 (SoC), Economic Insight: ‘Financeability of the notionally efficient firm: top-down analysis’ (August 2019); and Annex 06 (SoC), Economic Insight: ‘Top-down analysis of the financeability of the notionally efficient firm’ (March 2020).

addition, evidence shows there has been an even split of 'winners' and 'losers' on this same basis.²¹⁷

- 6.8.3 This would seem to imply either that: (i) no material information asymmetry exists; and / or (ii) companies do not have an incentive to advantage themselves through it.²¹⁸ Rather than addressing this key fact, Ofwat has repeatedly and disingenuously referred to individual elements of price determinations over selected time periods (such as company spend against Totex allowances, as described in paragraph 6.6. Furthermore, even if there were evidence of outperformance, one would need to develop evidence as to 'why' that had occurred with care, in order to conclude that an 'information asymmetry' existed (rather than it being due to other factors, such as 'good' company management; mis-set regulatory targets not due to poor information; or exogenous factors). Once that investigation was complete, if an information asymmetry has been identified, the preferable regulatory response would then be to target the source of the asymmetry. Only if that were not possible would one resort to treating the 'symptom' (i.e. setting 'harder' targets) rather than the cause. Certainly, the blanket imposition of a 'step change' on the basis of an asserted information asymmetry lacks credibility and robustness.
- 6.8.4 Ofwat cites both the National Infrastructure Commission and UKRN study as examples of third parties that have referenced the possibility of 'information asymmetries' in regulated industries.²¹⁹ However, the theoretical possibility of an information asymmetry is not the same as evidence. As above, the fact is the water industry has not outperformed prior regulatory settlements. It would seem that Ofwat has simplistically 'read-across' arguments from other sectors to the water industry, without carefully considering whether the evidential basis varies between them.
- 6.8.5 Notwithstanding the lack of evidential support for any information asymmetry, when one considers the key building blocks of allowed revenues (Totex, outcomes, the WACC) it is unclear why one would expect companies to hold an information advantage in any case. Cost

²¹⁷ See Exhibit 034 (SoC), Economic Insight: 'Financeability of the notionally efficient firm: top-down analysis' (August 2019), page 6.

²¹⁸ In relation to (i) we note the lack of outperformance and even split of winners is more consistent with incentives working effectively, with variation reflecting genuine performance differences across firms and / or the inherent uncertainty in setting forward-looking regulatory targets.

²¹⁹ Exhibit 003 (SoC), CCIP, paragraph 4.16.

efficiency assessment at PR19 was developed through a comprehensive consultation process, in which the regulator and companies had access to exactly the same underlying data and models. Similarly, in relation to ODIs there is a published industry-wide dataset that tracks performance. The WACC is estimated primarily using market data, taken from public sources.

6.8.6 Moreover, contrary to Ofwat's assertion, companies have numerous incentives to reveal information on their performance potential. These include:

- (a) A financial and reputational incentive within the classification of business plan submission. In PR19 the classifications were 'exceptional', 'fast track', 'slow track' and 'significant scrutiny'.
- (b) 'Menu regulation', whereby the efficiency of plans materially influences the sharing rates between companies and customers of any out or underperformance.
- (c) Companies provide yearly data to Ofwat on performance across a range of key indicators and the ODI framework includes 'in-year' incentives. Thus, material differences between projected and actual performance are quickly discovered by Ofwat.

6.8.7 Beyond the above regulatory incentives, YWS cares deeply about its culture, reputation, brand and customers, and not just over the next five years. Furthermore, regulation is a repeated process, whereby the performance of efficient firms is 'revealed' over time. In this context, even if a company had an information advantage, its incentive to 'fool' the regulator would appear to be mitigated (i.e. because ultimately the regulator would discover this, making it less likely to believe the company in future, thus reducing the incentive over the longer term).

6.8.8 The picture Ofwat paints (of companies seeking to present an 'artificial' view of risk) is, in fact, precisely the opposite of the truth. As YWS has made clear in SoC, paragraphs 105-106, its Business Plan was supported by detailed and carefully considered risk analysis, designed to ensure risk and return were properly calibrated. In contrast, it is Ofwat that has failed to undertake a proper risk analysis to ensure that risk and return do not become disconnected.

FD creates a strong incentive for companies to achieve targets

6.9 Evidence from PR14 suggests that companies are strongly incentivised to respond to the stretch Ofwat has included in our PR19 final determinations, meaning that Ofwat does not expect

there to be a negative impact on realised returns for efficient companies on average. [CCIP/4.16; Reply-008; 1.10, 2.77]

- 6.9.1 Ofwat also argues that companies have strong incentives to respond to the stretch it has set at PR19; and that this is another reason why it does not expect a negative skew to risk under its FDs. This is an untenable line of argument, as the strength of incentive has little to do with whether a target has been set correctly in the first place and is achievable. For example, suppose a person with no prior engineering expertise were offered £100m in return for inventing commercially viable electricity powered airplanes. Clearly the strength of incentive has little to do with whether the target is appropriate, or the chances of it being achieved.

Regulatory mechanisms to mitigate risk

- 6.10 Water companies benefit from a number of protections to help mitigate risk and uncertainty (including indexation for general inflation, Totex out- and underperformance sharing, and volume based reconciliation mechanisms in retail and bioresources). [CCIP/4.1-4.2; Reply-008/2.2; Reply-005/Table 6.1]**

- 6.10.1 Ofwat's characterisation of companies 'benefitting' from certain mechanisms that mitigate risk and uncertainty is irrelevant to the central issues here, namely that: (i) the regulatory settlement as a whole should set an overall risk / return balance that incentivises outcomes that would likely arise in a competitive market; and (ii) evidentially, it is plain that Ofwat has failed to do this. Ofwat has: significantly increased the total equity at risk;²²⁰ failed to calibrate incentives such that an efficient firm would 'expect' to earn its allowed equity return;²²¹ implemented a gearing outperformance sharing mechanism that penalises debt finance over equity for no rational reason;²²² whilst at the same time, it has fundamentally re-based the equity return to a record low level, based on poorly conceived methodological changes (and has set the overall WACC 'too low').²²³ When considered as a package, the direction of these changes is itself questionable (e.g. increased equity risk, a significantly

²²⁰ Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the Final Determinations', pages 3-4 "[YWS's] representation position suggests material downside skews for both [Totex and ODI risk]"; YWS, SoC, paragraphs 48-49.

²²¹ Annex 01 (SoC), Economic Insight: 'Financeability of the notionally efficient firm: a bottom-up analysis', page 11; Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the Final Determinations', section 7.1.

²²² See Section 7 of this Response; and YWS, SoC, paragraph 246 et seq.

²²³ See Section 8 of this Response; and YWS, SoC, paragraph 217 et seq.

lower equity return, whilst at the same time seeking to achieve greater equity finance in relative terms).

6.10.2 Furthermore, the mechanisms Ofwat describes are of its own design. In principle, in designing the regulatory framework, a regulator should consider: (i) its impact on risk in totality; (ii) how it 'allocates' that risk between customers and companies; and (iii) the trade-off between incentive power and certainty of outcome. Ofwat's various descriptions of these mechanisms in isolation, as if they are all 'benefits to companies', fails to show any recognition of these fundamental principles of regulation. For example, 'Totex cost sharing' is characterised by Ofwat as a benefit to companies. In fact, it is a regulatory design choice, whereby Ofwat has chosen an option that reduces the strength of incentive for companies in relation to cost efficiency in exchange for more certainty around the likely profile of cost and, therefore, customer bills. Importantly, this conscious regulatory choice has a two-sided effect on investors. Whilst Ofwat is correct that companies are not fully exposed to downside risk should they overspend on costs, under Ofwat's method they also do not fully benefit from cost reductions as firms in competitive markets would (i.e. the gains of cost outperformance are also shared with customers). The same is true in relation to the cost of debt, where Ofwat has elected to move away from setting a 'fixed' cost of debt allowance (with strong incentive power for companies) to an 'indexation' approach, with less incentive power but more certainty. Again, it is inappropriate to characterise the regulator's elected balance between 'incentive power' and 'certainty' as a 'benefit' for companies.

6.11 Recognising the need to protect companies and customers from significant ODI reconciliation adjustments, Ofwat placed caps and collars on potentially financially significant Performance Commitments. Furthermore, to mitigate extreme cashflow and bill volatility, Ofwat's FDs offer companies the option, where outcome delivery incentive adjustments exceed $\pm 1\%$ of notional equity, to ask Ofwat to defer the excess to a subsequent year. [CCIP/4.16]

6.11.1 Specifically in relation to ODIs, and as described at paragraph 6.2 Ofwat has failed to undertake a robust analysis of 'package risk'.²²⁴ This is despite the fact that, in addition to ODIs existing to incentivise the delivery of the outcomes customers want, they also play a material role in the overall risk / return balance at PR19. In addition, a review of Ofwat's

²²⁴ Annex 02 (SoC), Economic Insight: 'Ofwat's approach to risk analysis in the Final Determinations' (March 2020).

approach to ODI interventions showed that Ofwat made numerous, and material, changes to YWS's ODI proposals (based on crude and arbitrary rules) without considering the overall impact on risk.²²⁵ This is a material deficiency on Ofwat's part. The fact that there are caps and collars in place on individual ODIs is true, but provides no evidence whatsoever of the overall risk balance arising from ODIs as a package under Ofwat's FD. As above, Ofwat appears to have resorted to simply listing mechanisms that can limit risk, as if this somehow itself constitutes evidence of overall risk exposure.

6.11.2 Ofwat's reference to companies being able to "defer" any excess impact on cashflows $> \pm 1\%$ of notional equity to the subsequent year is also irrelevant. The issue is that the ODI framework is flawed and fundamentally mis-calibrated, contributing materially to YWS's negatively skewed expected cash flows and returns. Cash deferrals from one year to the next have no impact on this and so have no bearing on whether the notional firm is investable for equity over PR19 and beyond.

6.12 Companies' licences allow interim determinations to be made in certain circumstances. The PR19 methodology allowed companies to propose 'notified items' that could trigger subsequent interim determinations. [CCIP/4.4]

6.12.1 The potential for interim determinations (triggered by notified items) is irrelevant to the concerns YWS has raised regarding the risk / return balance at PR19. Notified items can serve a useful purpose where: (i) one starts from the presumption that the FD has broadly been appropriately set; but where, (ii) based on the available information, there are clearly identifiable specific projects / cost types that remain subject to considerable uncertainty and may materially impact company revenues or costs (were the associated risks to crystallise). For this reason, notified items tend to be limited in scope and highly specific. For example, at PR19 Ofwat allowed Southern Water notified items relating to its Fawley Desalination project and its River Itchen Effluent Reuse project.²²⁶ However, YWS's concern at PR19 is that there is a material disconnect between risk and return under Ofwat's FD. As such, without remedy, YWS expects to earn returns well below its allowed base equity return. It is therefore clear that, even in principle, the potential for interim determinations is not itself a solution to the problem. YWS would also

²²⁵ Annex 05 (SoC), Economic Insight: 'Ofwat's approach to ODI interventions in the Final Determinations' (March 2020).

²²⁶ Exhibit 053, Ofwat: 'PR19 final determinations: Southern Water final determination', section 4.4.4.

highlight to the CMA that Ofwat's YWS FD included no notified items. Hence, even if these were considered a mitigation of Ofwat's errors in principle, in practice they are not relevant to YWS.

- 6.12.2 Ofwat's description of notified items also appears to imply that, if YWS was so concerned with the risk / return balance at PR19, it could have suggested additional notified items itself. Additionally, or in the alternative, Ofwat may be referencing the possibility of 'substantial effect' determinations, which are a mechanism to reset price controls if an unforeseen circumstance substantially impacts a company's costs or revenues. Again, this misses the point. YWS's concern is that the risk / return disconnect is a material one. Ofwat's mis-setting of key incentives fundamentally skews equity returns to the downside. It has re-based the equity return to a record low level. Yet, at the same time, Ofwat has increased equity risk, all whilst seeking to increase the proportion of equity finance in the industry through penalising debt finance. Notified items or substantial effect determinations are a wholly inappropriate way of addressing such fundamental issues. That is why, throughout the development of YWS's Business Plan and subsequent engagement with Ofwat, YWS instead sought to engage constructively on the substantive methodological issues through the submission of evidence.

Claims that risk is reduced at PR19 relative to prior price controls

6.13 Water companies benefit from additional protections in the 2020-25 period, including reconciliation mechanisms for the cost of new debt and tax; risk sharing mechanisms for business rates, abstraction charges and the real price effects of labour costs). [CCIP/4.3; Reply-005/Table 6.1; Reply-008/2.2]

- 6.13.1 In highlighting 'new' mechanisms that it says specifically 'benefit' companies over 2020-25 (by mitigating risk), Ofwat further seems to be intimating that PR19 is 'less risky' for companies and investors than prior price controls. Such a suggestion lacks credibility and fails even a cursory 'common sense' review. YWS would highlight to the CMA that, relative to previous price controls, at PR19 companies and their investors face the following issues for the first time:

- (a) volume risk in water resources;
- (b) long-term investment risk in water resources for new investments;
- (c) volume risk in bioresources;
- (d) forecast accuracy risk in bioresources;

- (e) exposure to input price inflation risk for all cost types other than labour;
- (f) financial incentives around developer services; and
- (g) financial penalties from gearing choices.

6.13.2 Ofwat's descriptions of new mechanisms that mitigate uncertainty at PR19 are disingenuous when presented outside of this context. For example, Ofwat highlights that there is a reconciliation mechanism for real price effects relating to labour costs at PR19, whilst failing to mention that companies were previously set allowances for real price effects covering a much broader suite of input costs, including chemicals and energy costs.

6.13.3 Stepping back, it is clear that there has been an 'explosion' in the complexity of incentives and corresponding value at risk for equity at PR19. The increase in the number and value of ODIs alone makes this clear. Indeed, Ofwat's own view is that there has been a significant increase in the amount of equity 'at risk' at PR19. Specifically, Ofwat's view at PR14 was that there was 6.6% (percentage points) of equity return 'at risk', compared to a much higher figure of 11.1% (percentage points) at risk for PR19.²²⁷

6.13.4 The above does not imply that YWS disagrees with Ofwat's choice to introduce the mechanisms it has in each instance, or its choices regarding the balancing of 'incentive power' versus 'certainty'. Rather, YWS is merely seeking to clarify that Ofwat's listing of said risk-sharing mechanisms (and its characterisation of them as 'protecting companies') does not address the pertinent question of whether it has, in practice, set the overall risk / return balance correctly.

Asymmetric performance incentives are not new

6.14 Asymmetric performance incentives for service measures are not new. [Reply-008/2.78]

At PR14, as at PR19, ODIs had more downside than upside. As shown in Table 2.2, 48 percent of Performance Commitments that had

²²⁷ Note, these figures are calculated as the difference between Ofwat's published view of the P10 and P90 values for RoRE at PR14 and PR19. PR14 values from: Exhibit 005 (SoC), Ofwat: 'Final price control determination notice: company-specific appendix – Yorkshire Water' (December 2014), page 55. PR19 values from Exhibit 029 (SoC), Ofwat: 'PR19 final determinations: Yorkshire Water final determination', page 67. Ofwat also published forward looking guideline ranges for RoRE risk in its PR14 and PR19 methodologies. These also indicate the regulator's intent to place a higher proportion of equity 'at risk' at PR19.

financial ODIs only had underperformance rates and so only had the potential for downside. This compares to 40 percent at PR19. Also for those ODIs that had the possibility of both upside and downside, at both PR14 and PR19, just over half had greater underperformance rates than outperformance rates. [Reply-008/2.80]

For the disputing companies, Anglian Water, Bristol Water and Yorkshire Water all had at least as many underperformance only ODIs in PR14. Bristol Water, Northumbrian Water and Yorkshire Water also had significantly more ODIs with both out- and under-performance rates where the underperformance rate exceeded the outperformance rates. [Reply-008/2.81]

Historical performance of companies demonstrates Ofwat can set a downside skewed incentive regime in the expectation that companies will, on average earn the base allowed return with the potential to outperform. [Reply-008/2.54]

- 6.14.1 At various places in its Reply, Ofwat argues it is reasonable to set asymmetric incentives. However, in doing so, Ofwat appears to be conflating several issues. Namely: (i) the principles of how risk should be balanced when incentives are set; (ii) the evidence required to determine whether this is the case in practice; and (iii) the possibility of information asymmetry.
- 6.14.2 In line with the established interpretations of the financing duty, incentives should be set so that for an efficient firm, the expected return equals the base allowed return, and there is a symmetrical balance of risk. In practice, therefore, for any individual company that is not the efficiency benchmark firm, one would expect there to be some downside skew under a regulator's determinations. YWS should highlight to the CMA that its submitted Business Plan was entirely consistent with this, showing a modest downside RoRE risk skew overall, reflecting the fact that YWS has consistently been shown to be an efficient firm, but (like any company) is not 'perfectly' efficient.
- 6.14.3 The much more significant downside skews on RORE ranges reported by YWS (and other companies) under Ofwat's FD reflect the impact of Ofwat's extensive interventions in YWS's Business Plan, especially in relation to ODIs. That is to say, starting from YWS's Business Plan ODI package, YWS ran Ofwat's interventions through an ODI RoRE risk model to assess the impact on expected revenues, and the associated P10 and P90 values. In this context, Ofwat's remarks that at PR14 YWS had *"significantly more ODIs with both out- and under-performance rates where the underperformance rate exceeded the outperformance rates"*

are irrelevant. The revenue impact of ODIs is a function of how Ofwat sets each individual parameter across each individual ODI and expected firm performance against said ODIs in totality. The fact is that YWS's proposed package was carefully calibrated to ensure the resultant risk balance was appropriate. Ofwat then systematically made targets harder, with no supporting risk analysis. It is this myriad of changes by Ofwat that gives rise to the substantial downside RORE skew in the real world. YWS must again remind the CMA that it is Ofwat that has failed to provide any evidence of: (i) the expected performance of an efficient firm; (ii) risk analysis capturing the uncertainty inherent in the possible performance of an efficient firm; nor (iii) evidence that its package risk is appropriately balanced.

6.14.4 Ofwat's assertion that historical performance provides evidence that it can intentionally set a downside skew to incentives is also misplaced. As set out above, theory would suggest a 'small' downside skew is intuitively sensible for YWS, consistent with its Plan. However, the economics basis for that is merely one of relative efficiency (i.e. the efficient firm should have symmetrical risk, but YWS is not perfectly efficient). Ofwat instead seems to be suggesting that because it finds evidence of historical outperformance, it can intentionally set a downside skew at PR19. This is problematic for several reasons, as follows:

- (a) As noted above, Ofwat is now arguing that its 'step change' in incentives is not predicated on historical outperformance – yet here, again, is seeking to do exactly that.
- (b) The examples used by Ofwat relate to Totex underspend and / or ODIs in isolation. As explained above, the correct approach is a ROCE versus WACC analysis, on which basis no evidence of systemic outperformance exists.
- (c) As outlined above, our expected downside RORE skew at PR19 under Ofwat's FD reflects risk modelling that overlays Ofwat's interventions. Thus, Ofwat's remarks regarding expectations at PR14 are wholly irrelevant (i.e. noting that YWS is being asked to meet materially more stringent targets at PR19 and there is a greater degree of equity at risk).

Overall view on the balance of risk and return

6.15 Ofwat concludes based on changes made since draft determinations and historical evidence that its final determinations represent an

overall risk-reward package which is stretching but achievable for the notionally efficient company. [CCIP/4.17, Reply-005/6.45]

While company-specific factors will drive variation between companies, Ofwat affirms its view that the efficient notional company will achieve Ofwat's targets on average, and earn its allowed return on capital in doing so. [CCIP/4.17]

Ofwat's determination provided YWS with a reasonable return if it meets the cost allowances and Performance Commitments set out in our determination on the basis of the notional structure. The company has significant scope to earn upside from outperformance as well as the risk of lower returns from underperformance, with a small positive skew overall to its overall risk range. [Reply-005/6.2, 6.45]

- 6.15.1 Ofwat simply has no evidential basis for the above statements and YWS rejects the suggestion that it has appropriately balanced risk and return in its entirety. It is demonstrably the case that Ofwat has failed to apply a methodology that would result in targets being set such that they are the expected performance of an efficient firm. It is also demonstrably the case that Ofwat has failed to undertake appropriate risk analysis necessary to determine what performance an efficient firm might achieve and the uncertainty around this. This indicates scant contemplation of the very real customer and environmental harm that arises in the event that expected returns are set below the efficient level.
- 6.15.2 As noted above, the YWS Board considers the FD represented a significantly downside skewed balance of risk, which could threaten the long-term resilience of the company. As such, this was fundamental to its decision to seek a redetermination with the CMA.

7. Allowed return on capital

Overview

This section addresses the points raised by Ofwat in its Reply to YWS's Statement of Case on allowed return on capital. YWS's position remains that Ofwat's allowed return of 1.92% (in real, RPI-stripped terms) does not provide a reasonable return for an efficient company.

In this section, YWS elaborates on a number of points regarding the estimation of the cost of capital where YWS disagrees fundamentally with Ofwat's assertions. Specifically:

- Ofwat's short estimate window leads to statistically imprecise beta estimates, and at least five years of share price data should be used;
- Ofwat's suggested long-term inflation assumptions for converting nominal cost of capital values to real is unworkable in practice and wrong in principle;
- there must be a basic consistency between the modelling of a notional company's likely credit rating and the selected index for the cost of new debt; and
- Ofwat's one-size-fits-all cost of debt approach to cost of debt ignores the financing realities of companies. Analysis by Centrus confirms YWS's historic funding decisions were executed efficiently.

In addition, YWS submits a technical annex which addresses further points made in Ofwat's Reply regarding the cost of capital, and also refers to its representation to the ongoing CMA NATS appeal on issues including estimated market return and the risk-free rate.

Furthermore, YWS explains why it is inappropriate for Ofwat to rely on share price data for listed companies to support its decision on cost of capital, and has identified errors in Ofwat's underlying analysis that undermine the assertion these companies' shares have traded at a market premia.

This analysis confirms that Ofwat has reached an incorrect conclusion on the cost of capital.

Introduction

- 7.1.1 Having considered the points raised in Ofwat's Reply, YWS's position remains that Ofwat's allowed return of 1.92% (in real, RPI-stripped terms²²⁸) does not provide a reasonable return for an efficient company based on the available market evidence.
- 7.1.2 YWS set out its position on issues including the risk-free rate and expected market return in its response to the CMA's provisional findings in the NATS inquiry and requests that the CMA refers to these representations as an input into its PR19 work.²²⁹
- 7.1.3 For the purpose of this Response, YWS elaborates on a number of points that are specific to the estimation of the cost of capital for a water and sewerage company and where YWS disagrees fundamentally with the approach that Ofwat is asking the CMA to take in its Reply, namely:
- (a) *beta*. YWS advocates using at least five years of share price data when estimating beta and considers that Ofwat's preferred, shorter estimation window gives statistically imprecise beta estimates;
 - (b) *inflation*. Ofwat's suggestion that the CMA should use a long-term inflation assumption when converting nominal cost of capital values to real is unworkable in practical terms and wrong in principle;
 - (c) *index for cost of new debt*. there must be a basic internal consistency between the CMA's modelling of the notional company's likely credit rating and the selection of the iBoxx index/indices that appear within the formula-based allowance for the cost of new debt; and
 - (d) *company specific adjustments for cost of debt*. the CMA should not impose a one-size-fits-all cost of debt allowance on companies that will naturally pay different interest rates due to the timing/tenor of their borrowing.

²²⁸ This figure is for wholesale controls – see Ofwat, PR19 final determinations: Aligning Risk and Return Technical Appendix, page 4.

²²⁹ YWS's NATS submission was submitted to the CMA for consideration in the PR19 redetermination on 16 April 2020 (copied to waterdetermination2020@cma.gov.uk) and is available [here](#). YWS's NATS submission has also been annexed to the Response at Annex 10.

7.1.4 YWS also responds at the end of this section to the inferences that Ofwat is drawing from Severn Trent's and United Utilities' share prices to explain why they cannot be used to assess the appropriateness of Ofwat's cost of capital.

7.1.5 Finally, given the volume of material submitted to the CMA on this topic, and for ease of navigation, YWS submits with this Response a technical annex which addresses additional points made in Ofwat's Reply regarding the cost of capital, the GOSM and financeability at Annex 1.²³⁰

a) Beta

7.2 Estimation window: Ofwat considers that its FD point estimate of 0.29 for the unlevered beta remains appropriate, adequately reflecting uncertainty over the appropriate length of the estimation window. [Reply-008/3.51-3.61]

7.2.1 One of the key points of difference between Ofwat and YWS regarding the cost of equity, outside of the disagreements on the risk-free rate and expected market return, concerns the time period that the CMA should use when making empirical estimates of beta.

7.2.2 Table 18 reproduces Europe Economics' calculation of unlevered water company betas as at 30 September 2019.

	Spot	1-yr average	2-yrs average	5-yrs average
2-yr daily	0.25	0.27	0.28	0.33
2-yr weekly	0.18	0.24	0.30	0.34
5-yr daily	0.32	0.33	0.33	0.31
5-yr weekly	0.30	0.32	0.34	0.31

Table 18: Europe Economics' estimates of the combined SVT/UU beta as at 30 September 2019. Source: Europe Economics (2020), Further advice on the allowed return on capital for the water sector at PR19 – betas and gearing.

7.2.3 It can be seen from the shading in the above table that Ofwat had to use a very narrow window of share price data in the FD in order to justify an unlevered beta value that was lower than 0.30. Specifically:

²³⁰ Annex 01, YWS: Technical Annex for YWS's Response regarding Cost of Capital, Capital Structure and Financeability.

- (a) Ofwat had to focus its attention on estimates of betas calculated with no more than four years of data (i.e. the spot/1-year/2-year averages for 2-year daily and 2-year weekly betas); while knowing that
- (b) more robust, and more conventional, estimation approaches that used a minimum of five years of share price data gave a range for the unlevered beta of 0.30 to 0.34.

7.2.4 A similar picture is apparent in Europe Economics' updated estimates as at a cut-off date of 29 February 2020, as set out in Table 19.

	Spot	1-yr average	2-yrs average	5-yrs average
2-yr daily	0.28	0.27	0.28	0.33
2-yr weekly	0.27	0.21	0.26	0.32
5-yr daily	0.32	0.32	0.33	0.31
5-yr weekly	0.33	0.31	0.33	0.32

Table 19: Europe Economics' estimates of the combined SVT/UU beta as at 29 February 2020. Source: Europe Economics (2020), Further advice on the allowed return on capital for the water sector at PR19 – betas and gearing.

7.2.5 In Table 19, once again:

- (a) only the shortest estimation windows (i.e. < 4 years) give a beta that is less than 0.30; while
- (b) estimation approaches that use a minimum of five years of share price data gave a range for the unlevered beta of 0.31 to 0.33.

7.2.6 YWS does not consider that there is a single 'right' way of estimating beta (e.g. as regards the use of daily, weekly or monthly frequency data). However, given the noise in share price data²³¹ and inherent statistical imprecision in short-term beta estimates, it is recognised good practice to use an estimation window of at least five years wherever feasible. This point of principle has been applied in most UK regulatory and CC/CMA reviews, as well as much of the supporting academic research, as follows:

²³¹ In the case of water and sewerage companies, the 2019 General Election and Ofwat's PR19 are examples of events that have injected company- and industry-specific noise into share price data and, hence, obscured 'true' betas.

- (a) Wright et al study²³² for UKRN, 2018: *"[there is] a quite strong prima facie case to use all available data to estimate beta, not just a relatively short recent sample."*
- (b) Indepen study²³³ for Ofgem/UKRN, 2018: *"In all cases, a look back over at least five and probably ten years is desirable..."*
- (c) Ofgem RIIO-2 sector-specific methodology decision,²³⁴ 2019: *"We remain unconvinced that we should place material weight on short-term equity beta results. Statistically, we believe this is dubious and intuitively we do not think there is materially more information content within short-term (e.g. 2 to 5-year) beta values compared to long-run values. Our strong view is that the noise to signal ratio is particularly high within short-term results. We also observe a mean reversion effect within the data - we therefore believe that long runs of data will help us to see through the cycle, avoiding undue bias on high-points or low-points within the short-term date."*
- (d) Ofwat's evidence to the 2015 Bristol Water CMA inquiry,²³⁵ 2015: *"...single-day estimates which only provide a snapshot from a single estimation window can be subject to one-off movements which do not reflect the underlying systematic risk of a company. As long-term data series are available for each of the three listed WaSCs analysed, we would encourage the CMA to remove single-day estimates from their beta assessment, placing more weight upon time series averages in their assessment of their water industry beta assessment as these are more reflective of underlying systematic risk."*
- (e) CMA NIE inquiry,²³⁶ 2014: *"Given that beta can vary over time we think that it is right to base our estimate on a relatively long run of data."*

²³² Exhibit 054, Wright, Burns, Mason and Pickford: 'Estimating the cost of capital for implementation of price controls by UK regulators' (2018).

²³³ Exhibit 055, Indepen: 'Ofgem beta study RIIO-2' (2018).

²³⁴ Exhibit 056, Ofgem: 'RIIO-2 Sector Specific Methodology Decision – Finance' (2019) paragraph 3.155.

²³⁵ Exhibit 057, Ofwat: Ofwat response to CMA provisional findings (2015), paragraph 211.

²³⁶ Exhibit 058, Competition Commission: Northern Ireland Electricity Limited price determination (2014).

- 7.2.7 There is no reason that YWS can conceive of for the CMA to depart from conventional practice when it produces its cost of capital calculations. As set out in Tables 18 and 19 above, unlevered beta estimates calculated using between five and ten years of share price data sit within a fairly narrow range of 0.30 to 0.34. YWS submits that the PR19 unlevered beta must logically fall within this range, and that the selection of a lower value would put undue weight on statistically imprecise skewed data.
- 7.2.8 YWS's preferred beta point estimate for the unlevered beta remains 0.33, as derived from share price data up to a cut-off date of February 2019.²³⁷

b) Inflation assumptions

7.3 The CMA should use a long-term inflation assumption. (Ofwat NATS response pages 6-7; Reply-008/3.128-3.131)

- 7.3.1 Ofwat argues in its Reply that the CMA should use long-term, equilibrium estimates of inflation when converting nominal estimates of individual cost of capital parameters into inflation-stripped, real terms equivalents. Ofwat proposes figures of 2.0% for CPIH inflation and 2.9% for RPI inflation (compared to figures of 2.0% and 3.0%, respectively, cited in the FD).
- 7.3.2 YWS submits first of all that Ofwat's proposed approach is unworkable in practical terms. The CMA will be aware that there is considerable uncertainty at present around the future path of RPI inflation given ongoing consultations by the Government about necessary reforms to the construction of the RPI index that will take effect between 2025 and 2030.²³⁸ It should be self-evident that this renders it impossible to make the kind of long-term RPI forecast that Ofwat proposes.
- 7.3.3 In addition, Ofwat's proposed approach is wrong in principle. Under Ofwat's price control methodology, the overall return that investors take from AMP7 is partitioned into two parts:
- (a) the in-year, real rate of return; and
 - (b) CPIH/RPI inflation of the RCV.
- 7.3.4 As a matter of basic principle, the sum of these parts must logically add up to the cost of capital, otherwise YWS will have either too much or too

²³⁷ YWS, SoC, paragraph 227.

²³⁸ Exhibit 059, HM Treasury and UK Statistics Authority: 'A consultation on the reform to the Retail Prices Index methodology' (March 2020). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879860/RPI_Consultation_extension.pdf.

little revenue to meet costs that will fall due. In methodological terms, this entails that the in-year real rate of return must be set equal to however much of the cost of capital remains after accounting for forecast AMP7 RCV indexation.

7.3.5 Ofwat’s position is that the CMA should ignore the reality that is facing companies and knowingly under- or over-remunerate companies during each and every price control period. The effect of such a policy can be seen clearly in Figure 20 which illustrates the revenue that Ofwat would ultimately have the CMA provide a company in 2020/21 for a bond which pays a hypothetical 4.5% nominal coupon. Using the OBR’s March 2020 inflation forecasts of 1.4% CPI inflation and 2.1% RPI inflation, Figure 20 shows that Ofwat would have the CMA provide in aggregate for a cost of debt allowance worth 3.75% for this year leaving a shortfall of 75 basis points from the 4.5% interest cost that the company is obliged to pay to its lenders.

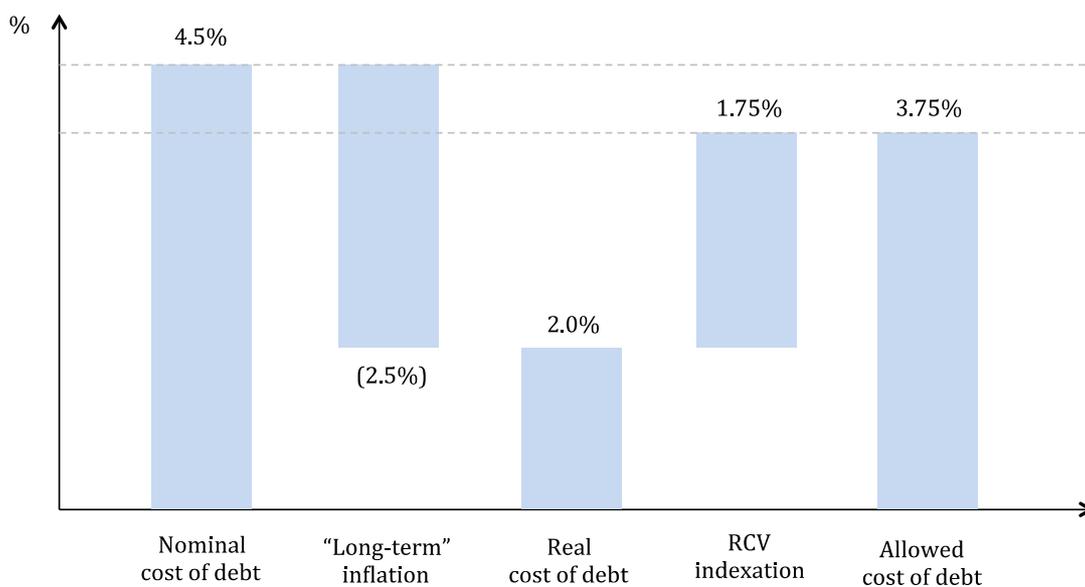


Figure 20: Calculation of the revenue that Ofwat would have the CMA provide a company for 2020/21 for a bond which pays a hypothetical 4.5% nominal coupon. (Note: inflation and RCV indexation are a 50:50 average of CPIH and RPI inflation.)

7.3.6 Table 21 shows that the shortfall that Ofwat would have the CMA engineer in 2020/21 is not likely to be offset by any kind of overpayment later in AMP7. Nor can there be any kind of expectation that Ofwat’s approach would result in an offsetting error in later regulatory periods.

	2020/21	2021/22	2022/23	2023/24	2024/25	AMP7 average
CPI	1.4%	1.9%	2.1%	2.0%	2.0%	1.88%
RPI	2.1%	2.9%	3.0%	2.9%	2.8%	2.77%

Table 21: OBR March 2020 inflation forecasts. Source: OBR (NB: YWS notes that the OBR’s estimates were made in March 2020 and will need to be updated).

7.3.7 Accordingly, it is uncontroversial to state that Ofwat’s proposed approach fails to ensure that investors secure a reasonable return on capital. The only way to ensure that companies recover their cost of capital – in line with Ofwat’s statutory duty to secure that a company can secure a reasonable return on capital, both within the confines of the AMP7 period and over a long-term horizon – is to strip the estimated nominal cost of capital for average expected RPI/CPIH inflation during each individual five-year period.

c) Reference index for the cost of new debt

7.4 The iBoxx A/BBB bond yield indices should be used to set an allowance for the cost of new debt. [Reply-005/Table 6.1 and 6.16; Reply-008/3.86-3.89]

7.4.1 Section 9 of this Response addresses Ofwat’s analysis of financeability. One of the key points made therein is that Ofwat opted in its PR19 FD to disregard rating agencies’ published rating methodologies and so knowingly set price controls that leave the majority of the industry struggling to achieve a Baa1/BBB+ credit rating.

7.4.2 In these circumstances, it was incorrect for Ofwat to set up a cost of debt index for new borrowing that gives 50% weight to the iBoxx yields for A rated bonds. During the forthcoming five-year period, companies with industry-average financing costs that maintain Ofwat’s notional balance sheets, by deliberate design, will not be capable of issuing debt with A category ratings. Rather, the expectation is that all new borrowing will have a BBB category rating.

7.4.3 Basic internal consistency therefore demands that Ofwat should have used a BBB only benchmark in its allowed cost of debt index. This would have ensured that the allowed cost of debt is in line with companies’ expected interest costs. Because Ofwat did not take this step, it erroneously provided for a cost of debt that is not practically attainable.

7.4.4 It is important that the CMA does not make the same mistake in its redetermination. This requires that there is a proper feedback loop from the CMA's financial modelling and its assessment of the achievable credit rating back to the selection of the index/indices that go into the formula for the cost of new debt.

d) Company-specific costs of debt

7.5 Applying a sector-wide allowance for the cost of embedded debt is consistent with long-standing regulatory practice. [Reply-008/3.92-3.94, 3.96 and 3.98]

7.5.1 In its SoC, YWS requested that the CMA's overall allowance for the cost of debt should be based on:

- (a) YWS's actual cost of embedded debt of 4.93%; and
- (b) YWS's actual proportions of embedded and new debt of 88% and 12% respectively.²³⁹

7.5.2 Ofwat insists in its Reply that there must be a one-size-fits-all approach, in which all water and sewerage companies receive the same cost of debt based on a single industry-average allowance for embedded debt and a single industry-average split between embedded and new debt. YWS submits that this is not an appropriate regulatory policy to bring to the setting of cost of debt allowances.

7.5.3 Ofwat seems to be saying that differences between companies' borrowing costs must always and everywhere be attributable to differences in efficiency, such that companies that pay lower-than-average interest rates are efficient and should be awarded revenues that exceed their actual interest expenses, while companies that pay higher-than-average interest rates are inefficient and should be awarded revenues that fall short of actual costs.

7.5.4 Unfortunately, this ignores the realities of the financing challenges that companies have and the way in which companies borrow. The 17 companies in the sector do not raise debt in any kind of continuous, homogenous way. Instead, company costs of debt are always going to be heterogeneous due to factors including:

- (a) intrinsic differences in companies' capital programmes;
- (b) the ensuing dates on which companies issued/issue debt; and

²³⁹ YWS, SoC, paragraph 232.

- (c) the tenor of the borrowing entered into.
- 7.5.5 On the first two points, companies will naturally have gone, and continue to go, to the debt markets at different times, based in part on the size and shape of their investment plans. This will inject a natural degree of variation in interest costs across the sector which is then amplified by the third factor i.e. the different decisions that treasury teams will inevitably have taken about short- vs medium- long-term debt.
- 7.5.6 Unless Ofwat and/or the CMA wishes to argue that there was/is a single right schedule of debt-raising and a single right tenor at any given point in time, YWS submits that a regulatory approach that completely ignores company-specific costs of debt and which consciously over- or under-rewards each individual company's actual interest costs is irrational and results in Ofwat failing to have regard to relevant considerations, inconsistent with standard public law norms.
- 7.5.7 It follows that the CMA will need to give recognition to company's actual costs of debt when it makes its cost of capital calculations. In taking this position, YWS recognises that it is important to consider whether a company's historical borrowing choices pass a test of 'prudency'. To this end, Annex 7 to this Response is a paper by Centrus that reviews the build-up of YWS's debt portfolio.²⁴⁰
- 7.5.8 The key conclusion from the analysis conducted by Centrus is that YWS's debt (including the derivative portfolio) was taken out efficiently at the time of issuance, with the current variance between YWS's actual cost of debt of 4.93% and Ofwat's proposed allowance of 4.47% being due to timing, rather than inefficiency. This conclusion is supported by the following key highlights from the report:
- (a) Compared to Ofwat's arbitrary, straight-line 15-year trailing index average, YWS's (and the sector's) debt book is tilted towards the older period between 2005 and 2010, when interest rates were considerably higher than they were in the period 2010 to 2020.
- (b) YWS's debt portfolio was raised efficiently versus Ofwat's regulatory benchmarks. In particular, if all debt in YWS's current portfolio had been issued at iBoxx yields at issuance, YWS's actual cost of debt as at 31 March 2020 would be 27bp higher (i.e. 5.20%).

²⁴⁰ Annex 07, Centrus: 'Yorkshire Water Debt Portfolio Review' (May 2020).

- (c) A counterfactual scenario where YWS's index-linked (*IL*) swap derivatives are replaced with "pure" IL debt, results in an immaterial (3bp) difference to YWS's actual cost of debt (4.90% versus 4.93%).
- (d) IL debt markets have not historically provided the same liquidity or efficiency for "pure" debt in comparison to derivatives, especially since 2007. For long-dated liabilities, the swap markets have presented a better opportunity for companies to raise the desired proportion of IL debt.
- (e) YWS is not an outlier in terms of the overall tenor of its debt portfolio in comparison to the rest of the sector.

7.5.9 In addition to the efficiency of our cost of debt, the analysis undertaken by Centrus has also shown:

- (a) that outperformance versus the index has decreased over time; and
- (b) the tenor of industry debt is longer than Ofwat's trailing 15 year average, meaning there will be a greater divergence at PR24 between actual industry embedded costs and Ofwat's chosen methodology

7.5.10 Further detail on these key points is provided within our responses to the points raised by Ofwat in relation to the cost of new debt and financeability being a short term issue, within the supplementary technical Annex 1.

7.5.11 YWS also notes that the evidence that Ofwat has provided to support its sector wide allowance understates the actual cost of debt for the sector for the following reasons:

- (a) Ofwat's analysis excludes a number of swaps held by companies across the sector, which understates the cost of debt by c50bp,²⁴¹ based on previous evidence provided by Europe Economics. As detailed above at paragraphs 2.18.17-2.18.23, YWS sees no reason why these should be excluded.
- (b) Ofwat has sought to compare the cost of debt reported by companies in their 2019 APR's to their PR19 embedded debt allowance but has failed to note that the 2019 APR data is based

²⁴¹ See Exhibit 060, Europe Economics: 'PR19 – Initial Assessment of the Cost of Capital' (December 2017), Table 9.2, page 70. Available at: <https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Europe-Economics-Final-report.pdf>.

on an actual March 2019 RPI of 2.44%, not Ofwat's PR19 assumption of 3.0%; hence the APR data needs to be uplifted to provide an appropriate comparison. YWS's reported cost of debt would have been 37bp higher if reported based on an RPI of 3.0%.²⁴²

7.5.12 If Ofwat's sector allowance of 4.47% is uplifted by c40-50bp to reflect the above errors, then the sector allowance would actually be very similar to YWS's actual cost of 4.93%.

(a) UU/SVT share price premia to RCV

7.6 Share prices of Severn Trent and United Utilities imply that Ofwat's allowed return is above market return requirements. [Reply-008/3.2]

7.6.1 Ofwat argues that the way in which Severn Trent's and United Utilities' share prices have reacted to Ofwat's FD shows that Ofwat, if anything, over-estimated the cost of capital. The implication seems to be that the CMA should therefore not feel a pressing need to make adjustments to the overall rate of return to correct the errors identified in this Response.

7.6.2 YWS has examined the supporting spreadsheets that Ofwat provided to justify its assertion that the two companies have recently exhibited market premia of 1.04 to 1.08.²⁴³ YWS has identified a number of errors and omissions in Ofwat's analysis, as follows:

- (a)* there is a calculation error in Ofwat's arithmetic which causes it to omit to ascribe any value to the companies' non-regulated businesses in its headline estimate of market-to-asset ratios;
- (b)* the quoted 1.04 to 1.08 range is for Severn Trent only. Ofwat has not, in fact, calculated a range for United Utilities;
- (c)* the finding that Severn Trent has been trading at a premium to RCV is only true for the month of February 2020. In April and May 2020, the Severn Trent share price has, on average, traded at a ratio of 0.98 to 1.02 to RCV; and
- (d)* the range for United Utilities, calculated using the same methodology, is 0.95 to 0.97 - i.e. United Utilities has been trading at a residual discount to RCV.

²⁴² Ibid.

²⁴³ Data provided from Ofwat on 15 May 2020 in response to company information request.

- 7.6.3 A corrected version of Ofwat’s spreadsheet, highlighting and correcting for Ofwat’s mistakes, is enclosed at Annex 12 to this Response.
- 7.6.4 The difficulties that Ofwat has clearly had when interpreting recent share prices highlights how problematic it can be to use this kind of evidence as an input into a cost of capital calculation particularly given how different the three listed companies in the sector are from Ofwat’s notional company, as the analysis below demonstrates.
- 7.6.5 As set out in section (d) above, the CMA needs to remember that Ofwat’s PR19 methodology handed all companies an industry-average cost of debt, thus deliberately over-remunerating some companies while under-remunerating others. Figure 22 reproduces Ofwat’s analysis of companies’ actual costs of debt as at 31 March 2019. As noted above in 7.5.11, the chart below understates companies’ actual cost of debt in comparison to the proposed PR19 allowance as the inflation assumptions are not consistent; however the chart shows that the three listed companies (denoted by SVE, SWB and U UW) have the three lowest costs of debt in the sector, and are thus the companies that take the maximum financial benefit from Ofwat’s interest reward/penalty policy. Across the sector as a whole, once inflation assumptions are aligned, there is only one other company – Wessex Water – whose interest costs will be materially lower than Ofwat’s PR19 embedded debt cost allowance (shown as the yellow line in the above chart).

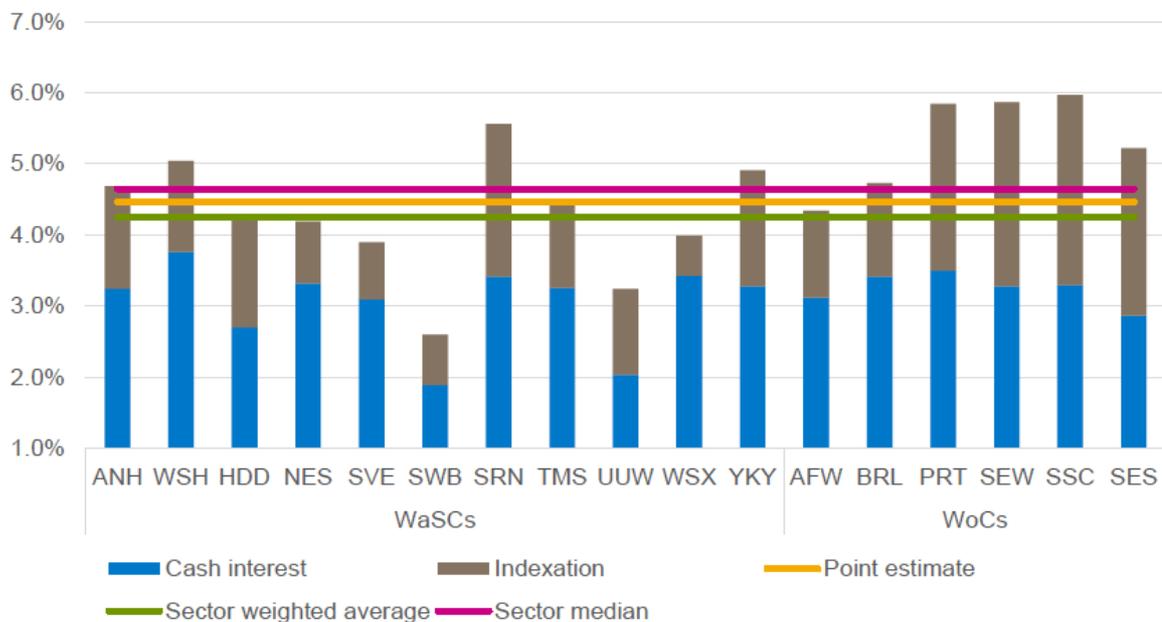


Figure 22: Actual cost of debt by company, nominal (%). Source: Ofwat (2019), PR19 FD allowed return on capital technical appendix.

7.6.6 Figure 23 adds to this picture by showing how much existing debt companies will be refinancing in the next five years. Again, two of the three listed companies stand out from the pack as having the most debt – i.e. the equivalent of more than 30% of their borrowings – due to mature in less than five years. This compares to Ofwat’s industry-average weight for new debt of 20%.

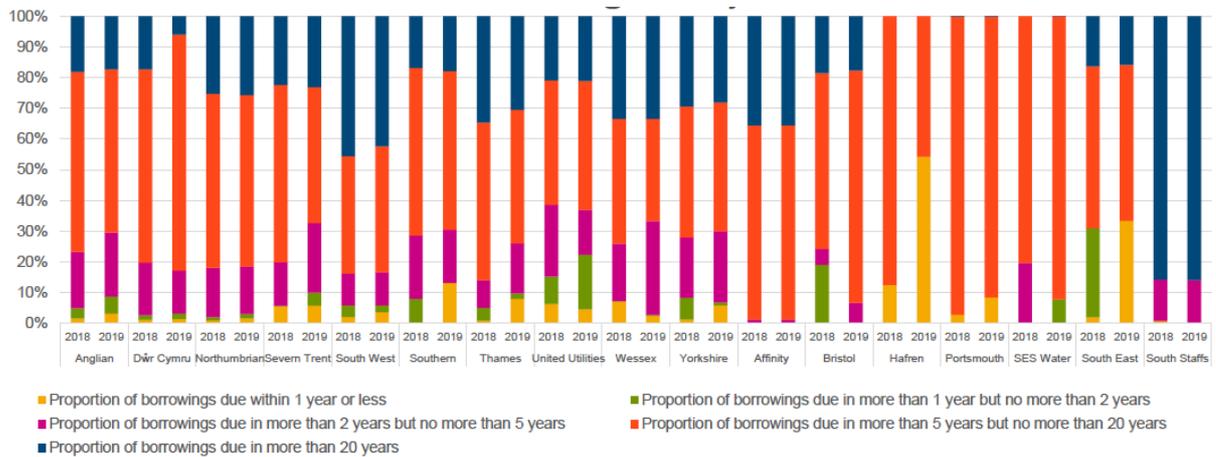


Figure 23: Borrowing maturity by company. Source: Ofwat (2020), Monitoring financial resilience.

7.6.7 Insofar as corporate interest rates currently sit at or near to historical lows, Figure 23 suggests that Severn Trent and United Utilities will likely be able to further entrench their out-performance of the cost of debt during the new regulatory period.

7.6.8 The advantageous position that the three listed companies find themselves in ought to translate directly into share prices that sit above RCVs (all other things being held equal). If, for example, investors look at the data in Figures 22 and 23 and expect a company to out-perform the allowed cost of debt by the equivalent of one percentage point over the long term, the expected premia to RCV would be as follows:

$$\begin{aligned}
 \text{Out-performance of the allowed cost of capital} &= \text{out-performance of the cost of debt} \\
 &\quad \times \text{gearing} \\
 &= 1\% \times 0.6 \\
 &= 0.6\% \\
 \text{Premium to RCV} &= \text{out-performance} / \text{allowed WACC} \\
 &= 0.6\% / 5.02\% \\
 &= 12\%
 \end{aligned}$$

$$\begin{aligned}\text{Equity premium vs regulatory equity} &= \text{Premium to RCV} / (1 - \text{gearing}) \\ &= 12\% / 0.4 \\ &= 30\%\end{aligned}$$

- 7.6.9 If investors expect long-term out-performance of the cost of debt of more than one percentage point, the premia in the above calculations will be proportionally higher.
- 7.6.10 It follows that the three listed companies do not currently offer a representative characterisation of investor sentiment after PR19. If share price data for the rest of the companies in the sector were available, the pattern of premia/discounts to RCVs would very likely be skewed much more heavily to the downside.
- 7.6.11 The CMA should therefore avoid drawing any conclusions from this data about the appropriateness of Ofwat's cost of capital calculations for the sector as a whole.

8. Capital structure

Overview

This section focuses principally on Ofwat's gearing out-performance sharing mechanism. It highlights serious concerns as to the rationale for this mechanism and the flaws in the approach taken by Ofwat.

YWS's responses refute unequivocally Ofwat's assertions there is no benefit for customers from gearing higher than the notional level of 60% and there is a material transfer of risk to customers. These assertions contradict Ofwat's own acknowledgement to the contrary during PR19.

YWS notes that Ofwat's Reply has introduced an alternative justification for the gearing out-performance mechanism and now adopts a new, unsubstantiated narrative regarding the potential transfer of risk to customers or taxpayers. In this Response:

- YWS has set out the customer benefits of higher gearing from tax savings which Ofwat had itself acknowledged explicitly on numerous occasions, including at the start of the PR19 process.
- YWS has considered Ofwat's new assertions on transfer of risk, which ignores clear and robust protections built into YWS's long-term financing and regulatory arrangements. YWS's financing arrangements align lender and customer interests, complement YWS's licence and provide a more stringent set of financial covenants. Ofwat's simplistic focus on gearing is not appropriate when assessing companies with different financing structures.

YWS highlights statements by Ofwat and Moody's which emphasise the benefits of securitised debt structures and the ability to support higher levels of gearing compared to a company with an unsecuritised debt structure.

Consequently, YWS has concluded that Ofwat has taken contradictory stances, changed its approach between the Reference and the Reply, and most importantly its approach lacks evidential support.

Introduction

8.1.1 The stand-out feature of Ofwat's Reply to the companies' submissions on the gearing out-performance sharing mechanism is the glaring absence of any semblance of a defence for the *formula* that Ofwat used in the FD, and which Ofwat wants the CMA to use, to calculate the gearing 'out-performance' amount, i.e.:

Financial outperformance adjustment = (actual gearing % - 65%) x (allowed cost of equity - actual cost of debt) x 50% x closing nominal RCV.

8.1.2 As explained in YWS's SoC, Ofwat has stated that the formula is built from the principle that when a company gears up beyond 65% "*investors in such companies take the benefit of the difference between the cost of equity and the cost of debt for the actual proportion of gearing that is above our notional assumption*".²⁴⁴

8.1.3 However, the idea that companies that increase gearing above 60% can profit by taking the cost of equity from customers for a portion of their financing but pay out only the cost of debt to lenders is not something that any economist or financial practitioner would recognise.²⁴⁵

8.1.4 YWS notes that Ofwat seems to acknowledge this in its Reply when it states that: "*[w]here regulated monopolies increase gearing to levels materially above the notional level, they may transfer some risk to equity investors*".²⁴⁶ Nevertheless, Ofwat fails to concede the logical consequence, i.e. that its preferred formula is fatally misconceived.

8.1.5 YWS reiterates the criticisms made in its SoC about the absence of any rational economic logic for Ofwat's algebra²⁴⁷ and submits that it is now patently untenable for the CMA to roll Ofwat's formula into its own determination.²⁴⁸

²⁴⁴ Exhibit 012, Ofwat: 'Putting the sector back in balance: consultation on proposals for PR19 business plans' (April 2018).

²⁴⁵ YWS, SoC, paragraph 251.

²⁴⁶ Exhibit 051, Reply-008, paragraph 5.22.

²⁴⁷ YWS, SoC, paragraphs 246-259.

²⁴⁸ Southern Water, in its third-party representation to the CMA published on 21 May 2020, similarly submits that Ofwat has misapplied finance theory for its gearing sharing mechanism and that important policy decisions around the issue of capital structures need to be

Ofwat's alternative justification for the GOSM

8.2 The GOSM compensates customers for a transfer of risk from investors to customers. [Reply-008/5.10-5.11, 5.16-5.24]

8.2.1 Ofwat's Reply, more generally, betrays an overall distinct lack of clarity about the purpose of the proposed mechanism. In its reference to the CMA in March, Ofwat explained to the CMA that: "*[t]he mechanism was introduced to address a concern that companies and their investors retain all the benefits of high gearing arrangements.*"²⁴⁹

8.2.2 In its Reply, Ofwat largely abandons this line of argument and runs instead with a narrative that: "*[w]here regulated monopolies increase gearing to levels materially above the notional level, they may transfer some risk to equity investors, but also to customers or taxpayers at their potential expense. This underlines the importance of companies taking account of customer interests in financing decisions and to be prepared to share the benefits of these arrangements with customers.*"²⁵⁰

8.2.3 As explained in further detail below, YWS takes issue both with:

- (a) the insinuation that customers obtain no benefit from higher gearing; and
- (b) the notion that there is a material transfer of risk to customers.

8.2.4 In addition, Annex 2 contains an evidence based review of the GOSM, commissioned by YWS from Economic Insight, which assesses Ofwat's claims as set out in 8.2.3 above. It considers the basic premise that a company will financially benefit from higher gearing by earning higher profits. It concludes there is no evidence that a company profits for higher gearing and so no support for Ofwat's claims. Furthermore, the GOSM is viewed as more likely to harm customers as it lowers the expected return with consequential long-term impact on investability.

8.2.5 YWS considers a number of points from Ofwat's Reply as follows:²⁵¹

resolved in a considered way as "*it has taken 30 years to get to this position and it is hugely expensive to make changes*" (see Exhibit 037).

²⁴⁹ Exhibit 061, Ofwat: 'Reference of the PR19 final determinations: Overview', paragraph 2.25.

²⁵⁰ Exhibit 051, Reply-008, paragraph 5.22.

²⁵¹ Further information on YWS's position on the GOSM can be found in the technical annex: Annex 1.

a) Customer benefit

- 8.2.6 Ofwat's Reply seeks to downplay the tax savings that YWS's structure secures for customers during the next five years. This stands in contrast to the position that Ofwat has taken previously. For instance, at the start of the PR19 process, Ofwat acknowledged that "*there is a **direct financial benefit to customers** from highly geared arrangements. This is because we currently set tax allowances on the basis of a company's actual level of gearing, so customers do benefit from the lower tax costs from highly geared companies.*"²⁵²
- 8.2.7 For the sake of clarity, Table 24 compares the revenues that YWS will collect from customers in respect of tax during AMP7 to the amount that customers would have to pay if YWS had only 60% gearing. It can be seen clearly there is a £32m saving for customers as a result of YWS's forecast capital structure for AMP7.

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
FD tax allowance @ actual gearing	9.2	2.2	1.0	-	-	12.3
Tax allowance @ 60% notional gearing	16.4	9.7	8.8	5.1	4.6	44.6
Customer saving	7.2	7.5	7.8	5.1	4.6	32.3

Table 24: YWS's calculation of PR19 tax allowance at different gearing figures

- 8.2.8 Ofwat is not entitled to ignore this saving on the grounds that tax is a "transfer payment" and as if tax efficiency is wholly unimportant.²⁵³ The CMA will note that elsewhere Ofwat argues the exact opposite on this point in its Reply when it stresses the importance of there being regulatory incentives on companies to minimise business rates.²⁵⁴ Consistency dictates that the contribution that tax savings make to lower customer bills should be welcomed as a customer benefit rather than dismissed as an irrelevance.

²⁵² Exhibit 011, Ofwat: 'Water 2020: consultation on the approach to the cost of debt for PR19' (September 2016), pages 18-19.

²⁵³ Exhibit 051, Reply-008, paragraph 5.23.

²⁵⁴ Exhibit 062, Ofwat: 'Reference of the PR19 final determinations: Response to Northumbrian Water's statement of case', paragraphs 3.51-3.52.

b) Risk to customers

- 8.2.9 Ofwat similarly downplays or ignores the fact that YWS's debt-to RCV ratio is only one element of a securitised financing structure with in-built protections that act in the interests of customers and debt investors with long-term horizons.
- 8.2.10 Annex 13 to this submission describes the key features of YWS's debt platform.²⁵⁵ This paper explains how the covenants in YWS's agreements with lenders, through deliberate and careful design, provide enhanced protections against insolvency and disruption to services relative to the protections typical in conventional corporate financing. These covenants provide, among other things, for:
- (a) a contractual ring-fence that enhances YWS's licence restrictions, including restrictions on the ability to undertake non-regulated business and the acquisition or disposal of assets;
 - (b) certification by directors of compliance with stringent financial tests, reported at six-month intervals for historical and forecast performance;
 - (c) a requirement for YWS to maintain access at all times to cash and other facilities that are capable of providing 12 months of liquidity for operating expenditures and interest payments;
 - (d) mandatory dividend lock-up, requirements to prepare remedial plans, and step-in rights for creditors in the event 'early warning' trigger thresholds on financial ratios and ratings are breached; and
 - (e) automatic standstill periods in the event of default that allow the opportunity for resolution without significant disruption to YWS's activities.
- 8.2.11 These covenants are not obligations that would typically apply to non-securitised companies. All other things being equal, they significantly reduce the risk of the kind of insolvency events that Ofwat claims in its Reply justify the introduction of the GOSM.
- 8.2.12 Accordingly, one has to be very careful not to make simplistic comparisons of companies' gearing levels. In particular, it is quite wrong to conclude that customers served by a company with, say, 75% gearing

²⁵⁵ Annex 13, Linklaters LLP: 'Regulated Debt Platform' paper (March 2020). The debt platform has been in place since 2009 and provides a common set of terms that is applicable to debt raised to fund YWS.

are automatically exposed to more risk than customers served by a company with, say, 65-70% gearing. In circumstances where the first company has a securitised structure and the second company uses conventional corporate financing, the exact opposite is likely to be true.

8.2.13 YWS notes that Ofwat has explicitly recognised this point in its annual *Monitoring Financial Resilience* reports, as follows: "*The existence of the common terms and security package means that a company with a securitised structure can support a higher level of gearing with limited impact on interest costs than a non-securitised company while maintaining a similar investment grade credit rating.*"²⁵⁶

8.2.14 The CMA will also be able to obtain independent confirmation that securitisation arrangements reduce the risk of financial distress from the rating agencies. As one point of reference, Moody's issued a paper in October 2018 entitled *Covenanted financing structures help mitigate growing risks*. The paper states that:

- (a) "all of the highly covenanted financing arrangements in the regulated utilities space ... aim to reduce the probability of default";
- (b) covenanted structures "typically enhance credit quality by around one to two notches"; and
- (c) "Ofwat voiced concerns that companies with higher levels of gearing may have lower financial resilience as the "impact of cost shocks or poor performance is magnified to a smaller equity base". However, the restrictions imposed on the companies and additional creditor rights associated with highly covenanted financial structures mitigate a range of risks, including those associated with higher leverage".

8.2.15 The report also notes that "*higher leveraged companies have not underperformed peers*".

8.2.16 As noted above, Moody's score the benefits of the covenant package as the equivalent of a 1 to 2 notch increase in credit quality. All other things being equal, this means that YWS can sustain a debt-to-RCV ratio that is higher than a non-securitised company with no attendant additional risk of insolvency.

²⁵⁶ Exhibit 063, Ofwat: 'Monitoring financial resilience' (November 2016), page 28.

8.2.17 Table 25 below compares the ratings of two companies with non-securitised structures with the ratings of the two PR19 appellants that are caught by Ofwat's GOSM.

	Gearing, March 2019	Ratings, current
Anglian	79%	Baa1*/A-*/A-
Northumbrian	67%	Baa1*/BBB+*/NR
Wessex	65%	Baa1/BBB/BBB
Yorkshire	76%	Baa2*/A-*/A*

Table 25: Comparison of company gearing ratios and ratings from Moody's, S&P and Fitch. * indicates that rating has a negative outlook, is on rating watch negative, or is under review.

8.2.18 Table 25 above indicates that the rating agencies have, on the whole, judged that the higher-g geared, securitised companies are no more likely to default on their debts than the lower-g geared, non-securitised companies.

8.2.19 Ofwat is, therefore, quite mistaken to now be pursuing a secondary line of argument which purports to show that lower returns can be rationalised as compensation for customers for higher risk. An arbitrarily calibrated GOSM is completely the wrong fix for a problem that does not in fact exist.

c) Concluding observations

8.2.20 YWS would like to conclude by emphasising to the CMA the frustration that it feels over Ofwat's constantly shifting stance on gearing and benefit sharing.

8.2.21 At the start of PR19, Ofwat was very clear in its policy:²⁵⁷

"Departing from the notional capital structure to set a different cost of capital for highly geared companies would mean that should some of the risk associated with these structures materialise, then customers may bear these costs. We do not consider that it is reasonable for customers to bear risks for investor choices around financing structure. Our notional

²⁵⁷ Exhibit 011, Ofwat: 'Water 2020: consultation on the approach to the cost of debt for PR19' (September 2016).

structure approach ensures that customers of securitised companies do not pay more than conventionally financed companies. We therefore propose to continue to use a notional capital structure and notional efficient cost of debt approach for all companies, including those with securitised structures.

There is also a question of whether and how customers should share in the benefits where companies adopt highly geared capital structures. On the one hand, if equity holders bear all the risk arising from the choice of capital structure then it is reasonable for them to be rewarded for taking that risk. Yet, the question remains, what benefit do they deliver to customers and do they expose customers to additional risk? We now consider whether or not Ofwat should introduce mandatory benefit sharing arrangements for securitised structures to ensure that customers should benefit from these arrangements.

Firstly, we note there is a direct financial benefit to customers from highly geared arrangements. This is because we currently set tax allowances on the basis of a company's actual level of gearing, so customers do benefit from the lower tax costs from highly geared companies. There may also be indirect benefits to customers from investors in highly geared structures putting company management under increased scrutiny, promoting more efficient delivery of services by companies and so resulting in lower customer bills.

Secondly, in terms of risks to customers from securitised structures, previous work undertaken by PWC for Ofwat in 2013 found evidence that securitised structures were viable and sustainable over the longer term and did not necessarily present a higher risk for customers. It recommended that a financial monitoring regime be established to ensure that visibility around this risk over time. Ofwat has established its financial monitoring framework to monitor the risks relating to the financial stability and resilience of all companies. Should there be any evidence that securitised companies were less resilient than more traditionally geared companies then we would be able to use the powers available to us to intervene to protect customers.

Thirdly, we note that securitised structures may limit a company's flexibility, placing them into restrictive covenants. As the market and regulation changes, for example with the transition from RPI to CPI and the opening of wholesale markets, the inflexibility of

securitised structures could become a hurdle. However, we have been clear that the risk and consequences of adopting these structures remains with the companies and their investors.

We also note that there are costs associated with establishing and maintaining securitised structures. Under our notional cost of debt approach, these costs are borne by equity holders. A benefit sharing approach might imply that these costs should be shared with customers

We do not propose to introduce a separate approach or specific benefits sharing arrangement for securitised structures. It could confuse the responsibility for bearing the costs associated with the securitised arrangements, which we consider are to be borne by the equity holders of these structures. It would also mean that customer benefits would be dependent on company specific financing arrangements. It would also introduce additional complexity into setting the cost of capital. We consider that customers are protected from the risks of these arrangements by our notional financing approach and our financial monitoring framework.”

8.2.22 In its written submissions and oral presentations to the CMA, Ofwat has taken contradictory stances on most of the above matters, in particular by:

- (a) downplaying the value of tax savings that higher gearing generates;
- (b) omitting to make any reference to the *“indirect benefits to customers from investors in highly geared structures putting company management under increased scrutiny, promoting more efficient delivery of services by companies and so resulting in lower customer bills”*;
- (c) asserting without evidence, that it is wrong to think that securitised structures are *“viable and sustainable over the longer term and do not necessarily present a higher risk for customers”*; and
- (d) not acknowledging the confusion of responsibilities and complexity that its proposed mechanism creates.

8.2.23 Ofwat has also given the CMA one take on the purpose of the sharing mechanism – i.e. to ensure there is a sharing of the profits that companies supposedly make when they take the cost of equity but pay

the cost of debt on borrowing in excess of 65% gearing – only to back away completely from defending this indefensible position.

8.2.24 YWS submits to the CMA that Ofwat's lines in its Reference and in its Reply are so muddled, so lacking in evidential support and so contrived that the CMA should give them very short shrift.

9. Financeability

Overview

This section addresses the assertions Ofwat has made regarding its approach to ensuring that its FD for YWS will be financeable.

YWS provides evidenced-based challenges to Ofwat's views on the application of its statutory duties and its assertion that the notionally efficient firm is financeable.

In respect of Ofwat's statutory duties, YWS reiterates that financeability is assessed with consideration to both the ability to earn a return at least equal to the cost of capital and the ability to raise finance on reasonable terms.

YWS highlights Ofwat's failure to allow investors the opportunity to earn an appropriate return when considering the points raised in earlier sections of this Response regarding the level of allowed expenditures, performance levels that can be achieved, an incentive regime skewed to penalties and a rate of return calculated in a manner that does not reflect these risks.

YWS points out Ofwat's selective approach that cherry-picks ratings methodologies to support its own financeability assessment, especially given YWS's previously-raised concerns over Ofwat's decision to accelerate future revenues into AMP7, and Ofwat's lack of acknowledgement of the real-world impact of its actions.

YWS agrees that a simple test is not possible but believes strongly that a rounded view must be taken of ratings agencies assessments, in line with their individual methodologies, to reach appropriate conclusions on financeability and the ability for a notionally efficient firm to maintain a rating two notches above investment grade.

YWS believes there is an opportunity for the CMA to construct a better set of price controls which, in-the-round, will provide the necessary assurance that the financeability duty has been met by its redetermination.

Introduction

9.1.1 As made clear in paragraph 2.17.2 above and paragraphs 46 and 260 of YWS's SoC, it has hitherto been common ground between Ofwat and companies that, in practice, Ofwat's financing duty requires that:²⁵⁸

- (a) a notionally efficient firm should be able to earn profits in line with its cost of capital; and
- (b) the efficient firm's cash flows should enable it to raise finance on reasonable terms, including by maintaining an investment-grade credit rating.

9.1.2 Ofwat has universally held this position over time and indeed, much the same formulation has been adopted by the CMA in previous cases. As set out in paragraph 2.17 of this Response, in a 2011 paper that Ofwat quotes in its Reply, Ofwat states that:²⁵⁹

"Consistent with the approach of other regulators, we interpret this duty as having two strands.

- (a) *An efficiently financed and operated company should be able to provide regulated services pursuant to the WIA91 and earn a return at least equal to its cost of capital.*
- (b) *Price limits must secure that efficient companies can be financeable, such that a company's revenues, profits and cash flows are sufficient to allow it to raise finance on reasonable terms."*

9.1.3 Near-identical wording appears in several of Ofwat's price review methodology and decision documents.²⁶⁰ The CMA has also previously taken a similar position.²⁶¹

"A return below the cost of capital would not be consistent with the duty contained in section 2(2A)(c) of the WIA 1991 to secure that the company can finance the proper carrying out of its functions. [...]"

²⁵⁸ YWS, SoC, paragraphs 46 and 260.

²⁵⁹ Exhibit 019, Ofwat: 'Financeability and financing the asset base' (2011); Exhibit 020, Ofwat: 'Setting price limits for 2010-15 – framework and approach' (2008), paragraph 16.

²⁶⁰ See, for example, Exhibit 020, Ofwat: 'Setting price limits for 2010-15 – framework and approach' (2008).

²⁶¹ Exhibit 010 (SoC), Competition Commission: 'Bristol Water plc redetermination report' (2010), paragraph 9.2.

We considered that ‘finance’ (as referred to in section 2(2A)(c)) is to be realistically construed and therefore includes both equity and debt and that we were not required to make any particular assumption about the balance between equity and debt. Our overall concern was to ensure that, at the gearing assumed in the WACC, our financial projections were consistent with Bristol Water retaining an investment grade credit rating.”

9.1.4 As such, there can be no doubt that the analysis of both limbs in Ofwat’s financing duty will be an important part of the CMA’s task in the next six months.²⁶²

9.1.5 The fact that Ofwat is now seeking to argue the contrary is, in and of itself, a stark admission that its consideration of these matters in PR19 fell far short of the requirements of public law and Ofwat’s financeability duty and is a further substantial contributor to Ofwat’s failure adequately to balance its relevant statutory obligations in relation to YWS’s FD.²⁶³

a) Expected rate of return

9.1.6 YWS’s decision to reject Ofwat’s FD and seek a reference to the CMA was driven by Ofwat’s failure to assemble a price control package which, looked at in the round, offered investors a reasonable chance of earning a profit in line with the cost of capital. Multiple features of Ofwat’s FD contributed to a likely shortfall in return:

- (a) under-estimation of the expenditure that an efficient company will incur when providing services to customers between 2020/21 and 2024/25;
- (b) overstatement of the performance levels that an efficient company can reasonably expect to achieve;
- (c) a financial incentive regime that was skewed towards penalty payments;
- (d) a rate of return on the RCV that fell short of the weighted average cost of debt and cost of equity; and
- (e) inadequate interest cover and an ensuing financeability problem.

9.1.7 Ofwat’s failings in the above areas were laid out in detail in YWS’s SoC. In its Reply, Ofwat has attempted to rationalise the decisions that it took.

²⁶² See also Section 11: The impact of the FD.

²⁶³ Further information on YWS’s position on financeability can be found in the technical annex: Annex 1.

YWS has explained in this submission why Ofwat's points of response are inadequate, incomplete and, on occasion, misleading.

- 9.1.8 It now falls to the CMA to assemble a price control package that satisfies all of Ofwat's statutory duties, including the duty to secure that YWS is able to finance its activities. This will require the CMA members to bring workstreams on costs, Performance Commitments, incentive design and financial issues together and look holistically at the overall task that YWS is being asked to take on in AMP7 alongside the overall level of return that an efficient company might realistically expect to take from the five-year period.
- 9.1.9 YWS recognises that this will be challenging for the CMA and that the CMA members will have to exercise a degree of expert judgment as to what constitutes an acceptable overall package. YWS's request of the CMA is simply that it should ask, and consciously keep returning, to the question of whether the piece-by-piece decisions it makes come together into a coherent whole such that it is able to give investors a 'fair bet'. In YWS's assessment, it is only by stepping back and contemplating the price control in the round that the CMA will come to appropriately balanced answers to the overarching question that YWS is asking of the CMA in its request for a determination.
- 9.1.10 This important point of principle is developed further in section 12.

b) Cashflows, interest cover, ratings, etc.

9.2 Ofwat was entitled to depart from the opinions of rating agencies when assessing the impact its FD would have on the efficient firm's ability to raise debt finance. [Reply-008/4.38-4.64, 4.107, 4.11]

- 9.2.1 Turning to the second limb of Ofwat's financing duty, one of YWS's chief complaints about PR19 was that when Ofwat belatedly recognised the downward pressure that the FD was putting on cash flows, interest cover, and rating agencies, its response fell far short of providing any assurance that YWS would be able to access the debt that it needs in the 2020-25 period.
- 9.2.2 Ofwat's Reply makes it clear why this was the case:²⁶⁴

(a) *"Our financing duty does not require us to ... use specific rating agency methodologies in our determinations ..."*

²⁶⁴ Exhibit 051, Reply-008, paragraphs 4.55, 4.64, 4.58 and 4.107 respectively.

- (b) *"... strict adherence to credit rating agency methodology would result in the cost to customer being influenced by credit rating agencies ..."*
- (c) *"Moody's in May 2018 and Fitch in July 2018 amended their guidance for gearing and adjusted interest cover following a downgrade to the view of the stability and predictability of the regulatory regime following publication of our 'Putting the sector in balance position consultation' ... we do not agree that the 'Putting the sector in balance position statement' impacts the stability and predictability of the regulatory regime ..."*
- (d) *"The disputing companies argue that the use of financial levers (PAYG and RCV run-off rates) is not an appropriate tool to address a financeability constraint as certain rating agencies do not recognise the income in the calculation of financial ratios ... We disagree ... Revenue advancement through PAYG or RCV run-off is an appropriate approach ..."*

9.2.3 YWS is extremely troubled that Ofwat has adopted a mindset that permits it to ignore the views of rating agencies when it does not like what the rating agencies have to say. The opinions of rating agencies matter – and, hence, are an important input into the regulatory process – because debt investors give substantial weight to the ratings that the agencies assign. This means that when the rating agencies conclude that Ofwat's FD reduces companies' credit quality, lower ratings will have unavoidable, real-world consequences in terms of companies' access to new borrowing and the cost of new debt.

9.2.4 YWS submits that the CMA has to accept ratings methodologies as they are (rather than as Ofwat wishes they might be). YWS agrees with Ofwat that it is not possible to distil these methodologies into a single quantitative pass/fail metric, but considers that the CMA will obtain a good overall feel for the impacts that its determinations will have by referring to the Moody's, Fitch and S&P guidance for the thresholds on adjusted interest cover and FFO to debt ratios that companies are expected to maintain in order to be eligible for a Baa1/BBB+ rating, as set out in Table 26.

	Moody's	Fitch	S&P
Adjusted interest cover	> 1.5x	> 1.5x	-
FFO to debt	-	-	9%

Table 26: Threshold values for a Baa1/BBB+ rating.

- 9.2.5 In the event that the CMA's financial modelling for YWS for the 2020-25 period indicates that projected trajectory for one or both of these ratios looks to be incompatible with a Baa1/BBB+ rating, it is incumbent on the CMA to fix the problematic ratio(s). This is for two reasons:
- (a) first, such modelling would reveal an internal incoherence in the cost of capital calculation, in that the projected ratios would not be consistent with the assumptions that the CMA is making about the cost of new debt (see Section 7); and
 - (b) second, and more fundamentally, the modelling would imply that the second limb of Ofwat's financing duty was not satisfied.
- 9.2.6 YWS reiterates its view that the only reasonable course of action at this point would be for the CMA to revise the level of the allowed return to the level that is necessary to bring a proper alignment between the cost of equity, cost of debt and a Baa1/BBB+ rating. Contrary to Ofwat's view, the financial modelling can and should act as a 'sanity check' on the detailed technical work that the CMA has done in its cost of capital workflow.
- 9.2.7 YWS's position on the other interventions in Ofwat's 'long list' of conceivable remedies is as follows:
- (a) pay-as-you-go advancement does not offer any kind of solution to weak interest cover. As explained in the SoC, two of the three rating agencies have been clear that they will "look through" such adjustments. This means that any attempt that the CMA might make to move money from one AMP to another AMP via either the pay-as-you-go ratio or RCV run-off will do nothing to improve credit quality;
 - (b) adjusting the gearing and/or the percentage of index-linked debt in Ofwat's notional balance sheet is tantamount to just assuming the problem that companies face away. The CMA will note, in particular, that Ofwat's notional debt-to-RCV already sits below

the gearing of all of the equity-owned companies in the sector. A reduction to a figure of below 60% is untenable; and

- (c) YWS would like to understand more clearly Ofwat's alternative approach regarding the speed of transition to a more CPIH-indexed RCV with the same cash flow impact as revenue advancement. This would allow YWS to be able to consider it as part of any package of interventions that includes the award of a fair rate of return.

9.3 Ofwat suggests efficient companies with gearing around the notional level can maintain credit ratings two notches above the minimum investment grade (Baa1/BBB+). [Reply-005/6.26; Reply-008/4.28-4.30]

- 9.3.1 Ofwat seeks in its Reply to use the recent experiences of a select group of companies to downplay YWS's concerns about ongoing financeability. In particular, Ofwat states that: "*companies with capital structures that are similar to our notional level are capable of maintaining a credit rating that is at least two notches above the minimum of the investment grade, which is consistent with the view that we expressed in our final determinations. This is supported by many water companies retaining credit ratings at this level with at least one credit rating agency.*"²⁶⁵
- 9.3.2 As discussed earlier in paragraph 2.18, this is an example of Ofwat conflating actual and notional financeability. As Ofwat themselves have noted, ratings are based on a number of factors, not just gearing, which means that it is not possible for Ofwat to simplistically assume that just because companies with actual gearing close to the notional level have an actual rating of at least Baa1 / BBB+, then the notional company must also have a rating of Baa1 / BBB+ just because it has a similar level of gearing.
- 9.3.3 Based on the evidence provided by Ofwat,²⁶⁶ it would appear Ofwat's statement is referring to SVT, UU and Dwr Cymru. However these three examples all fail to provide the kind of reassurance about financeability that Ofwat claims. Dwr Cymru, begins AMP7 with gearing of 56% and is expected to end AMP7 with gearing below 55%. It is in no sense akin to Ofwat's notional company. Similarly, paragraphs 7.6.1 to 7.6.11 of this Response explained that the other two companies, Severn Trent and United Utilities, have costs of debt which are well below the industry

²⁶⁵ Exhibit 051, Reply-008, paragraph 4.28.

²⁶⁶ Exhibit 051, Reply-008, Table 4.2; and Exhibit 003 (SoC), CCIP, Tables 7.1 and 7.2.

average. This translates to far stronger interest cover than a company with a notional balance sheet and an industry-average cost of debt can hope to exhibit, which again makes them atypical vis-à-vis the notional company.

Conclusion

- 9.3.4 It now falls to the CMA to construct a set of price controls which properly discharges Ofwat's duty to secure that the licensed business is able to finance its activities. In order to do so, an efficient company should meet the two-limbed test set out at paragraph 9.1.2. However, Ofwat has manifestly failed to provide any credible justification that this duty has been met, both in its Reply and its previous submissions.
- 9.3.5 In relation to the requirement to raise finance in the debt capital markets on reasonable terms, for the reasons explained in YWS's SoC at paragraphs 263-273 and above at paragraphs 9.2.1 et seq., Ofwat's FD fell far short of providing assurance that an efficient company will be able to access the debt that it needs in the 2020-25 period on reasonable terms.
- 9.3.6 Furthermore, in relation to the other limb, an investor looking at Ofwat's PR19 FD as a package could not reasonably conclude that the notionally efficient firm is a viable investment opportunity, or that it in any way resembles a 'fair bet' i.e. a fair likelihood of earning a rate of return that is commensurate with returns that are on offer elsewhere (i.e. the opportunity cost of capital).²⁶⁷ To the contrary, investors would expect to incur a financial loss as a result of likely over-spending, penalties for shortfalls in performance, the inadequate return on the RCV and/or the costs of reinstating an acceptable credit rating.
- 9.3.7 It is not appropriate to use the recent experiences of a small and select group of unrepresentative companies to downplay YWS's serious concerns regarding its ongoing financeability. A truly 'investable' proposition will require that the CMA to consider Ofwat's price control as a package and guided by evidence to determine whether both limbs of the financing duty have been met.

²⁶⁷ YWS, SoC, paragraphs 277-281.

10. WRFIM

Overview

This section concerns the inclusion of a £44m WRFIM adjustment claim which originated from a data input error in a PR14 submission over five years ago. This error was identified when YWS completed its Annual Performance Report for 2015-16.

Since discovery of the error, YWS has sought a resolution in an open and transparent manner. After highlighting the issue to Ofwat, YWS followed Ofwat's explicit instructions to adjust its annual reporting in the intervening period. YWS reasonably understood from Ofwat that this error would be corrected as part of PR19.

Ofwat has provided further analysis to support its view on the impact of the original error which YWS does not believe is correct or is unable to confirm. Ofwat continues to assert that the error was not unambiguous and that to allow the adjustment would negate the effect of WRFIM to incentivise companies to forecast accurately. YWS disputes these points.

Ofwat states that YWS has not provided sufficient evidence to support its claim and, furthermore, denies there was any discussion or agreement during 2015-20 as to the impact of the error and how it would affect the WRFIM. YWS has provided further information to assist the CMA in its review but strongly rejects Ofwat's assertion on the lack of engagement during 2015-20. The latter point implies that YWS has made false or misleading statements in its SoC (and previously) and it invites Ofwat to withdraw this comment.

YWS supports Ofwat's objective of improved forecasting accuracy but does not believe that this is relevant in this instance given the nature of the original error.

Introduction

- 10.1.1 In SoC paragraphs 204-215, YWS set out its reasons for including a £44 million Wholesale Revenue Forecasting Incentive Mechanism (**WRFIM**) adjustment claim.
- 10.1.2 YWS described how it uncovered a data input error made during PR14 while it was preparing its 2015-16 Annual Performance Report. As a result of subsequent discussions with Ofwat, YWS included an amendment to exclude certain income and include a note explaining why the performance in the 2015-16 APR was incorrect. YWS continued to follow Ofwat's advice in subsequent years.
- 10.1.3 YWS demonstrated in SoC, paragraphs 210-214 that the data input error was clearly unambiguous, and this was confirmed in a report prepared by Mark Ballamy, an independent forensic accountancy expert, in his report included as Annex 11 (SoC).²⁶⁸ Further, allowing the WRFIM adjustment for a simple data input error does not negate its function as a mechanism to incentivise accurate forecasting.

10.2 Given this mechanism aims to incentive accurate forecasts we consider the company should have submitted evidence of its forecasts with data made available at the time of the submission of PR14 business plans and not simply with outturn values for us to be able to compare forecasts with outturn as required by the mechanism. [Reply-005/7.6]

- 10.2.1 YWS has fully cooperated with Ofwat throughout this process and it has responded with all of the information which Ofwat has requested during the last four years. It is unclear to YWS what further information could be required by Ofwat and if this had been specified then YWS would have provided it where possible. YWS provided a simple version (showing just the first year adjustment) of the restated W9 table at SoC, paragraph 205 (Table 10) (having been restated from the original W9 table submitted at PR14).²⁶⁹ Note that all of the information provided in the restated W9 has previously been supplied to Ofwat.

10.3 YWS provides Appendix 3 to Annex 11 (SoC) which are intended to evidence the disaggregated value of connection charges included in its 2012-13 statutory accounts but there is no evidence that its forecasts for 2015-20 were based on the income it received in 2012-13. We would expect a company to prepare forecasts for connection

²⁶⁸ Annex 11 (SoC), Mark Ballamy: WRFIM paper (April 2020).

²⁶⁹ See Annex 9 for the full original and restated W9 tables.

charges based on the expected level of future developer activity in its area which may be different from the past. [Reply-005/7.9]

10.3.1 For the avoidance of doubt, the forecasts for 2015-20 were based on the 2012-13 income. The value of £5.612m in the 2012-13 accounts has been rolled forward into the 2015-20 forecast.

10.3.2 As stated in YWS's response to Ofwat in November 2019 the costs were incorrectly categorised and therefore YWS did not apply any forecast growth across the revenue control period 2015-20.²⁷⁰

10.4 Reading the documents the company has provided to the CMA shows that the impact of the error and how to consider it in the WRFIM was not discussed or agreed at any point during 2015-20. [Reply-005/7.10]

10.4.1 YWS has always maintained an open and transparent relationship with Ofwat on this matter. It discussed the impact of the WRFIM with Ofwat in around May 2016 after first noticing the data error within its PR14 submissions to Ofwat. YWS and Ofwat had a discussion concerning the impact of the error on table 2I and they also discussed the fact that this table had been developed by Ofwat to feed into the WRFIM reconciliation model. These discussions took place (as noted in SoC paragraph 207, by telephone) in around May 2016 between [...] from YWS and (YWS believes) [...] from Ofwat. As highlighted in Annex 11 (SoC), Mark Ballamy's report paragraph 4.3.19, this is supported by YWS's 2015-16 APR reporting, which included a note on the data input error, stating among other things that the variance would "*be taken into account through the WRFIM when tariffs are being set in 2017/18*".²⁷¹ The narrative was based on the discussions with Ofwat described above. YWS therefore completely rejects Ofwat's unfounded assertion that these discussions did not take place. This is an entirely unwarranted slur on the integrity of YWS's relevant staff and YWS would ask Ofwat to withdraw this comment.

10.4.2 The conversation in 2015-16 led to Ofwat developing the reporting adjustment that YWS followed. This adjusted method was used by Ofwat within its subsequent Monitoring Financial Resilience reports (which show the performance against wholesale revenues), which clearly

²⁷⁰ See Exhibit 064, YWS: 'PR19 query YKY-FD-PD-006 – final draft response' for more details.

²⁷¹ See Exhibit 065, YWS: Annual Performance Report 2015/16', pages 24 and 25. Available at: <https://www.yorkshirewater.com/media/1831/apr-yw-march-2016-final-06092016.pdf> (last accessed 27 May 2020).

indicates that Ofwat was aware that the adjustment would feed into the WRFIM model.²⁷²

10.5 What Yorkshire Water has failed to take into account is that as part of the PR14 Totex allowance, Ofwat made an allowance for third party costs outside the Totex menu. Ofwat calculated these costs directly from the forecast third party income, by multiplying the company's total income forecast by 114%. If Yorkshire Water had reported £22 million as connection charges instead of third party costs its PR14 Totex allowance would have been lower by £25 million. This in turn would have reduced the 2019-20 closing RCV by £10 million. Our calculations also show that if Yorkshire Water had set out its business plan as described above the amount of revenue allowed for the calculation of bills would have increased by £27 million (not the £44 million it claimed) due to:

£16 million – PAYG revenue reduction due to the lower Totex allowance;

£2 million reduced runoff and lower depreciation on a lower RCV

+£22 million increase due to taking off a lower third party income from revenues; and

A further +£22 million grants and contributions income rather than third party income.

These changes would have resulted in different starting revenue and K factors than Ofwat made at the PR14 final determination. [Reply-005/7.14]

10.5.1 YWS has assessed the impact of the data error on the PR14 Totex allowance and has found that the allowance would not have been impacted by a correction of the error.

²⁷² Note that the original 2015/16 Monitoring Financial Resilience report published by Ofwat included the adjustment – see Exhibit 063, Ofwat: 'Monitoring financial resilience' (November 2016). Ofwat then updated the report, and this amended version mistakenly included the original unadjusted value – see Exhibit 066.1, Ofwat: 'Monitoring financial resilience' (November 2016, updated December 2016). YWS raised this issue with Ofwat and asked that Ofwat correct the updated 2015/16 Monitoring Financial Resilience report. Ofwat did not re-issue the correction to the 2015/16 Monitoring Financial Resilience report, but instead it updated the 2015/16 value within the 2016/17 Monitoring Financial Resilience report to include the adjustment – see Exhibit 066.2, Ofwat: 'Monitoring financial resilience' (November 2016, updated May 2017). See SoC Annex 11, paragraph 4.3.26 et seq. for further details.

10.5.2 YWS believes there are some corrections to the methodology that Ofwat has implied it would have used were it not for the initial error:

- (a) Ofwat appears to have overstated the percentage applied to the income from other sources to calculate the Totex menu adjustment. YWS understands that Ofwat made the Totex menu adjustment based on 93% of the total income from other sources and not the 114% which Ofwat quoted, as this only refers to the third-party income. The correction of the percentage results in a reduction of £20.5m and not £25m as Ofwat has stated.
- (b) Ofwat appears to have omitted the required Totex menu adjustment to include the impact of the connections charges within the 'costs excluded from the menu'. This should be applied as the costs related to the s45 income are not included within the base cost threshold. YWS confirmed to Ofwat in its November 2019 response that the operating costs of £4.162m per annum had been included in table W9.²⁷³ This gives an additional Totex menu adjustment of £20.8m.
- (c) These two adjustments of -£20.5m and + £20.8m leads YWS to its conclusion that there was no impact to the PR14 Totex allowance. This means that there should be no adjustment to the PAYG or RCV values which were included in the PR14 FD.

10.6 If the company's argument is accepted, it is clear the impact is materially less than the company claims. Maximum exposure is £17 million, compared with £44 million claimed. [Ofwat presentation to the CMA, 20 May 2020, slide 31²⁷⁴]

10.6.1 Ofwat stated in Reply-005 paragraph 7.14, that its calculations show "*if Yorkshire Water had set out its business plan as described above the amount of revenue allowed for the calculation of bills would have increased by £27 million*". It is unclear to YWS what the basis for the stated "*£17 million*" in Ofwat's slides is, unless it is a typo for "*£27 million*".

10.6.2 In any event, YWS believes the comparison Ofwat has made is incorrect. It is comparing values that refer to different impacts and the values are in different price bases.

²⁷³ See Exhibit 064, YWS: 'PR19 query YKY-FD-PD-006 – final draft response' for further details.

²⁷⁴ Exhibit 005, Ofwat: 'Initial presentation in response to water companies' statements of case' (20 May 2020).

10.6.3 As explained in the SoC, paragraph 209, the £44 million impact (which is calculated using the 2017-18 CPIH average) related to:

- (a) the adjustment made by Ofwat to remove the agreed adjustment to table 2I within the FD (£36.7 million); and
- (b) an additional £7.3 million for the anticipated impact of the PR14 blind year true-up, which is yet to be confirmed.

10.6.4 The £27 million figure that Ofwat is quoting (which is calculated using the 2012-13 RPI average) relates just to the impact of the revenue allowance in PR14.

10.7 Given the risk of creating a precedent of a company using an error reported retrospectively to avoid a forecasting penalty, we did not amend the revenue recovered in the WRFIM model to correct for the alleged error in Yorkshire Water's PR14 business plan forecasts. [Reply-005/7.16]

10.7.1 As has been conclusively demonstrated in Mark Ballamy's independent forensic accountancy report, this was a simple data input error. There is a vast difference the data input error in this situation and a forecasting error.

10.8 Ofwat considers that its final determination approach was a pragmatic and reasonable solution to the issues that the alleged error raises. Ofwat used the full revenue reported in the WRFIM calculation so as to retain the power of the forecasting incentive and protect customers from the impacts of the alleged error, because the error and its impacts, was not unambiguous. [Reply-005/7.18]

10.8.1 This is a restatement of Ofwat's position. As demonstrated in SoC, paragraphs 210-212 and in Mark Ballamy's report, the error was unambiguous. As described at SoC paragraphs 213-214, YWS rejects the conclusion that its approach to WRFIM removes the power of the forecasting incentive. YWS supports the need for forecasting accuracy. However, as explained in the SoC, YWS's error is a simple data input error, so allowing a WRFIM adjustment would not have an effect over incentivising forecasts.

11. The impact of the FD

Overview

As a result of the FD, YWS would have to step away from its customer-supported Business Plan and focus on short-term activities. This shift in focus will result in material harm to YWS and its present and future customers. Nothing in Ofwat's responsive submissions has refuted this position.

This Section builds on the overall harm that will be caused if the FD were to stand:

- The final conclusions of the Arup report on the resilience impacts of the FD.
- A case study addressing the impacts of the FD on YWS's water meter replacement programme.
- An analysis on the bill impacts of the FD on YWS's future customers.
- An explanation of the way in which the FD leaves YWS exposed to events that are outside of the company's control (e.g. extreme weather events), and how this creates further pressures and focus on short-term mitigations, as opposed to long-term resilient planning.

The consequences of these risks materialising (and revenues reducing to a significant extent) is that YWS would have no choice other than to further revise its Business Plan – moving it even further away from the well-balanced and customer-supported plan it put forward – to a plan that potentially cuts costs to an even greater extent, pushing even more legitimate costs into PR24.

The FD therefore essentially amounts to asking YWS to “take its chances” that Ofwat's plan will be successfully delivered, and that no event will occur to create additional pressure, in the face of weakened regularity mechanisms to manage that uncertainty.

The YWS Board was unwilling to take this risk and had no choice but to request a redetermination by the CMA.

Introduction

- 11.1.1 As explained in the SoC (paragraph 283) and throughout this Response, the flaws in the FD combine to mean that YWS has not been allowed the efficient costs necessary to deliver its Business Plan, and faces a downside skew in its expected risk position when considered at an overall package level. As a result, YWS would have to step away from its customer-supported Business Plan, by reducing its programme of capital investment and diverting its resources and focus to the management of its penalty exposure.
- 11.1.2 YWS relies upon and repeats the position set out in the SoC (at paragraphs 285 et seq.) on the material harm to YWS and its present and future customers that would result from this shift in focus. This includes: the erosion of YWS's long-term resilience; an increased requirement for suboptimal investment decisions, burdening future generations with the cost of capital investment that should be made today; the need to focus on less environmentally appropriate solutions to meet YWS's WINEP obligations; and the stifling of YWS's innovative flood-defence scheme in Hull and Haltemprice.
- 11.1.3 Nothing in Ofwat's submissions has refuted this (in fact, as explained below, Ofwat has not responded at all to YWS's submissions on the erosion of its resilience).
- 11.1.4 In this Section of the Response, YWS provides the following supplementary information on the impacts of the FD:
- (a) The final conclusions of the Arup report on the resilience impacts of the FD (referred to in the SoC at paragraph 294), which were only preliminary when the SoC was submitted.
 - (b) A case study addressing the impacts of the FD on YWS's water meter replacement programme.
 - (c) An analysis of the bill impacts of the FD on YWS's future customers.
 - (d) An explanation of the adverse effects of the FD on YWS's financial headroom.

11.1.5 YWS has also annexed a case study on its WINEP programme to this Response, which addresses the detrimental effect that the FD would have in this area.²⁷⁵

11.2 Third-party submissions on impacts of the FD

11.2.1 Before turning to this supplementary information, YWS notes that its position on harm has been fully endorsed by numerous independent third parties in their submissions to the CMA. The parties in question are eminently well placed to comment in this area and YWS requests that the CMA give due weight to their views. Pertinent quotes are set out below.

11.2.2 City of Bradford Council:

"I therefore share YW's concerns that the overall approach to determination will force a focus on short term performance at the expense of long term investment and resilience for future generations and that it will prioritise solutions that deliver short term operational outcomes, even where this has a clear negative impact on the environment. ...

YW are key and trusted partners both here in the Bradford District and across Yorkshire. They perform well on key measures and their plans have the support of customers. In the interests of our long-term sustainability and resilience, our young and growing population and our efforts to tackle inequalities I would ask that you support the call for a redetermination and take YW up on their offer to engage."²⁷⁶

11.2.3 Don Catchment Rivers Trust:

"Short-termism inhibits innovation, yet this is what is required if we want promising approaches like Nature-based Solutions and catchment-scale thinking to be adopted alongside traditional hard engineering and decision making approaches. The benefits that Nature-based Solutions could offer in terms of energy savings, habitat improvements, water quality gains and as blue-green infrastructure are immense. However, YW are now being

²⁷⁵ Annex 19, YWS: WINEP Case Study.

²⁷⁶ See Exhibit 067, City of Bradford Council: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ec502a0e90e071e28843688/City_of_Bradford_Council_submission.pdf.

*pushed by Ofwat's final determination towards short term fixes."*²⁷⁷

11.2.4 GIIA:

*"... it is GIIA's belief that Ofwat has not found the correct balance in its 2019 price determinations, placing too great an emphasis on short term affordability to the detriment of longer-term sustainable investment objectives whilst undermining the ability of water companies to deliver the performance improvements and investments their customers have signalled they wish to see. One of the impacts of this approach will be to load even more costs for future essential investment on to consumer bills beyond this 5-year period, which is neither cost efficient or fair in term of intergenerational equity."*²⁷⁸

11.2.5 Aire Rivers Trust:

"We are furthermore concerned that this financial constraints of this determination could result in YWS being unable to continue their successful efforts to work more collaboratively with communities on flood risk management, water resource efficiency and water quality improvements. ...

... the requirements for Phosphorus removal from sewage effluents will, under the proposed regime, lead to an increased use of chemicals with the resultant increased pollution risk from those chemicals and their residues discharged in final effluents, an increase in transport incidence and costs and by promoting investment in hard infrastructure increase the company's embedded carbon requirement. Alternative, approaches, such as integrated catchment management or Biological Nutrient Removal are available that could address this challenge in a potentially more sustainable and financially more effective

²⁷⁷ See Exhibit 068, Don Catchment Rivers Trust: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ec502bae90e071e2a937fff/Don_Catchment_Rivers_Trust_submission.pdf.

²⁷⁸ See Exhibit 069, GIIA: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ebebc8986650c27971c15cf/GIIA_Redacted_.pdf.

manner. The short-termism inherent in the determination militates against even investigating this approach."²⁷⁹

11.2.6 Hull City Council:

"A flood-prone city like Hull requires innovative green solutions to be built into the fabric of the city in order to make the city more resilient and, at the same time, fit within the societal fabric of the city. A reduction in funding would substantially threaten the ability to implement these vitally important and innovative schemes, which draw upon the expertise of many in the LWWP. ...

I remain hugely concerned that Ofwat's decision not to allow a significant amount of the funding Yorkshire Water had planned for the city risks adversely impacting the substantial progress that has been made and that has been planned. ...

*The work with Yorkshire Water on City Water Resilience is central to our plans. We have completed the first phase of this work and the second phase now requires an in-depth analysis of the Water Resilience Framework, supported by LWWP and funded through YWS as it relates to the optimisation of its sewer infrastructure in the broader city-wide context. This work and the LWWP is fundamental to the city achieving its growth ambitions and objectives moving forward."*²⁸⁰

11.2.7 East Riding of Yorkshire Council:

*"The Council believes that full funding of the proposals set out by Yorkshire Water in their business plan and continued collaboration between all Living with Water (LwW) partners is the only possible way to ensure that the East Riding and Hull area becomes more resilient to extreme weather events."*²⁸¹

11.3 The impact of the FD on YWS's resilience

11.3.1 In paragraphs 286-299 of the SoC, YWS explained that one of the key impacts of the FD would be material harm to its resilience, by forcing

²⁷⁹ See Exhibit 070, Aire Rivers Trust: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ec5028986650c2791ec71b2/Aire_Rivers_Trust_submission.pdf.

²⁸⁰ See Exhibit 071, Hull City Council: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ebebca986650c27955a89ba/Hull_City_Council_Redacted.pdf.

²⁸¹ See Exhibit 035, East Riding of Yorkshire Council: Representation to the CMA (May 2020).

YWS away from long-term capital investment towards reactive operational expenditure. It is noteworthy that Ofwat does not address these paragraphs in its Reply, preferring instead to mischaracterise YWS’s position by suggesting that it seeks a blank check to improve resilience, a claim which YWS categorically refutes (see paragraph 2.13.1 above). It may therefore be assumed that Ofwat does not contest that YWS would suffer the harm described and considers this a price worth paying to keep bills as low as possible.

11.3.2 Indeed, Ofwat could not credibly contest that such harm would be unlikely to arise, since this has now been independently verified by Arup. The following paragraphs of this Response explain the process that Arup implemented to reach this conclusion and what this means in practice for the resilience of YWS’s systems.

11.3.3 YWS commissioned Arup to undertake a strategic review of its resilience, in an effort to understand the impact of the FD on this relative to what it would have been had Ofwat accepted its Business Plan. As part of this, Arup updated a review of YWS’s resilience maturity that it had undertaken in 2018, using the same methodology.

11.3.4 Arup’s approach utilised YWS’s resilience framework (as described in the SoC at paragraph 288). This embodies five aspects of resilience: Resistance, Reliability, Redundancy, Response & Recovery, and Reflection, the first four of which are aligned to Ofwat and the Cabinet Office’s four categories of effective infrastructure resilience. It employs ratings from British Standard 65000 to score the maturity of YWS’s internal systems in relation to each of those five aspects, when (notionally) subjected to a range of internal and external shocks and stresses.

11.3.5 For example, in assessing the Reliability of a given system (say, water distribution), there is a six-point scale:

Maturity Score	Level of protection against the shock or stress under consideration
0	None
1	Minimal
2	Minimal, executed consistently over several years
3	In line with industry standards
4	In line with industry standards, executed consistently over several years

5	Long term, considered to be industry best practice
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Table 27: reliability six-point scale.

- 11.3.6 There is a similar six-point scale for the other four aspects of the resilience framework.
- 11.3.7 The key point to note for present purposes is the step change in quality when the score drops below three, indicating that the system is no longer at the industry-standard level of maturity. This statement is also true for Reliability and Redundancy. As regard Response & Recovery, a score beneath three indicates that there is only a generic plan for this in place (though implemented over several years) rather than a specific plan. As regards Reflection, it indicates evidence of previous learning having improved resilience in isolation (though consistently over several years) rather than its informing system-wide improvement.
- 11.3.8 Once the scores have been derived for each of the five aspects, an overall maturity score is ascribed to the system by taking their average. It follows from the foregoing considerations that an overall score of less than three indicates that the system is below the industry-standard level.
- 11.3.9 This framework was well-received by Ofwat in the FD,²⁸² indicating that Ofwat was content with the robustness of the conclusions it produced:
- "YW's business plan does provide high quality evidence of how the company identifies and assesses risks to resilience, including taking a systems-based approach to risk assessment. It also demonstrates good evidence of embedding natural capital approaches to its resilience framework."*²⁸³ [emphasis added]
- 11.3.10 For the purposes of Arup's updated analysis, it assumed that the likelihood of shocks and stresses was constant between 2020 and 2050. Analysis undertaken by YWS indicates that this is a conservative view. In particular, this analysis shows that the likelihood of extreme heat events is expected to rise from around 17% to 48% per annum during that period and the likelihood of extreme rainfall events from 29.5% to 38%.

²⁸² Ofwat did suggest some areas for improvement in linking the maturity assessment to the Business Plan, though this does not concern the robustness of the resilience framework itself.

²⁸³ Exhibit 029 (SoC), Ofwat: 'PR19 final determinations: Yorkshire Water final determination' (December 2019), page 27.

11.3.11 Despite these conservative assumptions, Arup’s conclusions confirm that the FD would cause material harm to YWS’s resilience as compared to the position under the Business Plan:

- (a) The assessment shows that, if YWS accepted the FD, then by 2025 the maturity of four of its system will have dropped below the industry standard as compared to where YWS would have been under the Business Plan: water treatment and drinking water safety; wastewater collection; customer service; and human resource planning and management.
- (b) Assuming that Ofwat’s FD at PR24 is substantively the same as that at PR19, the situation by 2030 is materially worse, as the maturity of four more of YWS’s systems will have dropped below the industry standard: water distribution; wastewater treatment and effluent disposal; sludge treatment and bioresources; and enabling business and support services.
- (c) By extrapolating the trends indicated by the 2025 and 2030 analyses, Arup conclude that, by 2050, eleven of YWS’s sixteen systems are projected to be below industry standard.

11.3.12 The following table sets out some of the direct and indirect impacts on certain of YWS’s systems as highlighted in Arup’s report.²⁸⁴

System	Resilience Quality Impacted	Impact of FD (direct or in-direct impact)²⁸⁵
Water Treatment	Resistance; Reliability; Redundancy	Stretching of asset lives due to reduced base maintenance (direct).
Water Resources	Resistance; Reliability; Redundancy	Removal of Water Treatment Works Recycling schemes to prioritise funding to minimise penalty due to service stretch. Water abstraction levels from the environment will remain the same whilst shocks and stresses increase. (in-direct)
Customer Service &	Resistance; Response & Recovery	Skills shortage and reduced numbers of operational and non-operational staff

²⁸⁴ Annex 08, ARUP: ‘Strategic Resilience Review’ (May 2020).

²⁸⁵ Direct impacts are decisions made by Ofwat in the FD; indirect impacts are decisions made by YWS in delivery planning that are a consequence of both (or either) funding decisions or service shift decision in the FD.

Company Strategy		impacting on service levels, due to reduced funding. (direct)
Water Distribution	Resistance; Reliability; Redundancy	Fix on fail approach for customer meters and deferral of the meter replacement programme, as a result of prioritising expenditure to minimise penalty in UQ Performance Commitments. (in-direct)
Financeability	Resistance and Reliability	Increased risk of facing multiple shocks at the same time without and increased headroom allowance. Greater likelihood of underperformance payments. (direct)

Table 28: impacts of Ofwat’s FD on YWS’s systems.

11.3.13 The key point for the CMA to bear in mind is that Arup’s analysis concerns YWS’s long-term resilience, and thus even a small erosion of YWS’s resilience scores over one five-year period can signal serious consequences for the future. This is illustrated by the significant erosion of YWS’s resilience that is demonstrated by Arup if the trend started by the FD is projected into the future.²⁸⁶

11.3.14 Indeed, Arup’s overall conclusion was as follows:

*" This assessment of the effects of FD19 (and a potential repeat at PR19) on YW’s resilience maturity has shown at a high level that, although the effects can be quite subtle, Ofwat’s determination cuts across its statutory duty of ensuring a resilient water sector. Ongoing societal events are showing the consequences of a definition of efficiency that is so narrow that it excludes any relationship between levels of expenditure and resultant performance (current or future)."*²⁸⁷

11.3.15 YWS endorses this conclusion and would invite the CMA to take into account this robust third-party view on the harm that would arise to YWS if the FD were allowed to stand.

11.4 Case Study – Water Meters

11.4.1 In the paragraph 294 of the SoC, YWS gave a number of examples of how the short-term approach forced upon it by the FD would manifest itself in practice, one of which concerned the effect on its programme of water meter replacement. YWS explained that its historical approach to

²⁸⁶ Annex 08, ARUP: ‘Strategic Resilience Review’ (May 2020), pages 6, 8 and 10.

²⁸⁷ Annex 08, ARUP: ‘Strategic Resilience Review’ (May 2020), page 22.

replacement (as reflected in its Business Plan) was to do so when they became "asset life expired" but that the FD would force it to adopt a policy of "fix on fail". YWS also explained that this would have a number of negative impacts.

- 11.4.2 The following paragraphs are intended to provide the CMA with further details of this issue. As noted above, Ofwat has not contested YWS's position in this regard, and is therefore taken to have accepted that the consequences YWS describes will indeed flow from the FD.
- 11.4.3 YWS has an asset stock of 1,361,877 customer meters and each meter has an asset life of 15 years measured from the date of installation. YWS's historical approach has been to programme the replacement of meters (on a rolling basis) when they reach the end of their asset life. The alternative approach is to replace the meters only when they fail, which is referred to as "fix on fail".
- 11.4.4 Under the programme of replacement that informed its Business Plan, YWS planned to replace 266,000 meters in total during AMP7 as they reached the end of their 15-year asset life. This represents 19.5% of the total asset stock. A further 598,000 were planned to be replaced in AMP8 (43.9% of the total asset stock).
- 11.4.5 However, as explained in paragraph 294 of the SoC, in order to meet the UQ targets for the comparable Performance Commitments in the absence of the funding necessary to do so, YWS has been forced to reconsider the balance in its Business Plan between long-term capital investment and short-term operational expenditure.
- 11.4.6 As part of this, YWS decided to reduce the number of meters to be replaced in AMP7 by 73%. This equates to a reduction of £27m in Capex during AMP7, which YWS could then move to its Opex budget. Thus, the meters in question will only be replaced during AMP7 on a fix or fail basis.
- 11.4.7 However, the replacement of the meters cannot be deferred indefinitely. The meters in question must be reprogrammed for replacement during AMP8, meaning that the total number of meters to be replaced during that period has increased from 598,000 to 792,058. The increase in meter replacements in AMP8 will have an indicative increase in Capex requirement of £27m.
- 11.4.8 Moreover, as meters remain in operation beyond their asset lives, the rate of meter failures (or their automated meter-reading components) will increase, with the following impacts on customers:
- (a) Reduced billing accuracy due to inaccessible consumption data.

- (b) Time and inconvenience associated with allowing a meter reader to enter the property.
- (c) Customer expectations not being met, and levels of service being reduced, through unattainable meter data or manual meter readings.
- (d) Impacts on customer well-being, especially among more vulnerable customer groups. A cold call to read a meter often causes concern, following media coverage of bogus callers.
- (e) The inability to deliver to customers through modern metering the behavioural nudges about reducing water usage needed in the face of climate change and related environmental factors.

11.4.9 In summary, the impact of the FD in this area means that desirable consumer behaviour change may be more difficult to promote, customers may be inconvenienced by failures, and future customers will carry the increased future meter replacement costs in AMP8 (i.e. 2025 to 2030) – costs that would more fairly be borne during the current AMP7 period.

11.4.10 YWS would invite the CMA to consider the third-party submission of Waterwise in this regard, particularly its view on the false economy presented by Ofwat's short-term approach:

"Yorkshire Water has highlighted to Waterwise that it does not believe it has sufficient funding in the final determination to meet its water mains asset health target, and also that it will need to move from the existing approach of replacing water meters when they reach the end of their asset life to a new approach of replacing them only when they fail. We believe such a shift will negatively impact customer perceptions of water meters at a time when adoption of meters is a key element in driving down leakage and reducing domestic water use – as well as impacting PCC reductions themselves. We were very supportive of Yorkshire Water's PCC reduction target in PR19 - the most ambitious in England and Wales. ...

A final determination that results in reductions in customer bills whilst risking investment in water efficiency and demand management programmes is a false economy. Greater water efficiency actually saves customers money. ...

Research undertaken through Waterwise into water efficiency labelling indicates that reducing water consumption by around

20% could cut UK household water and energy utility bills by £36bn over the next 25 years (£40 per household per year) (see link). It is ironic therefore that a stated commitment by Ofwat in the final determinations to reduce customer bills beyond what was set out in draft determinations may put at risk water efficiency programmes that can deliver savings of a similar magnitude. ...

Ultimately, when water companies have not made sufficient investment in maintaining and improving resilience, it is their customers and the environment that suffer.”²⁸⁸

11.5 Overall impact of deferred expenditure

11.5.1 Meter replacements are just one element of capital expenditure that YWS has been forced to defer by the FD.

11.5.2 YWS has carried out analysis to understand the overall impact of the deferral of expenditure, by modelling the effect on customer bills in AMP8. This analysis is based on the following assumptions:

- (a) That the impact of the transfer between long-term capital investment to short-term operational expenditure that YWS was forced to enact in AMP7 is reversed in AMP 8.
- (b) That any Capex requirement that was identified as part of the Business Plan will be required in the future.

11.5.3 Table 29 below demonstrates that, on the basis of these assumptions, the impact of the FD is that an extra £17 a year is added to customer bills in AMP8.

11.5.4 The table shows two key blocks of cost movement, which are then summarised. The first block shows the impact of reallocating capex to opex in response to Ofwat’s DD (detailed in SoC, paragraph 293), and the second block shows additional adjustments YWS is forced to make as a result of the FD to minimise service impact.

11.5.5 At a high level, the capex represents deferred asset maintenance expenditure and the opex activities commenced in the AMP7 period (due to capex reallocation), which must continue into the next price control period, until capital maintenance expenditure can mitigate the impact of reducing opex in those areas.

²⁸⁸ See Exhibit 072, Waterwise: Representation to the CMA (May 2020). Available at: https://assets.publishing.service.gov.uk/media/5ebec021d3bf7f5d3955036b/Waterwise_Represented.pdf.

		AMP8					
		Yr1	Yr2	Yr3	Yr4	Yr5	Total
Impact of Capex to Opex Transfer	Opex £m	13.84	13.17	13.45	12.90	10.75	64.12
	Capex £m	38.20	36.40	38.49	36.92	30.41	180.42
	Totex £m	52.04	49.57	51.95	49.82	41.16	244.54
Additional Impact of FD	Opex £m	4.44	4.42	4.90	5.41	5.76	24.91
	Capex £m	48.06	58.59	48.75	31.99	18.49	205.89
	Totex £m	52.50	63.01	53.65	37.40	24.25	230.80
Total Impact of FD	Opex £m	18.28	17.59	18.35	18.30	16.51	89.03
	Capex £m	86.26	94.99	87.25	68.91	48.91	386.31
	Totex £m	104.53	112.58	105.60	87.21	65.42	475.34
	Bill Impact £	+17	+17	+17	+17	+17	

Table 29: total impact of the FD on deferred expenditure.

11.6 The reduction of YWS's financial headroom

- 11.6.1 Given the multiple flaws in the FD, it might appear that YWS's decision to reject it would have been a simple one. Ofwat's response to YWS's DD Representations was very limited in the context of the major issues and gaps identified. However, YWS's decision to reject the FD was reached only after a detailed analysis of what a delivery plan constrained by the flawed allowances and targets in the FD would mean in practice. This is of course the basis on which YWS has to run the company during the redetermination process.
- 11.6.2 The conclusion of YWS's analysis was that it would be possible to depart sufficiently from the Business Plan so that, in a limited numerical sense, YWS could not demonstrate automatic failure of the credit metric ratios used as the criteria for financeability on an actual basis. For the avoidance of doubt, this in no way conflicts with YWS's position that Ofwat has mis-identified the notionally efficient firm, thereby making it uninvestable, and has therefore not discharged its duties.
- 11.6.3 This delivery plan position could be reached only as a result of major departures from the Business Plan, creating the extensive harm and intergenerational unfairness identified in Section H of the SoC. Moreover, YWS's confidence in the delivery plan was significantly compromised since it depended entirely on nothing 'going wrong' during AMP7. In other words, while the plan appears 'deliverable' on a narrow set of assumptions, the probability that those assumptions will not be fulfilled – and that, consequently, YWS will face a materially worse downside position than that already implied by the FD – is very high. This, combined with the harm created by departing from the original Plan, was why the YWS Board was unable to accept the FD.

11.6.4 As will no doubt be evident to the CMA, with the onset of the Covid-19 pandemic, something has already 'gone wrong', thus underscoring YWS's concerns.

11.6.5 In reaching its decision, the Board was mindful of the following considerations:

- (a) The impact of ODIs changed significantly between PR14 and PR19. The vast majority of ODIs in PR19 are 'in period' – meaning that revenue is at risk throughout the AMP in question.
- (b) The PR19 penalties are also all now recoverable through revenue, compared to PR14 where penalties were applied to the RCV. While PR14 penalties and rewards were substantially lower, and subject to an overall 'cap' of 3% RoRE, no such protection for customers or the company exists at PR19. A net penalty of 3% RoRE per annum is equivalent to £90m revenue risk, or £450m over the AMP. Of course, as there is no cap on this risk, nor any mitigations for events outside of management control that could affect penalties, theoretically this risk is unlimited.
- (c) The most likely outcome in relation to the Performance Commitment / ODI package (the P50) in the FD was that YWS would face penalties in every year of AMP 7, and that penalty would account for a significant proportion of YWS's available headroom each year, limiting the company's ability to manage unexpected items outside of management control.
- (d) The delivery plan was based on average weather conditions – significant or prolonged adverse conditions such as flooding, or drought were not factored into the most likely penalty position. As noted above, YWS's analysis suggests extreme weather events will become more likely in the coming period.

11.6.6 YWS carried out further analysis that captured the possible impact associated with severe weather, including capturing the penalty impact of weather events by estimating a P90 level. Where possible, the estimates of return rates on events were taken from recent events and therefore excluded the impacts of longer-term factors such as climate change, so this analysis should be considered conservative.

11.6.7 The modes of failure differ across the clean water and wastewater networks. Although the true nature of failure is complex and multifaceted, at a broad level the primary factors are:

- (a) The clean water network responds to extremes in temperature.

- (b) The waste water network responds to extremes and volatility in rainfall.
- 11.6.8 The analysis showed that adverse weather conditions could increase the risk of penalty by £18m in year one and up to £24m in year five over and above that already forecast at a P50 level. This level of penalty removes headroom that should be reserved to deal with unexpected circumstances, not cover penalty payments for situations beyond management control.
- 11.6.9 The analysis of scenarios to estimate the penalty position that YWS will face is crucial, because of the impact on headroom caused by the in-period realisation of penalty and reward. In other words, performance in year one of AMP7 will have a direct impact on revenues collected in year three, and so on through to year two of AMP8.
- 11.6.10 This concern is exacerbated by the fact that all mechanisms to allow companies to recover legitimate costs over and above the allowed costs in AMP7 do not crystallise until AMP8, so the only place where the pressure on revenues and costs can sit in the AMP is on the company's headroom. Moreover, previous protection mechanisms have been weakened and delayed (e.g. Totex sharing rates). The new mechanisms do not allow full recovery of costs – for example, the protection for rates costs only pays out 75% of any overspend despite this being essentially a tax that companies must pay, as set out in paragraph 3.68.3 of this Response.
- 11.6.11 The Board therefore faced a significant decision: accepting the FD essentially meant accepting a significant risk that circumstances beyond management control would lead to a further erosion of headroom and revenues, causing even greater pressures on the actual required costs. To address this and preserve headroom, YWS would be forced to make additional short-term decisions and push further costs into the future.
- 11.6.12 In other words, should the risk materialise and revenues reduce to a significant extent, YWS would have no choice other than to further revise its Business Plan – moving it even further away from the well-balanced and customer-supported Business Plan it put forward – to a plan that potentially would cut costs to an even greater extent, pushing these into PR24.
- 11.6.13 This essentially amounts to asking the company to 'take its chances' that its most likely plan will be successfully delivered, and that no event will occur that will require it to use its headroom to replace lost revenue,

in the face of weakened regulatory mechanisms to manage that uncertainty.

11.6.14 The YWS Board were unwilling to take this risk, and had no choice but to request a redetermination by the CMA.

12. Potential Remedies

Overview

YWS's evidence in these redetermination proceedings has shown that the FD materially underfunds YWS to deliver its Business Plan and causes a significant downside skew in its risk position. YWS has also shown that the notionally efficient firm would not be financeable under the FD.

Ultimately this is due to the flaws in the Ofwat's approach having created two fundamental disconnects: that between costs and outcomes; and that between risk and reward.

This Section addresses ways in which the flaws in the individual building blocks of the FD may be addressed, in an effort to reconnect costs and outcomes, restore the overall balance between risk and reward, and ensure that the notional firm is financeable.

YWS respectfully requests that the CMA adopt an objective, evidence-based approach to its analysis, and ensure that the remedies work together to restore the required balance at a package level.

Introduction

- 12.1.1 YWS's evidence in these redetermination proceedings has conclusively shown that the FD materially underfunds YWS's ability to deliver its Business Plan (either in its original form or with Ofwat's unjustified interventions in the PC/ODI package) and causes a significant downside skew in its risk position. YWS has also shown that the notionally efficient firm would not be financeable under the FD.
- 12.1.2 This is due to the fundamental flaws in Ofwat's approach creating two material problems: a disconnect between the setting of costs and outcomes, and a disconnect between the risk and return that YWS faces.
- 12.1.3 The unavoidable consequence of the FD, if it stands, is that YWS would have to step away from its Business Plan, which was firmly set in the context of YWS's long-term strategy, supported by its customers and stakeholders, and already contained a significant degree of stretch in terms of costs and outcomes. The gap created by Ofwat's interventions is simply too wide to bridge.

- 12.1.4 This would cause material harm to YWS and both its current and future customers. As has been evidenced in this Response, the flaws in the FD result in harm to the resilience of the company and push costs into future AMPs causing intergenerational unfairness. It is necessary to address these flaws, not only in respect to PR19, but also with a view to ensuring similar mistakes do not occur in PR24.
- 12.1.5 YWS is aware that there is a wide range of issues to be considered in the FD, and this section is intended respectfully to suggest to the CMA the potential remedies that YWS believes are required.
- 12.1.6 The ultimate goal of any package of remedies must be to reconnect costs and outcomes and restore the balance between risk and return that is so evidently lacking in the FD. It may be conceptually helpful for the CMA to distinguish the procedural and substantive aspects of this.
- 12.1.7 In relation to **procedural aspects**, in making its redetermination, YWS would encourage the CMA to: (i) examine expected returns and risk based on the totality of the PR19 price control, as well as consider the detail of each individual element of the control (including but not limited to risk analysis of YWS's PC/ODI package); (ii) factor risk and uncertainty analysis into its assessment of financeability and, in particular, investability; and (iii) consider the coherence of the direction and magnitude of changes to returns, risks and capital structure for a notional firm.
- 12.1.8 Focusing on **substantive aspects**, the correct remedy is to ensure that, when one considers the PR19 redetermination in its totality, the return on offer is commensurate with the risk, ensuring that appropriate levels of investment can be attracted in order to deliver the service levels and outcomes YWS's customers want. Whilst the following paragraphs of this Section outline remedies relating to specific aspects of the price control in more detail, at a high level, this requires some combination of: (i) increasing YWS's overall allowed efficient costs; (ii) setting more achievable outcomes targets (i.e. where, based on robust and transparent evidence, it is clear that they reflect the expected performance of an efficient firm, after regional circumstances beyond the control of management have been reflected); and (iii) setting a higher WACC than that proposed by Ofwat.
- 12.1.9 In the following paragraphs, YWS suggests ways in which the flaws in the individual building blocks of the FD may be addressed, in an effort to reconnect costs and outcomes, restore the overall balance between risk and reward, and ensure that the notional firm is financeable.

12.1.10 As the fundamental flaws that have caused YWS to request a redetermination are the disconnect between costs and outcomes and risk and return, i.e. the “in the round” assessment, YWS respectfully requests that the CMA adopt an objective, evidence-based approach to its analysis, and ensure that the remedies work together to restore the required balance at a package level.

Determining the appropriate efficiency benchmark

12.1.11 Ofwat has not justified its choice of benchmark at any stage during the PR19 process (nor did it do so at PR14), yet it has increased the stringency of the benchmark without providing any evidence that the quality of its models has materially improved. Ofwat concedes that its decision late in the process is not based on a revised assessment of the quality of its models, but is based on an arbitrary assessment of the degree of stretch and in isolation from any consideration of performance targets.

12.1.12 YWS has provided evidence that, on an outturn basis, there is a very significant amount of statistical noise in Ofwat’s models, which has a highly material impact on company efficiency scores, their identification as being efficient or otherwise, and their cost allowances. The analysis also demonstrates that the level of statistical noise increases, and the model quality deteriorates, when estimated using forecast data.

12.1.13 In considering the appropriate level at which to set the benchmark, the quality of the models and certainty of results should be taken into account. If there are high levels of uncertainty, or concerns about how reliable statistical predictions for costs are, then evidence and precedent suggest that an average benchmark is appropriate. Such an approach was previously adopted by the CMA at the Bristol Water price control enquiry.

Appropriate application of frontier shift

12.1.14 Any efficiency challenge based on a long-run trend in productivity improvements from comparative sectors must be robustly justified to ensure that the targets are achievable.

12.1.15 Since frontier shift assessment is a forward-looking expectation that is imputed from historical information, there is a higher level of uncertainty involved in its determination than in catch-up efficiency assumptions. Ofwat’s approach suffers from several methodological flaws, has not addressed these uncertainties sufficiently, and has overstated the scope for frontier shift.

12.1.16 Ofwat's frontier shift target of 1.1% p.a. is based on the upper end of the range of 0.6–1.2% p.a. estimated by its consultants, Europe Economics.²⁸⁹ YWS has outlined the limitations of Ofwat's frontier shift assessment,²⁹⁰ which included:

- (a) a misleading approach to defining the range of feasible frontier shift estimates;
- (b) an unjustified focus on the upper end of the range to set the target; and
- (c) the inconsistent application of the frontier shift target to some cost bases.

12.1.17 Moreover, in the FD, Ofwat continues to rely on flawed evidence from KPMG and Europe Economics to indicate that an even-higher scope for productivity improvement is feasible. This gives a false basis of the true potential, which is lower than the 1.1% p.a. target that it set.

12.1.18 Following a more robust methodology - whereby (i) only complete business cycles are considered. and (ii) relevant comparators are aggregated based on Yorkshire Water's outturn cost structure - a Value Added based productivity measure results in frontier shift targets of 0.8% p.a. and 0.75% p.a. for wholesale water and wastewater respectively.²⁹¹

WINEP enhancement expenditure

12.1.19 YWS's p-removal programme is unlike that of the rest of the industry. p-removal obligations can be divided between two major legislative cost drivers: the Water Framework Directive and the Urban Wastewater Treatment Directive.²⁹² Nearly all of YWS's load (97%) on p-removal is driven by UWWTD obligations.²⁹³ This is in contrast to all other

²⁸⁹ Exhibit 073, Europe Economics: 'Real Price Effects and Frontier Shift—Final Assessment and Response to Company Representations' (December 2019), page 79.

²⁹⁰ Annex 09 (SoC), Oxera: 'Issues with Ofwat's frontier shift assessment in PR19'.

²⁹¹ Our approach considers an average of the weighted and unweighted averages. This is consistent with the approach followed in Exhibit 074, Oxera: 'Issues with Ofwat's frontier shift assessment in PR19', prepared for South East Water Ltd (August 2018).

²⁹² Exhibit 008 (SoC), Ofwat: 'Securing cost efficiency technical appendix', page 104.

²⁹³ This includes sites driven by dual obligations, where both UWWTD and WFD drivers are present. The UWWTD driver may or may not have the most stringent consent levels. However, in the remainder of this section we show that there is both statistical and operational evidence to suggest that UWWTD obligations may still be more costly to meet than WFD obligations.

companies, where less than 55% of their load is driven by UWWTD obligations. These matters are explained in further detail in the WINEP case study annexed to this Response.

12.1.20 There are strong operational reasons why UWWTD obligations are more costly to meet than obligations under the WFD. As a result, YWS estimates in its WINEP plan that the unit cost of meeting UWWTD obligations is almost twice as high as that of meeting WFD obligations.²⁹⁴ YWS has also provided statistical evidence to demonstrate that UWWTD obligations are more costly to meet than other legislative drivers.²⁹⁵

12.1.21 Accounting for the differences in costs for the different drivers is vital in determining an appropriate efficient level of expenditure. On behalf of YWS, Oxera has developed models, modifying Ofwat's existing enhancement models, to account for UWWTD drivers. The results are provided in Annex 11. The adapted models have strong explanatory power, robust statistical properties and operationally intuitive magnitudes and signs. Indeed, these models have a smaller level of uncertainty around cost predictions for YWS than Ofwat's models.

12.1.22 As highlighted above, the choice of efficiency benchmark is also important here. Whether the benchmark is appropriate depends on the quality of the model and the underlying data. If the model is poorly specified and the data highly uncertain, the estimated model may not be able to distinguish inefficiency from omitted variables and noise in the data. Thus, a stringent benchmark runs the risk of being unattainable, and a less stringent benchmark may be appropriate.

12.1.23 The models used to set the benchmark in WINEP enhancement areas are highly limited for three reasons:

- (a) the models are estimated based on only 10 observations, which is a very small sample size,²⁹⁶ resulting in a high degree of uncertainty;

²⁹⁴ Where the unit is the length of river improved, which is YWS's preferred measure. Exhibit 066-049 (SoC), YWS: 'Appendix 8g. PR19 WINEP Technical Appendix', Table 3.6, page 45.

²⁹⁵ Annex 11, Oxera: 'Addressing Ofwat's Response to Yorkshire Water Services' Statement of Case' (May 2020).

²⁹⁶ Especially when compared to Ofwat's BOTEX plus models which, for wastewater, have 80 observations.

- (b) due to the limited sample size, the models can only accommodate a limited range of cost drivers,²⁹⁷ meaning that important cost drivers for certain-n companies are likely to be omitted; and
- (c) the models are estimated on forecast data,²⁹⁸ which is subject to a higher degree of uncertainty than outturn data.

12.1.24 Given the significant uncertainty around the modelled cost predictions, Ofwat's models are not of sufficiently high quality to set a stringent benchmark. This is because doing so risks conflating noise in the model with actual inefficiency, resulting in an excessively stringent benchmark.

12.1.25 Similarly, the application of frontier shift is also an important consideration. Most companies already apply a frontier shift challenge to the forecast enhancement costs, so there is a risk that this may be double counted if a frontier shift assumption continues to be applied.

Hull and Haltemprice

12.1.26 In redetermining the cost allowances for YWS, appropriate regard for the unique requirements for Hull and Haltemprice should be included. There is a clear need for the investment, and the proposed approach set out by YWS offers not just an efficient and multi-beneficial outcome for customers in the region, including lower whole-life costs, but a wider blueprint for addressing resilience issues throughout the industry. YWS would also note that governance of the schemes – to ensure adequate prioritisation, optimum design and efficient costs – has additional oversight through the partnership from Hull City Council, East Riding of Yorkshire Council and the Environment Agency.

Industrial Emissions Directive

12.1.27 YWS's suggested remedy for IED compliance costs is an uncertainty mechanism that would allow for cost recovery at the end of AMP7, with an adjustment to the Bioresource RCV, to reflect the actual costs incurred.²⁹⁹ The level of uncertainty is similar to some aspects of WINEP. A similar protection mechanism for the WINEP programme has previously been accepted by Ofwat.

²⁹⁷ Ofwat's WINEP models contain only two cost drivers compared to Ofwat's wastewater BOTEX plus models that have three cost drivers. Triangulated across all models, Ofwat's WINEP models contain just three drivers compared to the ten drivers in wastewater BOTEX plus.

²⁹⁸ In contrast, Ofwat's BOTEX plus models are estimated using historical data.

²⁹⁹ For further detail see Annex 20, YWS: Industrial Emissions Directive Case Study.

Reconnecting costs and outcomes – possible remedies

12.1.28 The solution to the costs-outcomes disconnect is to ensure that YWS is funded at an efficient level to meet its targets.

12.1.29 There are two main options for achieving this:

- (a) the **first option** is to increase YWS's cost allowances so that they are sufficient to cover the additional efficient costs that YWS will incur as it tries to meet its targets; and/or
- (b) the **second option** is to reduce its targets to the levels that are funded by Ofwat's FD cost allowances.

12.1.30 In both cases, it is of course necessary to recognise any regional factors that influence YWS's efficient costs and/or achievability of the targets relative to other companies.

UQ and Leakage Performance Commitments

12.1.31 In relation to the UQ and Leakage Performance Commitments, YWS considers that the first option – increasing cost allowances – is a necessary part of the remedy. YWS's customers supported its plan to deliver improved performance and said that they were willing to pay for it.

12.1.32 The first option is also an enduring solution. This is because it reduces the risk of perpetuating the costs-outcomes disconnect that has emerged during PR19. That is, if Ofwat again sets companies UQ performance targets in PR24 (as seems likely), it will be harder for those companies that have not been properly funded to improve performance in PR19 to deliver UQ performance in PR24 – they will fall behind. It will then be necessary to remedy this 'legacy' costs-outcomes disconnect at PR24, which may be harder and more costly to solve than it is now.

12.1.33 YWS notes that there are regulatory mechanisms in place to mitigate any risks associated with adopting the first option. In particular, properly designed ODIs provide incentives for YWS to deliver the UQ performance that its customers have paid for and, if it fails, to pay penalties instead.

12.1.34 The first option is a sufficient remedy except in the case of Internal Sewer Flooding, where YWS considers that a hybrid remedy involving both options is required.

12.1.35 As set out in paragraph 264 below and in Annex 6 (YWS's Internal Sewer Flooding Case Study), a hybrid remedy is required because it is neither cost efficient nor practicable for YWS to reduce the number of incidents

at the rate required by Ofwat's FD targets. This is because YWS's supply region contains the highest proportion of cellared properties of any supply region in England and Wales. This feature of YWS's supply region poses operational challenges and costs that other companies do not face to the same extent.

12.1.36 Therefore, YWS considers that an appropriate remedy in relation to Internal Sewer Flooding is to both:

- (a) increase its cost allowances – to fund the AMP7 improvement that YWS will deliver; and
- (b) increase the time to improve its performance (by reducing its AMP7 targets) – to recognise the additional operational challenges and costs YWS faces compared to other companies, as a consequence of its regional circumstances.

12.1.37 As part of implementing this hybrid remedy, it would of course be necessary to calibrate the increase in cost allowances and the reduction in AMP7 targets to ensure that costs and outcomes are connected.

Other Performance Commitments

12.1.38 In relation to all of the other Performance Commitments, the same overarching principle also applies: YWS should be funded at an efficient level to meet its targets.

12.1.39 For these, YWS considers that the proportionate remedy is for the CMA to adjust its targets so that they are set at the levels supported by the extensive customer research that underpinned its Business Plan. YWS recognises that the alternative approach, which would involve quantifying the additional efficient costs that YWS would incur to meet all of the remaining Performance Commitments, is unlikely to be feasible (given the time available to the CMA) or proportionate.

Reconnecting costs and outcomes – implementing the remedy

12.1.40 To implement the remedy for the UQ and leakage Performance Commitments, the CMA will need to reach an evidence-based view on (a) the quantum of the additional efficient costs that YWS will incur in order to meet Ofwat's FD targets and (b) the appropriate alternative targets for Internal Sewer Flooding. Point (a) is considered in the paragraphs immediately below, point (b) at paragraph 12.1.44 et seq. below.

12.1.41 To assist the CMA in this task, YWS and its economic advisors have explored several different sources of data and methods for arriving at a

robust evidence-based view on the additional efficient costs that YWS will incur to meet Ofwat's FD targets.

- (a) **Using evidence in YWS's Business Plan.** YWS estimated that it would cost £300m to meet the UQ and Leakage Performance Commitments it proposed in its Business Plan and IAP response. Using the same underlying evidence, YWS has estimated what it would cost to meet the UQ Performance Commitments in Ofwat's FD instead. This analysis points to a figure in the region of £230m.³⁰⁰
- (b) **Using the incremental costs submitted by companies to Ofwat.** Ofwat asked companies to submit their estimates of the incremental costs associated with meeting different levels of performance for the purpose of setting the ODIs. Economic Insight has used this evidence to calculate the difference between what YWS is funded to deliver (the performance of the benchmark companies) and what it would cost to meet the UQ and Leakage Performance Commitments in Ofwat's FD instead. This analysis points to a figure in the region of £145m.³⁰¹
- (c) **Using data envelopment analysis (DEA) benchmarking models.** Taking the data used by Ofwat, Economic Insight has created alternative simple DEA models, which take account of outcomes performance. This analysis points to a figure in the region of £245m.³⁰²
- (d) **Augmenting Ofwat's econometric models.** As part of its SoC, YWS submitted analysis developed by Oxera which shows that this is possible.³⁰³

³⁰⁰ Annex 14, YWS's estimates of meeting Ofwat's FD targets.

³⁰¹ Annex 15, Economic Insight: 'The additional funding needed to reach upper quartile performance' (May 2020).

³⁰² Annex 15, Economic Insight: 'The additional funding needed to reach upper quartile performance' (May 2020); and Annex 17, DEA benchmarking models.

³⁰³ See Annex 08 (SoC), Oxera: 'Integrating cost and outcomes' (March 2020). YWS notes that Ofwat has raised several concerns regarding the inclusion of service quality variables in econometric models. These concerns are addressed in Section 3. They do not respond to the points made here or in YWS's SoC, which is that Ofwat failed to develop a methodology that is capable of reaching a robust forward-looking view of what it would cost YWS to deliver the service levels set out in its FD, and that there were (and are) several methods for doing so.

- (e) **As regards Leakage only, adjusting YWS's requested enhancement expenditure in its IAP representations to align with a 15% reduction target.** This would amount to enhancement expenditure with a value of £89.8m Totex (£55.5m capex and £34.4m opex) being reinstated. See further at paragraph 12.1.64 below.³⁰⁴

12.1.42 Of course, YWS recognises that there are inevitable uncertainties and limitations associated with all of these sources and methods. But, at this stage, the work clearly shows that:

- (a) it is possible and proportionate to arrive at an evidence-based view of the funding gap and so improve on Ofwat's assertion that it is possible for YWS to deliver UQ performance within its base cost allowance;
- (b) all analyses clearly contradict Ofwat's assertion and show that the funding gap is material; and
- (c) taken together, the analyses suggest that the funding gap could be in the region of £200m.

12.1.43 The next subsection sets out YWS's proposed alternative AMP7 targets for internal sewer flooding. This is followed by YWS's proposed remedies in relation to its other Performance Commitments.

Outcomes – Internal sewer flooding

12.1.44 In the Business Plan, YWS submitted an ambitious customer service delivery profile for internal sewer flooding. This profile was based on a predicted AMP6 year 5 outturn (i.e. number of incidents) lower than the AMP6 regulatory target, as a result of increased activity to ensure the business was ready for the upper quartile challenge intended for AMP7.

12.1.45 However, as detailed in Annex 6 (a case study on internal sewer flooding), despite YWS's investment, it was unable to reduce the number of incidents to the level assumed when setting the Business Plan delivery profile.

12.1.46 As part of its DD Representations, YWS highlighted the practical difficulties experienced in improving service to customers in such a short time frame. YWS proposed a revised AMP7 delivery profile, assuming that the AMP6 years 5 outturn would be 840 rather than 582 incidents. This proposed profile was still intended to achieve the same ambition set

³⁰⁴ It should be noted that this amount is included in the £230m figure in paragraph 12.1.37(a).

by Ofwat, but over a ten-year rather than a five-year period. YWS also (conditionally) offered to accept Ofwat's refusal to allow enhancement costs as a compromise position.

12.1.47 In the FD, Ofwat did not take account of the delivery issues YWS faced, and retained the DD delivery profile, which means the company will be facing high penalties in the AMP7 period.

12.1.48 All service positions at each stage of the PR19 process, with stated expenditure and penalty positions, are represented in Table 30 below:

	AMP6	AMP7					Penalty Exposure £m
	Yr5	Yr1	Yr2	Yr3	Yr4	Yr5	
BP	582	401	386	372	358	345	0
DD		391	383	374	344	323	113
DD Rep	840	782	724	666	608	550	4
FD		391	383	374	344	323	35

Table 30: YWS's internal sewer flooding service targets during PR19 (nr of incidents per year and expected penalty exposure over AMP7).

12.1.49 The significant change in the penalty position from DD to FD follows YWS's proposed reallocation of expenditure from capex to opex. This reflects that fact that the FD will force YWS to engage in short-term operational activity to mitigate penalty exposure, at the expense of longer-term investment.

12.1.50 The actual outturn position for AMP6 year 5 is 1,123 incidents. This is an increase of 34% from the reforecast position in YWS's DD representation, or a 93% increase from the original Business Plan, therefore making the stretch to the end of AMP7 year 1 even greater for the business to achieve.

12.1.51 Considering all the evidence it has submitted, YWS believes a principled resolution of this issue would be a reinstatement of the proposed delivery profile in YWS's DD Representations (though, as addressed in paragraphs 12.1.28-12.1.43 above on reconnecting costs and outcomes, with the allowance of the required enhancements costs). This would still present YWS with a significant delivery challenge but reduce its exposure to penalties to a more reasonable level, which would obviate the harm described in Section 3 above. YWS's proposal is shown in Table 31 below:

	AMP6	AMP7					Penalty Exposure £m
	Yr5 (outturn)	Yr1	Yr2	Yr3	Yr4	Yr5	
Remedy	1123	782	724	666	608	550	4

Table 31: YWS's proposed remedy for internal sewer flooding.**Outcomes – Mains repairs**

- 12.1.52 There are two key issues in relation to mains repairs: (i) the relationship between leakage and mains repairs and (ii) the fact that Ofwat set the target by cherry-picking the best years of historical performance.
- 12.1.53 On the first issue, YWS has been clear about the relationship between mains repairs and leakage, providing robust evidence to quantify this, as well as mature asset deterioration modelling techniques to show an increasing mains failures rate over time.
- 12.1.54 Whilst Ofwat finally acknowledged this relationship at FD, its adjustment of the mains repairs target is still insufficient to recognise the full implications of the leakage reduction requirements, which will be focussed on 'find-and-fix' to achieve the reduction in the short-term. As a result, YWS's proactive mains repairs over AMP7 will be higher as a direct result of its leakage targets.
- 12.1.55 Turning to the second issue, Ofwat has picked the mains repairs targets by selecting a subset of years of relatively good performance across the industry without understanding performance drivers in either the years picked or those discarded. For example, in its analysis, it has ignored those years where more extreme weather events and harsher winters have pushed reactive mains repairs higher, while cherry-picking years with fewer extreme weather events and relatively benign winters.
- 12.1.56 This creates two potential types of harm for customers. Firstly, by incentivising a metric that is subject to significant weather events without making any allowance for them, Ofwat is asking customers to reward companies for the weather being good (and conversely customers are rewarded for a company's supposed poor performance when the weather is bad). Secondly, by setting the target at an unrepresentatively low level unless the weather remains benign for the entire five-year period, Ofwat creates the likelihood of penalties under a flawed incentive that management cannot mitigate. This further exacerbates the downside skew of incentives and the mis-identification of the notionally efficient firm.
- 12.1.57 Both of the key issues are evident in YWS's performance for 2019/20, which shows an outturn of 195 mains repairs (compared to YWS's predicted total of 250). The 2019/20 period had a relatively benign winter, so the number of reactive mains repairs was significantly lower than expected. In contrast, the number of proactive repairs has been stable (after the increase in 2018/19 as part of YWS's early response to

the PR19 Methodology's challenge to reduce leakage). This means that YWS's mains repairs total over that period is lower than expected and, without the context above, gives a misrepresentative view of YWS's proposed remedy.

12.1.58 All service positions at each stage of the PR19 process, with stated expenditure and penalty positions are represented in the table below:

	AMP6	AMP7					Penalty Exposure £m
	Yr5	Yr1	Yr2	Yr3	Yr4	Yr5	
FBP	250	263.89	249.45	235.08	220.83	220.09	0
IAP Resp	250	263.89	249.45	235.08	220.83	220.09	0
DD	250	164.1	164.1	164.1	164.1	164.1	252.3
DD Rep	250	236.1	227.5	218.9	210.3	201.7	4
FD	250	186.1	183.6	181.0	178.4	175.8	30.7

Table 32: YWS's mains repairs targets during PR19 (nr of incidents per year and expected penalty exposure over AMP7).

12.1.59 Taking into account all submitted evidence, YWS believes a principled resolution would be a reinstatement of the delivery profile proposed by YWS in its DD Representations. As was the case for internal sewer flooding, this would still give YWS a significant delivery challenge, but it would reduce its exposure to penalties to a more reasonable level. This is shown in Table 33 below:

	AMP6	AMP7					Penalty Exposure £m
	Yr5 (outturn)	Yr1	Yr2	Yr3	Yr4	Yr5	
DD Rep	195	236.1	227.5	218.9	210.3	201.7	1.25

Table 33: YWS's proposed remedy for mains repairs.

Outcomes – Leakage

12.1.60 In its IAP response, YWS proposed a leakage reduction of 25% from its expected outturn of 269ml/day and an enhancement allowance of £136m to achieve this.

12.1.61 At the DD Representation stage, YWS proposed a compromise position to Ofwat that leakage would be reduced by 15% (in line with the rest of the industry) with no enhancement costs.

12.1.62 This was in line with Ofwat's policy position that step changes in service should not be funded through enhancement. However, this required YWS to transfer around £65m of capex to opex, reflecting an inevitable

reduction in long-term asset maintenance in favour of increased operating expenditure to drive leakage reduction and minimise penalties.³⁰⁵

12.1.63 All service positions at each stage of the PR19 process, with stated expenditure and penalty positions, are represented in Table 34 below:

	AMP6	AMP7					Penalty Exposure £m
	Yr5	Yr1	Yr2	Yr3	Yr4	Yr5	
FBP	234.6	205.0	198.3	190.5	182.8	175.0	0
IAP Resp	269.0	255.6	242.1	228.7	215.2	201.8	0
DD	269.0	267.6	246.8	236.4	235.9	215.0	13.3
DD Rep	269.0	267.1	262.5	251.9	247.3	234.0	6.3
FD	269.0	267.1	262.5	251.9	247.3	234.0	6.3

Table 34: YWS's leakage targets during PR19.

12.1.64 YWS considers that a principled resolution of this issue would be to retain the 15% reduction target (though, as addressed in paragraphs 12.1.28-12.1.43 above on reconnecting costs and outcomes), with the allowance of the required enhancements costs.

	AMP6	AMP7					Penalty Exposure £m
	Yr5	Yr1	Yr2	Yr3	Yr4	Yr5	
Remedy	269.0	267.1	262.5	251.9	247.3	234.0	0

Table 35: YWS;s proposed remedy for leakage.

WACC

12.1.65 As explained in Section 6, YWS considers that Ofwat has made a number of material errors in its assessment of the WACC, ultimately meaning that it has been set too low. In view of the volatile current market position, YWS does not wish to be prescriptive in its suggestions as to how this can be remedied but again requests that the CMA adopt an objective approach in full view of all available evidence at the time.

Gearing Outperformance Sharing Mechanism

12.1.66 For all of the reasons set out in Section 8 above, YWS requests that CMA omit any such mechanism from its redetermination.

WRFIM

³⁰⁵ Annex 05, YWS: Leakage and Mains Repairs Case Study.

12.1.67 For the reasons explained in Section 10 above, Ofwat had no basis on which to refuse YWS's claimed amount to make good the underfunding caused by this obvious data input error. YWS therefore requests that the CMA include a £44m adjustment to WRFIM in its redetermination to reflect this.

13. Impacts of Covid-19

Overview

The effects of COVID-19 on YWS's customers and business are not yet clear but YWS thought it important to convey an early assessment of the evolving picture which it will update as further information is to hand. YWS is closely monitoring the situation to identify the net impact on the delivery of YWSs Performance Commitments and ODIs, its Totex investment programmes and its bad debt position.

- 13.1.1 YWS's immediate focus during the pandemic has been on ensuring the health and safety of colleagues and the public and the continuation of the essential services on which the population of Yorkshire rely. There has been disruption to YWS colleagues and its service partners and, in some cases construction, operational and monitoring and other activities have been prevented due the operation of Government guidelines.
- 13.1.2 In addition to the impact of resources being diverted from planned activities, additional costs and programme delays are already evident. This in turn will affect YWSs ability to meet, in the short term, some of the regulatory compliance dates in AMP6 and early AMP7. Whilst the impact on the completion of the AMP6 programme is relatively small, there has been a delay to the final sign-off of some required studies to fulfil YWS's National Environment Programme, such as the Humber Estuary study, and outputs required to complete its Event Duration monitoring programme. The Environment Agency has been made aware of these outputs and YWS is working to complete these obligations in as safe and timely a manner as possible.
- 13.1.3 At this stage, the effects of the pandemic on the AMP7 regulatory programme are less foreseeable. However, YWS is already noting increased Totex costs due to the requirements of additional equipment and activity to undertake routine tasks in line with safe working procedures to meet government guidance. YWS sees a possible net increase in costs following a return to full activity, for example, increased repair and maintenance costs and possible unit cost increases from service partners and suppliers.
- 13.1.4 Work that requires direct interaction with customers, such as metering programmes and leakage reduction activity where the leakage is within

the customer's property boundary, have also materially reduced for the time being with an inevitable programme backlog in due course.

- 13.1.5 Work is currently ongoing closely to monitor any impacts on YWS's significant capital programme, such as additional costs due to changes in site logistics and facilities. YWS will also monitor ongoing costs to allow these planned works to be delivered, whilst continuing to implement safe working procedures.
- 13.1.6 These factors are likely to combine to create a detrimental impact on the plan YWS had in place to seek to deliver the significant service improvements required by Ofwat in the FD. This in turn will lead to increased penalties (over and above those that YWS already expects to incur under the FD) if no action is taken by Ofwat to ameliorate those impacts. As an example, the 15% leakage reduction required in AMP7 under the new reporting methodology uses a three-year rolling average, so any impacts this year will also impact on YWS's ability to meet the target in future years. This measure is also being adversely affected by the company's ability to resolve leakage repairs within customers' property boundaries, which account for a third of leakage volume repairs.
- 13.1.7 Changes in customer behaviour may well impact YWS's ability to meet its service level improvements on per capita consumption (see below). A communications campaign designed to help mitigate the impact is in place but this is unlikely to fully correct the observed upward trend in water use, which is a result of changing lifestyles during the pandemic restrictions.
- 13.1.8 The under/over recovery of revenues will need be adjusted for in future tariffs through adjustments to the allowed revenues allowances:
- (a) Wholesale revenue is being impacted differently by the household and non-household markets.
 - (b) YWS is seeing an increase in household consumption, which appears to be driven by customers being at home more often, an increased focus on hygiene to reduce the risk of the transfer of Covid-19 virus and the warm Spring weather.
 - (c) Conversely the company is seeing a reduction in consumption within the non-household market, due to the temporary closures in line with government guidance, staff being asked to work from home, and the permanent closure of businesses.

- (d) Developer services are being impacted due to delays in the building market.
- (e) Retail household is being impacted by changes in customer circumstances which may impact on the levels of social tariffs.

13.1.9 YWS is anticipating an increase in bad debt within the retail household control, related to the impact of the pandemic on the economy. YWS has prioritised assistance to customers experiencing financial problems by increasing the promotion of schemes which are in place to provide financial assistance, through social tariffs, help with payment terms and a range of other activities and programmes to assist the vulnerable, examples of which include:

- (a) Offering payment breaks or payment holidays for anyone in financial difficulties as a result of Covid-19.
- (b) Offering payment plans to help spread the payments over time.
- (c) Promoting alternative payment methods for those who cannot pay by traditional routes.
- (d) Making applying for help simpler, making it as easy as possible for customers to get the help they need.
- (e) Signposting customers for advice on benefits and managing debts.
- (f) Paused or reduced bill reminders and debt recovery and enforcement action.

13.1.10 Within the non-household market (**NHH**) Ofwat is developing a mechanism to try to protect retailers from being forced to cease trading. The current proposal is for wholesalers to allow retailers to pay the maximum of 60% of collection or the amount of collected income. The deferred amounts are due to be paid by the end of March 2021. There is continuing uncertainty regarding both the duration and scale of support to NHH retail market. It is also not clear how recovery mechanisms will operate in the event of large offsetting swings in consumption between NHH and the metered domestic customers. In anticipation of the increase in bad debt exposure to wholesalers, Ofwat is developing a cap which will restrict the amount to one month of charges by retailer.