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Reference of the PR19 final determinations: Costs and outcomes – response to CMA provisional findings

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Contents

1. Introduction

1.1 This document provides our response to the Competition and Markets Authority (CMA)'s provisional findings on:

- Cost assessment covering base and enhancement costs and the overall totex allowance;
- The outcomes framework, performance commitments and incentives; and
- Other issues such as the wholesale revenue forecasting incentive mechanism and financial modelling.

1.2 At the front of the cost assessment chapter we provide further detail of our concerns over the standard of evidence, the proposed to leakage allowances and the impact of the provisional findings on incentives and the regulatory framework. We set out further detail of our response to key issues in cost assessment in the appendices.

2. Costs

2.1 We welcome the CMA provisionally adopting the same overall approach to the assessment of base and enhancement costs as we did in our final determinations, including our benchmarking models and our deep and shallow dive assessment framework.

2.2 We support many of the provisional decisions, and we agree with the overall stretch on base and enhancement costs. However, we have particular concerns with:

- the standard of evidence for some enhancement schemes, which could result in unnecessary costs on customers of Anglian and Northumbrian Water;
- the provisional leakage allowance for Yorkshire Water, which undermines our challenge to the sector to turn around two decades of poor performance on leakage; and
- the provisional decision to introduce a growth uncertainty mechanism, which has significant implications for allocation of risk between companies and customers and unintended consequences for the developer services market; and
- the provisional decision on the approach to cost sharing, which significantly weaken incentives for efficiency and will make it harder for us to regulate in the future.

2.3 We are also concerned that the CMA's support for the stretch on costs and overall stretch on costs and outcomes is substantially damaged through the decisions the CMA makes on the allowed cost of capital – which is addressed in a separate document.

2.4 We provide a summary of our concerns in each of these areas below. Our detailed responses to the issues raised by the CMA's provisional findings are set out in the tables below or in the appendices.

Standard of evidence

2.5 **It is consistent with the disciplines of good regulation to test companies' claims and expect to see the evidence to support them.** Companies have better information on their costs and requirements than the regulator. Consequently, it is right to place the onus on the companies to provide sufficient and convincing evidence that their requested allowances are justified and represent efficient expenditure.

2.6 For these reasons, **we are pleased to see that the CMA has maintained a high evidential bar in the majority of its provisional decisions** and has made a number of efficiency challenges where the evidence provided was insufficiently robust. We consider that the CMA has largely taken a balanced approach between ensuring that customers do not pay over the odds and ensuring that cost allowances are efficient. The CMA is right to recognise that customers overpaying for poorly-developed enhancement proposals, in particular in light of information asymmetry which inhibits effective regulatory scrutiny, is a concern.[1]

2.7 However, given that the CMA has signaled the importance of 'requir[ing] the company to provide robust evidence to support its claims,'[2] we are disappointed that this approach does not appear to have been applied consistently to all enhancement proposals.

2.8 In particular, the provisional decisions relating to Northumbrian Water's Essex Resilience and Anglian Water's strategic interconnector schemes **appear wrongly to give the companies an undue benefit of the doubt where they have failed to provide sufficient evidence.** We agree with the CMA that enhancement is 'an area of particularly acute information asymmetry'.[3] Therefore, it is particularly important to avoid any lowering of the evidential bar.

2.9 To illustrate, the CMA recognised that 'Northumbrian's submissions [on the Essex Resilience scheme] make it difficult for us to perform any form of cost benefit analysis', and that the company has carried out 'minimal optioneering'.[4] The CMA has stated that its provisional decision to allow funding for the Essex

[1] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 305, paragraph 5.162.
[2] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 325, paragraph 5.171.
[3] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 264, paragraph 5.19.
[4] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 325, paragraph 5.245.

Resilience scheme is 'finely balanced'. We do not see how this can be the case, there being a clear lack of evidence to support this scheme to the extent that (as the CMA itself accepts) no cost benefit analysis can be done. Northumbrian Water has had multiple opportunities to present the requisite evidence, either during PR19 or the redetermination process. With over two years since it presented its original business plan, and despite our detailed feedback, it has failed to do so. We do not consider that this failure should be rewarded.

2.10 We would add to the above that the Essex Resilience scheme is a case where we have serious doubts that there is a need to invest now in an end of pipe (or any) solution. In the event that Northumbrian Water does put forward a proper analysis of options, supported by adequate evidence, the scheme could be reconsidered at the next price review.

2.11 To take another example, for the provisional findings on Anglian Water's interconnector proposal not only do we consider the company's evidence in support of its chosen proposal to be inadequate but we have not been able fully to understand the basis on which the CMA has provisionally reached its decision to fund it. That is because the provisional findings provide very little detail around the engineering advice from the CMA's engineering advisers, WRc, although their advice clearly influenced the CMA's decision.[5] The CMA presents brief summaries of WRc's conclusions but provides neither their full reasoning nor the underlying evidence that supported their views. Even if there are some cases in which an expert's advice is an opinion based on judgment, the reasoning behind that opinion should still be explained fully. In most cases, where an expert's advice is based on facts and evidence (such as, for example, cost benchmarks), that supporting information needs to be presented in full. Otherwise, the conclusion cannot be properly understood or meaningfully challenged.

2.12 Overall, in our final determination in relation to the interconnector proposal we have already allowed for the full capacity required according to the company's water resources management plan (WRMP). This includes headroom capacity. We saw no evidence of the additional benefit to customers of making the interconnectors larger than is required for resilience headroom on top of the

[5] We requested to see the associated engineering advice provided by WRc in order to make an informed response to the provisional decision. The CMA responded that it did not consider such an arrangement to be necessary because the advice did not take the form of a single report and the CMA considers to have sufficiently summarised it in the provisional findings.

WRMP requirements that we allowed for in our final determination. We still see no such evidence.

2.13 We understand that, in part, the CMA provisionally decided to make the full allowance for the above-mentioned two schemes on the basis that each scheme would improve resilience in the face of long-term risks.[6] While securing long-term resilience in the round is clearly important, and indeed forms one of our duties, **that requirement does not bring with it an obligation to accept companies' proposed business plans where they are not supported by sufficient evidence.** Accordingly, when the CMA is conducting the redetermination, and hence bound by the same statutory duties as Ofwat, it should maintain the high evidential bar for accepting such schemes.

2.14 We are mindful that, by necessity, the CMA has only conducted deep dives on the schemes under dispute. The CMA has therefore not had the opportunity to compare the poor quality of evidence for these schemes with the fuller and higher-quality evidence submitted for the (many) schemes for which we did make allowances in our final determinations.[7] In other words, the CMA has had an overview of the quality of evidence put forward in support of enhancement proposals that is not only limited but is also highly unrepresentative of the evidence that the water companies, as a whole, put forward in support of their enhancement proposals. We are concerned that this may have influenced the CMA's perceptions as to what standard of evidence is feasible, which may in turn have contributed to a lower evidential bar in some cases. We urge the CMA to bear this point in mind. It would be unfortunate if, notwithstanding the CMA's clear statements in the provisional findings about the problem of information asymmetry and the need for robust evidence, Northumbrian Water and Anglian Water were rewarded for persistently failing to put forward sufficient evidence in support of their proposed schemes, by contrast with other companies which put in no worse evidence but did not dispute our decisions.

[6] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 326-7, paragraphs 5.250-5.251; p. 349, paragraph 5.349.
[7] For example we made an allowance of £16.5m for Anglian Water to improve resilience through managing risks to single sources of water supply and an allowance of £21.4m for Northumbrian Water's Lartington and Tees mains resilience scheme, the need for which were both well-evidenced.

Leakage and overall stretch

2.15 We are pleased that the CMA has supported our ambition to drive a step change in performance, and to encourage the sector to go further on leakage.

2.16 At the outset of PR19, we set out that **if the water sector is to make the step change it needs, it is important that companies are set a stretching but achievable determination.** Overall water company performance has stagnated in recent years, despite improvements early in the 2015-20 period, and productivity has flat lined for much longer.[8] We are therefore encouraged that the CMA has backed our approach by provisionally supporting the level of stretch we set on performance commitment levels while, in the vast majority of cases, agreeing that our cost allowances are sufficient for companies to achieve them. We provide new evidence that some companies have achieved good cost efficiency and good outcomes performance taking into account 2019-20 data, and this is also reflected in other sectors (see appendix A5).

2.17 **We consider there is an especially strong case for stretching the sector to make significant reductions in leakage over 2020-25.** As the CMA recognises, the water sector has achieved little overall reduction in leakage since the turn of the century, despite having achieved a reduction of over 30% in the decade following privatisation. Levels remain very high – in our view, unacceptably so.[9]

2.18 This long-term stagnation, which has not been denied by the disputing companies, has occurred even though **significant technological improvements allow companies to identify leaks more quickly and to reduce response times.** For example, leak awareness times have dropped from an average of 14 days to less than a day.[10] Companies have the opportunity to take advantage of recent advancements in sensor design, reductions in data communication costs, and the use of innovative analytics and predictive modelling. All of this enables companies to improve understanding of their networks and reduce leakage efficiently.

2.19 **We are therefore concerned that elements of the CMA's approach on leakage undermine our ability as a sector regulator to highlight areas of concern and step in to challenge the sector to do better**. For the avoidance of doubt, we do not consider that paying companies extra to reduce leakage is

[8] Ofwat, 'Reference of the PR19 final determinations: Overview', pp. 9-13, paragraphs 2.8-2.17.
[9] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 481, paragraph 8.5.
[10] UKWIR, Reference 10/WM/08/42: 'Managing Leakage', September 2011.

a challenge to their poor performance; rather, it is a reward for failure. We note the CMA concluded: 'We have not seen any evidence that the Disputing Companies, specifically, profited by underperforming their leakage targets, or by obtaining excessively generous funding for those targets.' This fundamentally misunderstands our concern. The sector could, over the last 20 years, have pushed much harder to reduce leakage through innovation and adoption of new techniques at no further cost to customers. This would not show up as cost outperformance, but as stagnant leakage performance while spending in line with cost allowances. So the question is not whether poorer performers on leakage have made excess returns: it is whether or not their historical performance represents an efficient level of performance.

2.20 The purpose of setting the 15% challenge to the sector was to stimulate the sector to turn around its performance. The overall trend over the past two decades masks some large reductions in leakage made by individual companies. However some companies have simply not stepped up. **Recent performance data on leakage shows that large reductions in leakage are possible.** We have observed a 7% annual reduction across the sector in 2019-20, with six companies achieving reductions of 10% or more. This dramatic transformation in performance with no additional funding, after 19 years of stagnation, highlights the important role that a regulator can play by challenging the sector.

2.21 Given this evidence, **we strongly consider that customers of lower-performing companies, such as Yorkshire Water and Northumbrian Water, should not have to pay more to reduce leakage to levels that were achieved long ago by other companies without additional funding.** This reflects that our 15% leakage reduction is a challenge to poorer performing companies to improve their performance from within base funding and not simply to do more using the same processes and techniques they used historically. [11] This is consistent with the approach used by Northumbrian Water where it did not request additional costs to reduce leakage in its business plan, confirming this during its CMA hearing. [12]

[11] In our final determinations we only made enhancement leakage allowances to four out of 17 companies. We considered the remaining 13 companies should fund leakage reduction from our base allowance, as we explained in Ofwat, Reference of the PR19 final determinations: Cost efficiency – response to common issues in companies' statements of case, May 2020, pp. 56-59.
[12] Competition and Markets Authority, Northumbrian Water hearing transcript, August 2020, p. 62, lines 7-11.

2.22 We welcome the CMA's recognition in its provisional determination that the base cost allowance is sufficient to maintain current leakage performance for companies at or below upper quartile levels of leakage.[13]

2.23 **We are pleased that the provisional findings for Anglian Water and Bristol Water broadly support the allowances we provided in the final determinations** and do not consider that the companies have provided evidence to justify an additional allowance.

2.24 In our view, **Yorkshire Water's enhancement allowance, like Northumbrian Water's, should be zero**. If the CMA decides to keep its provisional decision methodology, Yorkshire Water's enhancement allowance should be up to a maximum of £29 million. This reflects that: (i) Yorkshire Water has already achieved a substantial part of its required 2020-25 leakage reduction in 2019-20, (ii) the company's bottom-up costing does not provide compelling reasoning that these are not base activities, and only provides limited evidence of benchmarking; and (ii) the company's unit costs are higher than its own earlier estimate for a larger leakage reduction, and significantly higher than industry upper quartile unit costs.

2.25 The CMA acknowledged in its provisional findings that it was seeking further more detailed information for review to determine companies leakage enhancement expenditure.[14] This included the option for Northumbrian Water, who throughout the process to date has not requested such expenditure, to submit revised requirements. While we have done what we could in the time allowed, we do not yet know what the companies will request and how the CMA will approach its determinations. Leakage was a key headline policy area for us in PR19 and **unless we have further adequate consultation on this area we consider this would be a significant flaw in the CMA's decision making**. Further detail including our initial assessment of the companies' responses to the CMA recent request for information in Appendix A3.

2.26 Finally, we note the CMA's comment, in relation to its provisional recalculated allowances, 'We have assumed that additional funding will be needed across the sector to deliver targeted improvements in leakage which are in line with the enhancement Totex identified by the firms in their submissions to the CMA.'[15] We presume that the CMA is not suggesting we should reopen the final determinations in relation to enhancement allowances for all of the companies,

[13] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 489, paragraph 8.44.
[14] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 497, p.503.
[15] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 497.

as this would overstep the proper scope of these determinations. **The CMA's role is to redetermine the price control for the four disputing companies only, not for the sector as a whole.**

2.27 In any event, we moderated our frontier shift assumptions in the final determinations to take account of the challenge on leakage and 11 of the 17 water and wastewater companies accepted the Final Determination without any additional funding to reduce leakage. We also note that the targeted improvements for the sector are significantly lower than at the Final Determination stage due to the performance that the sector has already achieved in 2019-20.

Incentives and regulatory framework

2.28 The CMA has made provisional decisions that undermine important incentives embedded in our regulatory framework and could have long term impact on our ability to regulate effectively for customers and distort competitive markets. In particular, its provisional decisions relating to the expansion of the developer services revenue adjustment (DSRA) and the revision of cost sharing rates.

2.29 **DSRA expansion.** The CMA made a provisional decision to include a large share of costs subject to a true up mechanism for all disputing companies. This effectively makes a large component of the network plus control an average revenue control (albeit via an ex post adjustment mechanism rather than formally within the structure of the price control).

2.30 The network plus price controls are total revenue controls. The underlying reason for our move from an average to a total revenue controls at PR14 was that costs and revenues do not fluctuate much with changes in actual volumes (connections, water supplied etc.) and the average revenue controls resulted in excess profits to companies.

2.31 The CMA has stated that it did not consider it to be 'sensible or practical to adopt a wholly different regulatory framework.'[16] However, the effect of the CMA's proposals is to significantly depart from our applications of "total revenue" price controls, by providing a true up of a wide cost base for variations in customer numbers. This unwinds the progress we have made in this area,

[16] Competition and Markets Authority, 'Provisional findings report', p. 13, paragraph 21.

which led to a more stable regime, removal of perverse incentives to understate growth, and better overall incentives for companies.

2.32 We set out our detailed response on the CMA's proposal to expand the DSRA in appendix A2, where, other than the points made above, we explain the risk of significant unintended consequences related to the specific mechanism proposed by the CMA as well as potential disruption to the developer services market.

2.33 We also note that, similarly to leakage (see pp. 7-9 above) above, the CMA has apparently not yet reached even provisional decisions in relation to certain aspects of growth reconciliation. In particular, it is 'considering applying an asymmetric true-up mechanism'[17] but is still consulting on this. The concerns that we express above about the **need for further adequate consultation to avoid a significant flaw in the CMA's decision making** apply with equal force to the growth reconciliation mechanism.

2.34 **Cost sharing**. The CMA has provisionally proposed to set the same cost sharing rates for all four of the disputing companies. The sharing rate for cost overruns is 55% (i.e. the company will bear 55% of the cost overrun) and for cost savings it is 45% (i.e. the company will keep 45% of any cost saving).

2.35 While the CMA acknowledges the importance of the cost sharing incentive, we are disappointed that it did not set cost sharing rates that preserve the incentive and reflect the self-challenge that companies have applied to their business plan cost forecasts. By intervening and softening the cost sharing rates, the CMA undermines incentives for all companies to submit efficient business plans in future price reviews. This significantly weakens our ability to challenge companies to be efficient with significant consequent harm to customer interests.

2.36 Cost sharing rates are a key element of our approach to price reviews and play an important role in incentivising companies to challenge themselves to be more efficient and to reveal accurate information on the level of efficient costs. There are substantial benefits to customers from improving efficiency and revealing accurate information on the level of efficient costs.

2.37 At PR19, a number of companies including the three fast track companies submitted business plans with considerable self-challenge on the level of

[17] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 220, paragraph 4.512

efficient costs. These companies have benefited from favourable cost sharing rates. The disputing companies have failed to challenge themselves to be efficient or to provide accurate information on their true level of costs. This is confirmed by the CMA in its provisional findings, which confirm that the companies' business plans are significantly above the level of efficient costs.

2.38 In its provisional findings, the CMA has made a major intervention in relation to the cost sharing rates in our final determinations. It has made this intervention in the light of concerns that the range and levels of cost sharing rates for the disputing companies may reduce companies' incentives to outperform, expose companies to higher risks from underperformance and create unintended incentives. We do not consider that these concerns are material or well-evidenced.

2.39 Further, any decision that the CMA makes needs to balance potential adverse consequences with the damage that softening cost sharing rates does to the sector as a whole, in terms of the ability to incentivise companies to self-challenge and submit efficient business plans in the future.

2.40 We set out our detailed response on the CMA's cost sharing proposal in appendix A7.

Examples of overstated allowances

2.41 **Canal and Rivers Trust costs (Bristol).** We do not consider a £2.7 million increase in Bristol Water's allowance for this claim is justified. Our final determination base cost allowance for Bristol Water's water resources price control is already higher than the cost the company requested. We made a favorable allowance to the company for this claim as part of our in the round assessment, but the evidence on the claim is poor and does not warrant a further increase. While Bristol Water's scale of procurement of raw water is unique, there is no evidence of its costs being atypical. Other companies have bulk supply arrangements, which means these costs are captured in our base models and companies receive an implicit allowance against it. We calculate that any implicit allowance far exceeds the gap between our allowance for this claim and Bristol Water's payments to the Canal and River Trust. Moreover, Bristol Water benefits from significant savings as it does not need to store the water it abstracts from the Gloucester and Sharpness Canal, while other companies incur the cost of owning, operating and maintaining an impounding reservoir.

2.42 **Essex Resilience (Northumbrian).** We disagree with the CMA's provisional proposal to allow £20.4 million for this scheme. The provisional decision is based on a judgement that lacks supporting evidence. This does not further the consumer and resilience objectives. Our thorough assessment of the scheme and feedback provided throughout PR19 offered the company opportunities to strengthen its case. We do not consider that endorsing investment on the basis of observing two 'near misses' is appropriate, in particular given that we have funded another scheme that would address the important factor behind the 'near miss' incidents. Crucially, the CMA should consider the criticality of making a decision on this investment now, given the lack of evidence; the investment at Layer water treatment works; and the planned regional studies over the next 2-3 years. This is not a 'now or never' decision. A more appropriate approach would be to delay a decision on this investment until robust evidence is provided, in line with the high evidential bar we set. However, if the CMA maintains that an allowance should be made, despite our concerns, it should be subject to optioneering and efficiency challenges in order to be internally consistent with the CMA's approach to determining allowances for other poorly evidenced schemes.

2.43 **Bioresources (Anglian).** We consider that the CMA's proposed allowance of £12.5 million is overstated, both in terms of capacity requirements as growth is overstated and cost due to the inclusion of additional operating expenditure. Its provisional decision is inconsistent with the approach taken for other companies (for example Yorkshire Water accepted a market solution for bioresources capacity as part of its request for a redetermination). If the CMA maintains its provisional decision, it will either foreclose the development of the bioresources market (if the capacity is built) or lead to windfall gains to shareholders (if Anglian Water engages with the market and finds a cheaper market solution).

2.44 **Metaldehyde (Anglian).** Given the re-introduction of the ban on metaldehyde, we consider that the entirety of the allowance of £63 million for Anglian Water should be removed. Anglian Water will no longer have to incur the costs associated with enhancing its water treatment as these costs relate to transfer schemes that are expected to become operational later in the period 2020-2025, after the ban has phased in. Further, historical base costs of managing metaldehyde would be covered by our base expenditure allowance, and the CMA should consider a downwards adjustment to the disputing companies costs to reflect the savings following the introduction of the ban.

A note on the use of 2019-20 data in the base cost models

2.45 Following the publication of the CMA provisional findings, on 15 October 2020 Bristol Water shared with the CMA an updated version of the wholesale water base cost econometric models including an additional year of data (2019-20).[18] The additional year reflects data companies published in July 2020 as part of their Annual Performance Reports (APRs), which was not available at the time of our final determinations.

2.46 We have not had sufficient time to consider Bristol Water's submission. We note that the data has not been subject to a full quality assurance yet, as we do for data used in the price control, and that non-section 185 diversions costs have not been excluded. Moreover, the commentary companies provided on 2019-20 data suggests significant investments were brought forward from the period 2020-25, as preparation to meet performance commitments in AMP7.

2.47 We also note that our PR19 final determination base allowances were calibrated against companies' forecast of base costs in 2020-25, consistent with what we said in our PR19 methodology[19]. We consider that our base allowance for companies was and remains reasonable, with 12 companies forecasting base costs below what we have allowed

[18] Bristol Water, 'Email to the CMA – 2019-20 update to base model data', October 2020.
[19] Delivering Water 2020: Our final methodology for the 2019 price review, Ofwat, December 2017, section 9.4.4, p. 147-148.

Base costs

Table 2.1: Ofwat response to CMA base cost provisional findings

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Modelled base costs (All)	pp. 100-156, paragraphs 4.2-4.252	• The CMA adopted a similar approach to Ofwat's in relation to modelled base cots, except: (a) The CMA did not make use of the Ofwat's alternative specifications (in practice, it removed the adjustment that we have made to Anglian Water on the basis of the alternative specifications) (b) The CMA dropped one of the wholesale wastewater models for sewage collection (SWC1) on the basis that the number of properties per sewer length variable had a counterintuitive negative sign. (c) The CMA used updated ONS forecast data for the number of connected properties and population density.	• We support the CMA's provisional findings to use a similar approach to ours in relation to econometric modelling. Specifically, we support its findings to retain all our wholesale water models and seven of the eight models in wastewater. • We support the overall provisional outcome on base costs and in the light of that do not recommend that the CMA re-instates the wastewater collection model. • However, we do not think the argument for removing the sewage collection model is robust and in appendix A1 we explain that the model has a positive, rather than negative, elasticity with respect to sewer length. We consider the CMA could consider the sewage collection model for taking a final view on cost allowances.
Catch-up efficiency challenge (All)	p. 156-166, paragraph 4.253-4.297	• The CMA has set the catch-up efficiency challenge at the upper	• We welcome the CMA's provisional decision to retain a reasonable catch-up efficiency challenge to companies. We understand that a decision on

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		quartile in both water and wastewater.	the catch-up efficiency challenge interacts with other decisions that the CMA has made in relation to base costs. • The CMA notes that 'The Northern Ireland Utility Regulator used an upper quartile efficiency challenge for its transmission and distribution price control' (paragraph 4.292). We note that the efficiency challenge electricity distribution was based on the fourth placed company, which is more stretching than the upper quartile.[20] • The CMA notes that 'regulators typically choose the upper quartile benchmark'. While this might be correct (with the significant exceptions we have noted), we should note that setting a benchmark at the upper quartile is a matter of judgement, with a degree of arbitrariness. We certainly consider that the upper quartile is within a range of plausible levels of catch-up challenge (as noted by the CMA in paragraph 4.296, the upper quartile balances 'setting a challenging benchmark while acknowledging the limitations of the econometric modelling'), but we consider that setting the level of efficiency challenge should be based on careful assessment of the evidence on a case by case basis rather than arbitrary assumption of a default upper quartile level.

[20] 15 Distribution Network Operations (DNOs) were included in the modelling, meaning the upper quartile is in between the fourth and fifth placed DSO (4.5).

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Frontier shift (All)	p. 166-184, paragraph 4.298-4.377	The CMA has calculated a frontier shift of 1.0% per year based on: • Total factor productivity growth of 0.7% per year between 1990 and 2007 (measured on a gross output basis) • An uplift to reflect productivity gains from embodied technical change that are not fully captured in the 0.7% figure; • Placing some weight on gross value added measures of productivity growth which are higher; • A consideration that the water sector will be affected by some of the factors which have led more recent UK-wide productivity growth to be lower than before the financial crisis; and • The majority of the Disputing Companies' own frontier shift	• We welcome the CMA's provisional finding that the disputing companies should still be subject to a reasonable productivity challenge. We consider that there is strong evidence to support the CMA to use a higher productivity estimate. In particular: • Some weight should be placed on earlier economic cycles in particular the longer 1980 - 2007 period, the average TFP growth in gross output of comparator sectors was 0.8% per year.[21] • As set by Europe Economics there are a number of reasons why the recent low productivity estimates do not imply a lower frontier shift assumption for the water sector.[22] • The adjustment required to take account of embodied technological change may be far higher than the 60% estimated by Europe Economics in the final determination[23] and based on new evidence could be 140%.[24] Even applying a lower bound of 60% would give productivity growth of 1.1% if using base productivity growth of 0.7%.

[21] Europe Economics, 'Real Price Effects and Frontier Shift - Final Assessment and Response to Company Representations', December 2019, p. 77, Table 3.14.
[22] Europe Economics, 'Additional evidence on some points related to frontier shift', October 2020, table 1 and section 2, pp. 7-20.
[23] Europe Economics, 'Real Price Effects and Frontier Shift - Final Assessment and Response to Company Representations', December 2019, p. 68, Table 3.7.
[24] Europe Economics, 'Additional evidence on some points related to frontier shift', October 2020, section 4, pp 26-28.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		assumptions were in line with or higher than the CMA's estimate.	• Taking full account of value added measures would on its own lead to productivity growth of 1.5% per year (based on data from 1980-2007)[25] and contrary to the arguments put forward by First Economics even after taking into account the impact of intermediate inputs, value added measures imply materially higher productivity growth than gross output measures.[26] • The totex and outcomes framework has provided benefits to companies this period, as evidenced by the outperformance on WINEP scheme, with the disputing companies only spending 57% of their business plan request.[27] Going forwards the companies are pushing to pursue an even greater level of less capital intensive solutions in the future.[28] The additional gains from the totex and outcomes framework will be realised not just in the current period but over future decades due to the long lived nature of many assets and may be higher in future periods due to current events such as Brexit and Covid-19 reducing or altering the costs of some input prices.[29] • Our 1.1% per year frontier shift assumption took account of the 15% leakage reduction. We note that the CMA is also proposing to provide

[25] Europe Economics, 'Real Price Effects and Frontier Shift - Final Assessment and Response to Company Representations', December 2019, p. 78, Table 3.16.
[26] Europe Economics, 'Additional evidence on some points related to frontier shift', October 2020, section 3, pp. 21-25.
[27] Ofwat, Response to companies' 27 May submissions to the CMA - Cross cutting issues, June 2020, p. 12, paragraph 2.26.
[28] Anglian Water. Anglian Water's five-point plan for a green recovery, September 2020, p.9.
[29] Europe Economics, 'Additional evidence on some points related to frontier shift', October 2020, section 5, pp. 29-31.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			companies with funding for leakage reduction. A 0.1% reduction in frontier shift is similar to the efficient costs we have estimated to reduce leakage. For example a 0.1% reduction in frontier shift is worth around £16m to Yorkshire compared to an efficient leakage reduction cost of £29m.
Application of frontier shift (All)	pp. 184-186, paragraphs 4.378-4.387	• The CMA extends the application of frontier shift and real price effects to all water company costs.	• While we only applied frontier shift to some enhancement costs, we understand the CMA's extension of frontier shift to all water company costs. We do not consider that the application of frontier shift should negate the need for a strong efficiency challenge on company cost estimates where they do not provide appropriate supporting evidence. • Frontier shift and real price effect estimates are based on data on all expenditure in comparator sectors and so agree that frontier shift and real price effects apply to enhancement costs as they do to base expenditure. We agree that there is no double counting as Northumbrian Water and Bristol Water have offset their frontier shift adjustment with a real price adjustment. We consider that there is a case for the CMA to go further for Anglian Water and Yorkshire Water and provide a downwards adjustment to back out the net increase in costs from their real price effect adjustments outweighing their frontier shift adjustments in their business plan. Anglian Water's frontier shift assumption in its business plan of 1% was outweighed by its real price effect

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			adjustment of 1.2 to 1.4% per year.[30] In its response to RFI11Q25, it continues to be unclear whether Yorkshire Water has applied a frontier shift adjustment to its enhancement costs, and even if it is accepted that it has, this is outweighed by its real price effect adjustment.[31] These adjustments are material for example a 0.3% per year efficiency adjustment to all of Anglian Water's enhancement costs is worth around £18 million.
Real price effects – labour (All)	pp. 187-196, paragraphs 4.394-4.426	• The CMA uses the same criteria as Europe Economics (and Ofwat) to assess real price effect adjustments and make a real price effect adjustment for labour costs but not for other input prices.	• We welcome the CMA's provisional findings and support the use of the Europe Economics criteria, in particular to address information asymmetry, encourage simplicity and maintain management incentives and to only allow a real price effect adjustment for labour costs, for the reasons we have set out in our previous submissions to the CMA. We note that the CMA sets out both the March 2019 and March 2020 real wage rate growth figures in the document and uses the March 2019 figures in its modelling. We consider that there is merit in continuing to use the March 2019 figures. While the March 2020 figures are in theory more up to date, they are also higher than the March 2019 figures. However, real wage growth rates have fallen substantially since then, as demonstrated by the Office for Budget Responsibility's July 2020 Fiscal Sustainability

[30] Ofwat, Response to companies' 27 May submissions to the CMA - Cross cutting issues, June 2020, p. 10, table 2.1. Ofwat, 'Final submission to the CMA', August 2020, p 17.
[31] Yorkshire Water response to RFI011 question 25.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			report. In this report the Office for Budget Responsibility assumes an average annual growth over 2020-2025 in wages and salaries of 2.6% in its central scenario and 1.6% in its downside scenario.[32] This compares to the Office for Budget Responsibility's 1.6% annual CPI assumption over the period in both scenarios.[33] This is considerably lower than the March 2020 forecasts. Therefore if the CMA used the March 2020 forecasts, it could simply be increasing revenue allowance unnecessarily, that would later increase the amount that would need to be reconciled at PR24. We continue to consider that there is a case for the CMA to use the March 2019 forecasts (for simplicity across all companies), or alternatively use the Office for Budget Responsibility's central scenario from the July 2020 Fiscal Sustainability report.
Real price effects – energy (All)	pp. 196-200, paragraphs 4.427-4.437	• The CMA uses the same criteria as Europe Economics (and Ofwat) to assess real price effect adjustments and make a real price effect	On energy costs we support the CMA's decision not to allow a real price effect adjustment. We further note that: • Wholesale energy costs (the largest portion of the bills)[34] can be hedged several years in advance,

[32] We note that the Office for Budget Responsibility's July 2020 fiscal sustainability report provides wage and salary growth figures rather than hourly wage rate forecasts that are set out in the March Economic and fiscal outlook.
[33] Office for Budget Responsibility, 'July 2020 - Fiscal sustainability report – charts and tables: Chapter 2', July 2020, T2.2 and T2.4.
[34] Wholesale market prices are provided by Ofgem's wholesale market indicators, and non-domestic prices for large users are available from BEIS's gas and electricity prices in the non-domestic sector.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		adjustment for labour costs but not for other input prices.	giving price certainty for a large proportion of the price review.[35] • Whilst wholesale pricing can be volatile, the latest Over The Counter (OTC) data suggests wholesale prices are expected to be relatively flat out to winter 2023-24[36] and have fallen markedly since company business plans were submitted in September 2018.[37] • Data from the Price Reporting Agencies (PRAs) suggests that while forward wholesale electricity prices have risen since the start of Covid-19, forward rates are still below the level in September 2018 when companies submitted business plans. For Summer 2021 delivery, in September 2018, baseload pricing of around £50 and peak of around £55; in April 2020, baseload pricing of around £35 and peak of around £40; in October 2020, baseload pricing of around £45, and peak of around £50. • Companies can contract with suppliers to fix certain other aspects of the energy bill.[38] We understand that a number of companies took advantage of the low forward electricity prices in April 2020 to hedge future prices.

[35] For example the industry standard Argus European Electricity market reports currently give Over The Counter (OTC) prices out to Summer 2024 for UK and Irish electricity markets. The latest reports are available to purchase only so we cannot provide a link here – an example report for November 2019 shows OTC prices to Summer 2023.
[36] Argus European Electricity Market Report, UK and Ireland, 30 September 2020.
[37] See for example Nordpool which shows energy prices falling from £66/MWh in September 2018 to £44/MWh in September 2020.
[38] Pricing for large users is typically bespoke, but as an illustrative example EDF provides fixed pricing options up to 2023 for up to 50GWh of annual consumption (approx. £7m).

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			• There are several plausible reasons to conclude that energy prices will not change as much in the early 2020s as in the previous decade. For example: • Network charges will be determined by Ofgem decisions in RIIO2. Based on the draft determinations for gas distribution, gas transmission and electricity transmission it seems unlikely these will substantially increase compared to network charges during PR14. For example, the overall draft determination for these three sectors states it will 'reduc[e] the network portion of a consumer bill by 16% for gas distribution and 4% in transmission on average compared to RIIO-1.'[39] • Subsidy costs for new renewable generation are falling,[40] and some renewables schemes have closed. This reduces the upward pressure on bills compared to the PR14 period. [41]
Growth cost assessment (All) (except true-up mechanism which we discuss in appendix A2)	pp. 204-216, paragraphs 4.454-4.493 pp. 220-223, paragraphs 4.513-4.529	• The CMA retains our approach to assessing growth-related expenditure within the base cost models, as no superior approach has been suggested and it did not find better alternatives.	• We support the CMA's provisional decision to retain an integrated approach to assessing growth costs. We agree that 'the data inconsistencies invalidate the use of stand-alone models' (para 4.468), and welcome the acknowledgment that 'growth costs are a routine cost incurred by the companies and growth costs will be related to the cost drivers included in the base cost models'

[39] Ofgem, RIIO2 draft determinations core document, July 2020, p. 7.
[40] For example, see the Contracts for Difference (CfD) auction results for Round 3 compared to earlier rounds.
[41] For example the Renewables Obligation has closed, limiting future growth to inflation linked price changes for existing volumes of generation within the scheme.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		• The CMA uses ONS household projection to forecast future growth, updated to use the 2018 release. • The CMA applies a growth unit rate adjustment to correct for intensity of future growth compared to the historical period. It removes the 50% cap from the negative adjustment. • The CMA rejected Anglian Water's deep dive of growth expenditure.	(para 3.469). We further welcome the CMA's acknowledgment that the integrated models combined with the unit rate adjustments, deep dive assessments and a true-up mechanism are a sensible and pragmatic approach (albeit specific comments on the latter). • We support the CMA's use of 2018-based ONS projections, and its finding that companies' forecasts from their WRMPs historically overestimated growth rates. We agree that 'ONS household growth projections are a practical and suitable source for growth forecast' (para 4.493) in the light of their consistency with historical trends. • We welcome the CMA's provisional decision to retain the growth unit rate adjustment to complement the integrated approach. We agree that if it was removed 'it would risk underfunding companies in high growth areas and overfunding companies in low growth areas' (para 4.478). We also support the CMA's provisional decision to apply a full downward adjustment – we have indicated before that this is an area where we could have gone further.
Cost adjustment claims – capital maintenance (Anglian)	pp. 230-234, paragraphs 4.561-4.575	• The CMA rejects Anglian Water's cost adjustment claim for capital maintenance as the company's arguments relate to industry-wide considerations, and as increases in the asset base were reflected in scale variables used in our base	• We support the conclusion reached by the CMA. Anglian Water's cost adjustment claim is clearly lacking in evidence to support it. • We acknowledge the concerns of the CMA regarding the potential issue with appropriately considering forward-looking capital maintenance

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		allowance. Further, the CMA concludes that although Anglian Water may have a different capital maintenance profile to other companies this does not necessitate an increase in its totex allowance.	needs within our framework of econometric modelling of historical costs (paragraph 4.181). • We further acknowledge the potential link with this to issues raised by the CMA in relation to incentivising companies to make efficient decisions on investment timing (paragraph 5.407), following the example relating to smart metering. • We consider that our allowances provide adequate funding for companies overall and companies efficient in a given area will benefit over the medium to long-term, However, we will review how our framework for setting cost allowances incentivises companies to actively seek such efficiencies and optimally manage their assets over the longer term. We will engage with the industry on this issue during the development of our PR24 methodology.
Cost adjustment claims – sludge transportation (Anglian)	pp. 234-235, paragraphs 4.576-4.580	• The CMA rejects this cost adjustment claim due to low materiality and information asymmetry.	• We support the CMA's decision. The value of the claim falls under the threshold for a bioresources related cost adjustment claim, and Anglian Water has not provided any additional evidence to the CMA.
Canal & River Trust claim (Bristol)	pp. 239-241, paragraphs 4.594-4.601	• The CMA allows £8.6 million for this cost adjustment claim. The CMA states that these costs are atypical and not robustly captured within our	• We consider a further £2.7 million increase in Bristol Water's allowance is not justified. Our final determination base cost allowance for the company's water resources price control is already higher than requested. Additionally, the

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		base cost models, and so should be allowed in full. • The CMA has not identified significant factors that are likely to offset the additional costs relating to Canal & River Trust payments.	CMA's provisional decision is based on **incorrect information**. We provide our response in appendix A6.
Unmodelled costs – abstraction at Kielder (Northumbrian)	pp. 241-243, paragraphs 4.602-4.612 p. 763, paragraph 14.15 (a)	• The CMA provisionally allowed £61 million for the Kielder scheme with 100% pass through rate. • Any over or under spend should be borne or passed back to customers via a PR24 reconciliation mechanism.	• We support the CMA's decision. As discussed in our response to Northumbrian Water's statement of case,[42] the company was not aware of the increased abstraction charges by the Environment Agency ahead of our final determination and these charges were therefore not taken into account in our final allowances. • We suggest that any over or underspend be reconciled through the cost reconciliation model at PR24. The abstraction charges that Northumbrian Water pays with respect to Kielder would be removed from the costs subject to the 75:25 sharing rates and the total over or underspend borne by or returned to customers.
Unmodelled costs – bulk supply agreement with Thames Water (Northumbrian)	p.242, paragraphs 4.606-4.607 p. 243, paragraphs 4.613-4.614	• The CMA does not make an allowance for the Thames Water abstraction. Increases in these costs are subject to a 75/25 (customer / company) cost sharing arrangement which the CMA considers	• We support the CMA's decision. As discussed in our response to Northumbrian Water's statement of case,[43] we did not consider that the company's new evidence warranted an adjustment to our final determination allowance, but that any

[42] Ofwat, 'Reference of the PR19 final determinations: Response to Northumbrian Water's statement of case, May 2020, pp 68-69, paragraphs 3.166-3.167.
[43] Ofwat, 'Reference of the PR19 final determinations: Response to Northumbrian Water's statement of case, May 2020, pp. 69-70, paragraphs 3.168-3.171.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		appropriate, given the company's management influence over the costs.	additional cost not included in our allowance will be dealt with under the cost sharing arrangement.
Unmodelled costs – Traffic Management Act (Yorkshire)	pp. 243-246, paragraphs xxx	• The CMA makes a £21.6 million allowance. • The CMA agrees that a 50% reduction to Yorkshire Water's estimated costs is reasonable.	• We support the CMA's decision. As discussed in our response to Yorkshire Water's statement of case,[44] we considered that the implementation costs included within the Traffic Management Act costs were already included within our base allowance. We also considered that Yorkshire Water's forecast costs were significantly higher than both historical costs and the majority of the sector.
Unmodelled costs – Business rates (All)	pp. 246-250, paragraphs 4.622-4.640	• The CMA has provisionally determined that a 90/10 (customer/company) cost sharing arrangement for business rates is appropriate, having compared with other regulated sectors.	• We acknowledge the CMA's recognition of the uncertainty surrounding the level of business rates, however we disagree with the provisional decision to allow a 90/10 sharing arrangement for the reasons presented below. Since 2011-12 seven companies have reported business rates' rebates, primarily as a consequence of challenging the Valuation Office Agency (VOA). This shows the importance of keeping a meaningful incentive on companies to negotiate with the VOA on behalf of their customers. • At PR14 we included a Notified Item for water service business rates. Under the Notified Item companies would be compensated for 75% of any additional expenditure on business rates

[44] Ofwat, 'Reference of the PR19 final determinations: Response to Yorkshire Water's statement of case', May 2020, pp. 65-66, paragraphs 3.145-3.150.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			(80% for South West Water). If the Notified Item was not triggered any overspend on business rates would be shared with customers at the totex menu rate of between 44% and 54%. The Notified Item was not triggered during AMP6. In Bristol Water's PR14 redetermination the CMA 'identified no grounds to change the uncertainty mechanism for business rates set out in Ofwat's final determinations for Bristol Water'.[45] • Under our final determinations companies are more protected against changes in business rates at PR19 than they were at PR14. • Severn Trent Water agreed that a 75/25 sharing arrangement retained an incentive to control business rates where companies can.[46] • The CMA's provisional decision increases the complexity of reconciliations at PR24 and creates a two-tier pass-through mechanism which may not be proportionate for similar cost items with marginal differences.
Unmodelled costs – Business rates overstatement (Northumbrian)	p. 250, paragraphs 4.461-4.642	• The CMA agrees with Northumbrian Water and Ofwat that an over-allowance for business rates of £11.74 million per year was made.	• We support the CMA's decision. As discussed in our response to Northumbrian Water's statement of case,[47] we accepted the company's revised forecasts for business rates and recommended that the CMA corrected the over-statement by

[45] CMA's Bristol PR14 Determination, October 2015, p. 54, paragraph 3.67.
[46] Severn Trent CMA submission (May 2020).
[47] Ofwat, 'Reference of the PR19 final determinations: Response to Northumbrian Water's statement of case, May 2020, p.68, paragraphs 3.163-3.165.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		• The CMA therefore removes £59 million totex over-allowance for AMP7 made at final determinations which we were not aware of at the time.	reducing the allowance by £11.74 million per year (£59 million over AMP7).
Unmodelled costs – Industrial Emissions Directive (Northumbrian and Yorkshire)	pp. 250-255, paragraphs 4.643-4.664	• The CMA allows Northumbrian Water £12 million totex to address compliance with the IED due to changing interpretation of this legislation that is likely to generate some costs for the company during AMP7. • CMA is concerned that the level of detail supplied by Yorkshire Water was insufficient to robustly assess the likely costs for compliance. • CMA proposes a costs sharing mechanism on a 75/25 (customer/company) basis. For Northumbrian Water this applies to costs above £12 million. For Yorkshire Water this applies to all costs incurred complying with the IED requirements.	• We do not consider it appropriate to treat this provisional allowance as an unmodelled base cost allowance. In our final determinations we allowed some companies unmodelled opex costs relating to the costs of administering existing IED permits. We consider capex costs to meet new IED requirements are enhancement costs, and therefore not necessarily governed by the same cost sharing regimes as other unmodelled costs area. If the CMA continues to make an allowance it should be considered as an enhancement allowance. • We accept that Northumbrian Water's provisional allowance of £12 million is given on the basis of the CMA receiving detailed evidence from the company and supporting views from the Environment Agency, and that the allowance will be subject to a clawback. • We agree with the CMA that there is uncertainty over the costs, if any, of complying with the IED requirements. However, we do not consider that a reconciliation mechanism with a 75:25 sharing ratio for money spent incentivises efficiency and sufficiently protects customers of either Yorkshire or Northumbrian. The CMA itself noted that

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			Yorkshire's estimates were relatively higher than Northumbrian Water's. • We recommend that the CMA sets a maximum expenditure limit for Yorkshire Water alongside the mechanism of 75:25 cost sharing rate. Any amount above the maximum will be subject to the company's cost sharing rate. • We note that Anglian Water does not require additional costs nor reconciliation mechanism even though it is under the same regulatory regime. We consider this is appropriate. We do not consider it is necessarily the case that meeting the IED regulations requires additional investment.

Enhancement costs

Table 2.2: Ofwat response to CMA enhancement cost provisional findings

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Benchmark models – Wastewater models, including P removal (Anglian, Northumbrian, Yorkshire)	pp. 266-288, paragraphs 5.23-5.89; p. 297, paragraph 5.133	• The CMA assessed the wastewater enhancement models, focusing primarily on P removal as the largest totex allowance, but also the next three largest modelled allowances for wastewater: storm tank capacity at sewage works, flow to full treatment and network storage. • The CMA explored approaches other than benchmarking models but found limitations with them. • The CMA stated that a more effective ex-post reporting mechanism for actual versus forecast P removal costs should be considered and has invited submissions on how this could be implemented. • The CMA has provisionally made the following decisions regarding	• We consider that the CMA's use of additional models, and the decisions on the revised allowances for Anglian Water and Northumbrian Water, to be balanced and reasonable. • However, in the case of Yorkshire Water we disagree with the CMA's provisional decision which was based on an **incorrect assumption**. Specifically, we disagree with the exclusion of three United Utilities schemes from the dataset used for one of the models: Bury, Rochdale and Rossendale. We understand that the CMA excluded these schemes on the grounds that they were atypical in that they were not based on the provision of on-site treatment but involved a catchment management approach that was not available to Yorkshire Water. This is not the case. Three of the largest of these schemes have been costed by United Utilities on the basis of conventional on-site treatment to meet a specified future consent limit and were only noted as being subject to "Group measures" in the WINEP spreadsheet because they discharge to a common catchment. The future consents assumed by United Utilities for these schemes were 0.4mg/l at Bury WwTW and Rochdale WwTW and 1mg/l at Rossendale. We therefore consider it appropriate to reinstate these three schemes in the dataset used by the CMA to determine Yorkshire Water's totex allowance. • With regard to a more granular (ie scheme level) ex-post reporting mechanism for P removal costs, this was not considered at PR19

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		the modelled WINEP P removal allowance: • Anglian Water – no change from final determination • Northumbrian Water - £4 million increase • Yorkshire Water - £9 million increase • The CMA provisionally agreed with our approach for the next three largest wastewater modelled allowances and found no reason to adjust our final determinations for these.	due to the generally tighter consent limits in the AMP7 environmental programme and the different technology required to meet them. We will revisit the issue for PR24 depending on the anticipated scale of the P removal programme in AMP8 and the likely consent limits to be met. The existing vehicle for companies to report outturn costs, the "Annual Performance Report," could be adapted if it was judged to be beneficial to collect this information. Alternatively, a new discrete Information Requirement could be developed.
Deep dive 1: Living with Water Partnership (Yorkshire)	pp. 314-315, 385 paragraphs 5.204 - 5.207, 5.522	• The CMA has provisionally allowed £23 million for this cost adjustment claim. • The CMA stated that the level of evidence on certain aspects of the scheme is still relatively limited. It applied a 20% challenge in line with our approach to challenging schemes with insufficient optioneering evidence. • The CMA has provisionally included a new performance commitment and ODI to ensure that if the proposed scheme does not proceed, Yorkshire Water will	• We support the CMA's concerns and findings that evidence on aspects of the scheme is limited. We agree that Yorkshire Water provided insufficient evidence of a full options appraisal. We are also concerned that the innovative nature of the solutions may be overstated. For example, the proposed solution at the highest cost "hot spot" has none of the amenity or biodiversity benefits of the other proposed solutions but is simply a storage solution under permeable paving which is hardly a "blue-green" solution. The solutions with blue-green benefits can be completed at a cost according to Yorkshire Water of £17.3m. We consider it is appropriate to assess the full proposal in detail and its suitability for an additional allowance. • We consider that a 20% cost challenge is appropriate for a scheme where there is a lack of evidence of a full options appraisal. However, the CMA also states that the level of costs Yorkshire Water included were not an efficient and robust estimate. We consider it would also

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		return the provided allowance to customers. The CMA has provisionally decided that the company's proposed dual-test performance commitment and associated ODI provides customers with the appropriate protection. .	be appropriate to make an additional cost efficiency challenge to calculate an allowance. • We support the CMA's provisional determination to include a performance commitment and associated ODI for the Living with Water Partnership to robustly protect customers' interests. However, we have noted below some essential considerations for the CMA. • In our final methodology and final determinations we emphasised that where scheme specific performance commitments were unavoidable, they should be focused on delivering what really matters to customers. We also stated that: customers should be engaged on these performance commitments; companies should include an explanation of how their proposals ensure customers will be compensated in the event of non-delivery or delay including how the proposed compensation would be relative to the costs customers would be paying, and relative to the benefits of the scheme the customers would be foregoing. Furthermore, we stated that a company should explain what alternatives to scheme-specific performance commitments and ODIs it had considered and what engagement it had undertaken to support its approach.[48][49] • We consider that detailed customer engagement was not feasible for this performance commitment given the timeline of the reference process, but that any customer protection proposed for the Hull and Haltemprice scheme should still align to the ideals and principles of the outcomes framework. That is, it should focus on customer outcomes and benefits.

[48] Delivering Water 2020: Our final methodology for the 2019 price review. Appendix 2: Delivering outcomes for customers, December 2017, section 2.5.4, pp. 40-42.
[49] PR19 final determinations: Delivering outcomes for customers policy appendix, updated April 2020, section 6.2, pp 135-141.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			• We would like to draw the CMA's attention to three key points in relation to the proposed performance commitment: i) the extent to which it delivers the ultimate outcome for customers (a reduction in flooding risk); ii) the need for it to be contingent upon genuine and successful partnership working which was the basis of the funding being awarded by both Ofwat and the CMA; and iii) the need for focused assurance from a suitably qualified independent third party. We address each of these points in turn below. • First, we consider Yorkshire Water's proposed performance commitment does not incentivise the right outcome for customers. The Hull and Haltemprice scheme is driven by the need to reduce the significant risk of sewer flooding in the region caused by its local characteristics.[50] The performance commitment proposed incentivises the company to spend its expenditure allowance, but only has reputational incentives to deliver what customers really want – a reduction in the risk that they will experience sewer flooding. Given the disproportionately higher risk that customers in Hull face in terms of flooding we consider that reputational incentives alone are inadequate and that direct financial incentives relating to service levels are more appropriate. The current format of the performance commitment raises the possibility that customers will end up paying for service improvements they never receive. It is for this reason that our final determinations contained no scheme-specific performance commitments that were incentivised based on expenditure spent. We defined over 50 scheme-specific performance commitments, all designed to encourage companies to deliver the ultimate outcome for customers. For example, 'percentage of properties able to be supplied by more than one treatment works' or 'months delay' to the delivery of a strategic scheme, or 'kilometres of river improved'. We

[50] Competition and Markets Authority, 'Provisional findings report', September 2020, section 5, pp. 308-309, paragraphs 5.177- 5.183.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			consider a more appropriate performance commitment would apply underperformance payments if the stated properties' risk reductions were not achieved: ○ 494 properties for 1 in 5 year events ○ 808 properties for 1 in 30 year events ○ 644 properties for 1 in 75 year events • There are similar performance commitments that the CMA could use as a starting basis. For example, 'PR19UU_G05-WWN' uses modelled risk of flooding. • Setting the performance commitment levels based on outcomes and customer benefits brings further advantages to customers. It avoids the need for the company to constrain itself to the delivery of specific hotspot solutions that were originally identified some time ago as part of the business planning process. The company would be able to flex and adapt what it ultimately delivers based on the latest innovative developments and an updated view of the most optimal cost benefit joint solutions. Secondly, it ensures that customer benefit is contingent upon genuine partnership working (our second consideration for the performance commitment definition and terms) since the levels of risk reduction proposed by the company (stated above) are based on the customer benefits from the partnership programme in its totality (£50m) not just the company's component (£23m in the provisional findings). • Third, however the performance commitment is ultimately defined (whether by expenditure spent or by benefits delivered to customers through modelled risk reduction), we consider that the performance commitment definition should contain a clear and unambiguous requirement on the company to obtain independent third party assurance from an appropriately qualified organisation that confirms customers have received the intended benefits – that their risk of

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			experiencing sewer flooding has reduced as a **direct result of the investment undertaken**. There are similar performance commitments that the CMA could use as a starting basis for this requirement, for example, 'PR19UU_G05-WWN' also specifies a requirement for independent audit.
Deep dive 2: Essex Resilience (Northumbrian)	p. 22, paragraph 58(a) pp. 316–327, 385, paragraphs 5.214-5.255, 5.522 pp. 765-766 paragraphs 14.23-14.25	• The CMA has allowed the full requested totex of £20.4 million for this transfer scheme. • The CMA states that this decision was 'finely balanced' and reflects the overall balancing of legal duties (consumer and resilience) • The CMA states that the company's submissions make it difficult for them to undertake any cost-benefit analysis, and the company has undertaken minimal optioneering. It also acknowledges that Northumbrian Water does not argue for the scheme on the basis of an assessment of risk factors and the likelihood of them occurring, but on observing the two near-miss events.	• We do not support the CMA's decision to allow the £20.4 million totex requested by Northumbrian Water for this scheme. The CMA has provided **insufficient explanation** for us to be able to fully understand how it has reached its provisional decision. • The CMA acknowledges that 'Northumbrian's submissions make it difficult for us to perform any form of cost benefit analysis.'[51] In other words, the **evidence and arguments by the company were an inadequate basis on which to assess the scheme**. In particular, the CMA recognises that Northumbrian Water did not present any assessment of potential risk factors and the likelihood of these occurring. • Despite this lack of any proper basis to evaluate the scheme, the CMA has gone on to make provisional decision based on 'a judgement about the overall likelihood of a potential event (or combination of events) occurring, compared to the impact of such an event, and whether the cost to customers of reducing this residual risk is justified.'[52] The CMA adds that 'the evidence supports a view that the residual risk that would be addressed by this scheme is material (especially given that Northumbrian customers in Essex experienced

[51] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 326, paragraph 5.245.
[52] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 326, paragraph 5.250.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		• The CMA has provisionally determined that a performance commitment and ODI should be included for Northumbrian Water's Essex Resilience Scheme to incentivise delivery and protect customers. It has provisionally decided to extend the existing water resilience scheme performance commitment and ODI to include the Essex Resilience Scheme and to increase the ODI rate to reflect the increased value of the programme. The CMA agreed in principle with Northumbrian Water's proposal to increase the incentive rate from -£0.294 million per unit of delivery (%) to -£0.388 million to reflect the increased value of the resilience programme.	two near-misses within a recent three year period), while the cost of addressing the issue is relatively modest particularly given the number of households potentially affected and the long-life nature of the solution which would provide ongoing benefits over many years.'[53] But then it also notes, 'there may be other similar circumstances in which the residual risk identified by the water company would not justify additional funding of enhancement activities.'[54] • As a preliminary point, we have difficulty reconciling the CMA's views about the sufficiency of the evidence, and what the evidence shows, with its recognition that what the company presented was inadequate. Put simply, we do not understand what "sufficient evidence" – both about the materiality of the residual risk and about the likelihood of the scheme addressing such residual risk – the CMA is referring to. • Moreover, and in any event we do not consider that providing an allowance based on a judgement that is supported by weak evidence and the fact that the cost would be modest furthers the consumer and resilience objectives. The CMA rightly observes that the regulatory regime 'is based on quantified risk-based approach planning…even for long-term, uncertain events.'[55] Without a clear case, grounded in such a quantified approach that supports investment in the scheme, neither objective is likely to be achieved. • The CMA suggests that our assessment approach may not have been broad enough to consider the wider implications of such expenditure. This is not a correct characterisation of our assessment. In the case of this transfer scheme, we looked in great detail at the wider interactions with the water resources management plan,

[53] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 326, paragraph 5.251.
[54] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 327, paragraph 5.252.
[55] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 326, paragraph 5.245.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			existing built-in resilience, and the risk mitigation from Layer water treatment works (WTW) dissolved air flotation (DAF) improvements. We assessed the scheme in its own right and compared the quantity and quality of evidence with other companies' resilience business cases. Our feedback throughout PR19 enabled the company to submit additional, persuasive evidence. By allowing this expenditure in full, we consider that the CMA has lowered the evidential bar that we set and applied consistently when considering scheme endorsement. • Below we explain why we consider that **making an allowance for this scheme now is not appropriate, and a better approach would be for the company to develop a more robust case for PR24**. We consider also that if the CMA were to make an allowance, it would be appropriate to apply a cost challenge in line with its approach to challenge poor evidence in other deep dives. • The investment at Layer WTW aims to restore its deployable output of 145ml/d – this should mitigate the risk of insufficient water supply in the Essex region, whether it is due to algal blooms or any of the other risk factors stated by the company (eg reduced rainfall or higher average / peak demand). By restoring the deployable output of Layer WTW to pre-2016 levels, in order to treat more water from Abberton reservoir, it will reduce the demand on Hanningfield reservoir which is used to make up supply shortfall. This is why an assessment of the residual risk to water supply from Hanningfield is crucial. • Further, the CMA recognises that 'Northumbrian does not primarily argue for the scheme on the basis of an assessment of potential risk factors and the likelihood of these occurring, but instead on the basis of observing a number of recent 'near misses' in 2016 and 2018.'[56]

[56] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 325, paragraph 5.245.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			We consider that the outage incidents in 2016 and 2018 would not have occurred had the investment at Layer WTW been in place but we also note that even without the investment at Layer WTW, Hanningfield reservoir did not drop to its emergency storage level during the 2016 or 2018 events. There were no recorded adverse impacts, such as low pressure or supply interruptions, and drought procedures, such as water use restrictions, were not initiated. • It is important to understand that a decision on this investment as part of the PR19 determination is not a "now or never" decision. As such, a better approach to funding the Essex Resilience scheme now, in light of the poor evidence for the scheme and funding at Layer WTW, is to invite the company to provide robust evidence for the next price review, and, if such evidence is presented, to allow funding for the scheme then. • The Essex water network is very well connected, and will become more resilient with the investment at Layer WTW. The risk of postponing a decision on this investment until robust evidence is presented is low. On the other hand, there is a material risk that customers could pay for an interconnector that does not provide additional resilience, and that companies continue to present poor evidenced investment proposals in the future. • Related to our proposal to delay funding for this scheme until, and if, robust evidence is provided, we note that the company planned to undertake a full zonal study of the Essex System, concluding in 2021, to explore opportunities for a more sustainable and resilient network[57] which, we assume, is to align with the first draft of the Water Resources East alliance's Regional Plan.[58] We also note that the

[57] Northumbrian Water – Appendix 3.3.7 Layer Business Case, April 2019, p.6 (SOC141).
[58] https://wre.org.uk/about-us/ - 'Our Planning'.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			Water Resources South East alliance is in the process of developing its Regional Resilience Plan with a timeline for publication of its final plan in winter 2023,[59] which the company could also seek to link into to identify optimised, regional solutions. • Notwithstanding the above, if the CMA decides to make an allowance for the Essex Resilience scheme, we consider that the proposed costs should be subject to an optioneering challenge (20%) and an efficiency challenge (10%). Not to apply these cost challenges would be internally **inconsistent with the approach the CMA has applied** in other deep dive assessments where the optioneering and cost efficiency evidence were lacking. • In the event that the CMA were to provide an allowance for the Essex Resilience scheme, we agree that there should be associated customer protections for non-delivery or late delivery. We support extending the existing bespoke water resilience scheme performance commitment to cover the Essex Resilience scheme. The performance commitment will need to be amended to reflect any changes to the activities that are being supported and the ODI rate will need to be increased to reflect the increased cost allowance. The ODI rate set at Final Determination for the entirety of the activities covered in the performance commitment (not just the Essex Resilience scheme element) should be re-calibrated to reflect any changes to the cost allowance, cost-sharing rate, WACC and run-off rates from those used in setting the ODI rate in the December 2019 determinations.

[59] https://www.wrse.org.uk/our-response - 'Timeline of delivery'.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Deep dive 3: Sewer Flooding Resilience (Northumbrian)	p. 22, paragraph 58(b) pp. 327-336, 384 paragraphs 5.256-5.295, 5.522 p. 766, paragraph 14.23(b)	• The CMA rejected the £86 million requested totex for proactive sewer flooding schemes. It did not find robust evidence that there was incremental benefit for customers beyond what was already funded in base. • The CMA has serious concerns that the company's explanation of the proposal appeared to overlap heavily or entirely with outcomes delivered from the base allowance. • The CMA shares our concern that this enhancement expenditure represents funding to catch-up with the performance of the rest of the sector. The CMA also considers that allowing this expenditure risks double-funding activities. • Given that the CMA has not provided any additional funding for this enhancement scheme, it has provisionally decided to remove the bespoke performance commitment and associated ODI. The CMA considers that the internal sewer flooding common	• We support the CMA's provisional decision to disallow the £86 million enhancement totex, and the recognition that our totex and outcomes framework allows companies to choose the most efficient delivery method of their sewer flooding programme, be it reactive or proactive. • We expect that Northumbrian Water will continue its activities proactively to reduce the risk of sewer flooding, alongside the other activities it will be undertaking to improve its performance in this area, and to work with third parties and other stakeholders to deliver improvements in internal sewer flooding. In the absence of a bespoke performance commitment specifically focussed on this, we will be looking to the company to report on its progress in its annual performance reporting.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		performance commitment provides an appropriate mechanism for incentivising the delivery of activities to reduce internal sewer flooding.	
Deep dive 4: Strategic Interconnectors (Anglian)	pp. 337-351, 385 paragraph 5.296-5.366, 5.522	• The CMA's provisional findings allowed the full requested costs for this scheme increasing our final determination allowance by £38.9 million. The CMA supports Anglian Water's low-risk approach to setting the capacity of the interconnector pipeline. The CMA considers the marginal cost savings of not providing this capacity is outweighed by the risk that it will be required, and that the company bears the risk of over-capacity. Further the CMA considered it low risk that the costs requested were inefficient and insufficient optioneering undertaken. • The CMA's provisional determination on customer protection is to: (a) adjust Anglian Water's existing performance commitment to being focused on	• We do not consider it appropriate that the CMA allows the company its full requested costs for this programme. We consider that the logical starting point is to analyse the evidence Anglian Water provides in support of its selection of a preferred programme. Without sufficient evidence to understand those choices, it is difficult to evaluate whether the cost savings are marginal. • The CMA's provisional findings on the cost efficiency of the interconnector programme are supported by evidence provided by its engineering consultants WRc. The CMA states that WRc, having been asked to 'comment on Anglian's cost estimates in relation to independent benchmarks,' advised it that out of seven schemes reviewed, five cost estimates 'appear reasonable' and two 'seem substantially greater than expected'. It is then clarified that WRc consider the cost estimates for the two high-cost schemes are as expected due to extenuating circumstances.[60] Clearly, it is **not possible for us even to understand WRc's approach and the evidence and benchmarks on which it has relied in advising the CMA, let alone meaningfully to comment on these, on the basis of this explanation alone**. • We therefore requested from the CMA on 6th October a copy of the evidence from WRc relating to this area. On 15th October 2020 the response from the CMA was 'the advice WRc provided us was not

[60] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 325, paragraph 5.342.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		capacity delivery, rather than the delivery of water; and (b) remove intra-period ODI penalties, applying a claw-back on the schemes at the end of year 5 if they are not delivered.	in the form of a single engineering report, it was provided through a range of channels including emails and conversations. We have in the provisional determination report provided a summary that gives the gist of the WRc advice and how it informed our position therefore we do not consider it necessary to make available the separate emails and notes of conversations we have had with WRc.' • During our determinations we did not accept that the company's costs were efficient, and we disagree with the conclusions reached by the CMA. However, in the absence of the underlying evidence requested from the CMA, our ability to respond fully to its provisional findings is, necessarily, severely constrained. In what follows, we do the best that we can to comment on the basis of the limited/summarised information available. • We agree that future strategic risk and headroom should be considered when determining an appropriate capacity for the interconnectors. However, we consider that the provisional findings give the company an undue benefit of the doubt on the basis of the size of the challenge being relatively small. While securing long-term resilience in the round is clearly important, and indeed achieving the resilience objective is one of the primary duties, that requirement does not bring with it an obligation to accept companies' proposed business plans without requiring that they are supported by sufficient evidence. Our disagreement with the CMA's position does not arise solely from differences in view on particular factors such as whether to include headroom for the impact of climate change; we acknowledge that there might be different judgments on such points. Rather, we disagree with the CMA about what could constitute appropriate headroom for the scheme based on the evidence provided. Following detailed consideration of the company's plans, we have made an assessment of the overall

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			headroom required for Anglian Water to provide future resilience incorporating factors such as climate change and population growth. We simply **do not consider that any allowance of additional headroom beyond our final determination is necessary nor is it supported by evidence provided**. • We agree that there should be customer protections associated with the funding for the Strategic Interconnectors Programme, and included such a performance commitment in our December 2019 determination.[61] • We consider that the definitions and requirements in this performance commitment are aligned with the CMA's provisional determinations. We agree that the performance commitment should be defined against "capacity delivered" rather than "delivery of water". In the existing performance commitment, the performance commitment level and ODI unit rates are set by reference to "The cumulative increase in megalitres per day (Ml/d) capacity delivered through the internal interconnection programme since 1 April 2020". We also agree that there are various factors that could impact on the nature and timing of bringing into operation of that capacity. In the existing performance commitment we specify that 'an increase [in capacity] will be recorded once schemes are delivered and assurance is provided that they are able to operate to the capacity benefit as defined…' on an annual average basis. The company is required to provide external assurance by a third party to confirm this. • We note Anglian Water and the CMA's concerns that the performance commitment is potentially overly prescriptive (for example about the size and timing of each specific scheme), given the uncertainties and that the investments are potentially very

[61] Ofwat. PR19 final determinations: Anglian Water – Outcomes performance commitment appendix, p. 95.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			lumpy, and that the PC would be improved by allowing more flexibility over the nature and timing of the schemes contributing to increases in capacity delivered. The CMA has provisionally determined to address this by making it an end-of-period ODI, rather than having annual ODI penalties against an annual profile of delivery. In that event, we would like to see an accompanying reputational incentive for Anglian Water to report publicly on the Strategic Interconnectors Programme: for example for the PC to contain provisions for annual reporting of progress towards the target and the reasons for any deviations from the original plan. • The exclusions clause of the performance commitment deals with uncertainty relating to the reintroduction of the metaldehyde ban. This uncertainty has now been removed given the DEFRA notice that the use of metaldehyde will be banned from 2022. We consider that henceforth this clause should be limited to the period until the full ban is in place and issues relating to the persistence of metaldehyde in the environment if this is evidenced to impact scheme commissioning. • The ODI rate set at final determination for the entirety of the activities covered in the performance commitment (not just the additional cost allowances) should be re-calibrated to reflect any changes to the cost allowance, cost sharing rate, allowed return on capital and run-off rates from those used in setting the ODI rate in the December 2019 determinations. Based on the provisional determination alone (leaving aside any other potential changes to the performance commitment), we consider that the ODI

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			underperformance rate should be increased from £0.316 million/unit to £0.495 million/unit.[62]
Deep dive 5: Smart Metering (Anglian)	pp. 352-363, 385 paragraphs 5.367-5.424, 5.522	• The CMA has allowed an additional £5.5 million in cost allowances for the incremental cost of upgrading from a basic to a smart meter. However, the CMA did not find evidence to support Anglian Water's arguments on meter penetration nor those on the cost of meters for new properties. Further, the CMA did not provide funding for the company's cost adjustment claim for smart metering as it concluded the company should be able to manage activities in this area in its base allowance. • The CMA has provisionally determined to include a scheme-specific ODI to incentivise the delivery of the funded scheme, and to protect customers if	• The CMA has fully supported our decision not to allow the cost adjustment claim for smart metering. The CMA recognises that the company is able to manage these activities within its base allowance and that has the opportunity to manage the delivery of this programme efficiently within its base allowance, balancing the benefits against the costs. We consider the company's strategy to be discretionary and within management control and that customers should not pay extra because of it. However, we acknowledge the CMA concerns relating to incentivising companies to make efficient investment and will consult on this issue in developing our PR24 methodology (paragraph 5.407). • We disagree with the additional £5.5 million in cost allowance for the incremental cost of upgrading from a basic to a smart meter. The CMA appears to have based its provisional decision on additional information provided by Anglian Water but we consider there is **insufficient evidence** to allow the requested costs in full. In fact, the company has only identified a cost uplift for a smart meter and has not provided the evidence to identify the activities that are driving this additional cost in a smart installation in comparison to basic installation.

[62] For Anglian Water's ODI relating to Strategic Interconnector delivery (PR19ANH_39), our recalculated ODI rate takes account of the CMA's provisionally determined changes to the associated cost allowance and the relevant cost sharing rate. The cost allowance used to set this ODI rate includes £343.8 million funding for the internal interconnector programme plus £47 million funding for the associated treatment facilities, in line with our final determination. However, this recalculated ODI rate does not incorporate any potential adjustments arising from additional activities (which are currently in Anglian Water's direct procurement for customers (DPC) schemes) moving into the scope of the Strategic Interconnector Programme. If these activities are reallocated into the SIP, then the ODI rate for PR19ANH_39 should increase to reflect the aggregate totex allowed for all activities covered by this performance commitment.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		Anglian Water does not ultimately undertake this work. It has provisionally set the PC at the level of the complete meter rollout proposed by Anglian Water and calibrated the ODI rate based on the entire smart meter allowance. It has included a 'deadband' at 80% of the specified volume, above which no penalties would be paid.	• We agree that there should be associated customer protections for non-delivery or late delivery of the Smart Metering programme, and included such a performance commitment in our December 2019 determination (PR19ANH_38). The performance commitment level is set against the entire smart meter programme (1.096m units), as is provisionally determined by the CMA. • We note that the CMA has provisionally decided to rebalance incentives between delivery of meters and delivery of infrastructure by calibrating the ODI rate against full programme costs (direct costs plus infrastructure costs) with an 80% 'deadband'. This is in contrast to the existing ODI rate which is calibrated against direct metering installation costs with an accompanying provision to return £12.9 million of infrastructure costs to customers (if the company fails to deliver at least 50% of the metering scheme). The maximum non-delivery exposure under the existing performance commitment is around £28.3 million.[63] • We are unclear how the CMA's provisional determination on customer protection is intended to operate. The CMA states that the deadband (80%) would set the point 'above which no penalties would be paid'. A deadband would more typically form the zone in which no penalties are paid, with penalties being incurred for poor performance outside that zone. If the CMA's intention is to penalise the company for failing to undertake the final 20% of the programme then the effect of the CMA's provisional determination appears to be to weaken the maximum non-delivery exposure for the company to around £11.5 million even if performance is significantly lower than 80%, whereas if it is to expose the company to clawback for any

[63] Performance commitment PR19ANH_38: £14/meter ODI underperformance rate x 1.096m meters (£15.344m) plus £12.939m return of infrastructure costs if company fails to deliver 50% of metering scheme = £28.283m.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			underperformance down to 20% of programme volumes then its maximum exposure is around £45.9 million.[64] We also have more general concerns about the use of deadbands in performance commitments and ODIs which are set out in Section 3 of this document. • Whichever route is chosen by the CMA, the ODI rate set at final determination for the entirety of the activities covered in the performance commitment should be re-calibrated to reflect any changes to the cost allowance, cost sharing rate, allowed return on capital and run-off rates from those used in setting the ODI rate in the December 2019 determinations. As an example, the CMA's calculation of the provisional ODI rate, set out in footnote 1087 (p. 362), uses a cost-sharing rate of 50%, which is neither the cost-sharing rate set by Ofwat in December 2019 and used in the existing version of the ODI, nor the cost-sharing rate provisionally determined for Anglian Water by the CMA.
Deep dive 6: Water Resilience (Anglian)	pp. 363-367, paragraph 5.425-5.440	• The CMA provisionally decided to provide no associated increase in costs for these schemes. They are considered a part of the company's base cost and thus implicitly funded within our base allowance.	• We support the CMA's decision. The activities covered by this investment reflect incremental improvements in the company's approach to risk management and maintenance. We agree with the CMA that this is a part of ongoing day-to-day management and thus captured in historical base costs used to determine our base cost allowances.

[64] Option 1: CMA provisional ODI underperformance rate (£52.35/meter) x 1.096m meters x 0.2 = £11.48m; CMA provisional ODI underperformance rate (£52.35/meter) x 1.096m meters x 0.8 = £45.90m.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Deep dive 7: SEMD / non-SEMD (Anglian)	pp. 368-372, 385 paragraphs 5.445 - 5.466, 5.522	• The CMA provisionally allowed an additional £1.7 million funding for Anglian Water's SEMD activities to cover specific requirements that were identified during the course of AMP6 and not recognised at the time of PR14. • The CMA also allowed an additional £0.8 million in non-SEMD security funding. • The CMA provisionally determined to adjust Anglian Water's non-SEMD performance commitment and increase the associated ODI underperformance rate to reflect the increased cost allowance.	• We consider the CMA's provisional decision is based on an **incorrect assumption** that there are new legal requirements that justify an additional allowance. • In its decision, the CMA gives weight to the assertion in paragraph 5.450 that 'It appears to be common ground that Anglian's planned activities relate to new requirements, identified during the course of AMP6. The requirements were therefore not known at the time of PR14.' • We disagree that it is common ground that the planned activities relate to new legal requirements. We wish to be clear that the legal requirements are set out in SEMD 1998, and there were no new SEMD regulations that came into effect in the AMP6 (2015-2020). What may be new, is the identification by the company of new schemes required to comply with the existing legislation. • Our assessment approach at PR19 considered the overall security costs from 2011-12 to 2024-25 (a time period that covers the full SEMD programme) and provided companies with a cost envelope to complete the programme. Given our assessment approach, an identification of new schemes would not typically qualify for an adjustment – this would provide the incentive for companies to efficiently manage the SEMD costs. Only if there was a new legal obligation we would automatically allow related efficient costs. We therefore disagree with the premise on which the CMA has decided to make this allowance. • We consider that Anglian is fully funded to meet all of its SEMD requirements, no matter when these were identified. In its PR14 business plan Anglian requested £26.1 million for SEMD capex across both water and wastewater. In 2015-20 it spent only £14.4 million (2017-18 prices) on SEMD capex. That is 45% (or £11.7m)

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			less than it requested in PR14 (we funded 99.7% of wholesale totex the company requested at PR14). This scale of saving is most unlikely to have been generated purely by efficiency. Contrary to the CMA's provisional opinion, we consider that not only can a previous cost envelope be sufficient to cover unplanned activities but that newly identified asset improvements should not automatically create an expectation of or qualify for additional funding. • We remind the CMA that Anglian Water has a history of submitting high forecasts in business plans, and also that our benchmarking analysis of PR19 business plans consistently revealed that Anglian Water submitted high cost forecasts across base and enhancement. Anglian was one of few companies to request relatively material security costs both in water and in wastewater at PR19. • In relation to non-SEMD, we welcome the CMA's acknowledgement that Anglian Water's forecast costs are not demonstrably efficient. We accept that the CMA has a different view of the appropriate cost challenge. • In the event that the CMA increases the cost allowance for non-SEMD activities, we agree that the existing performance commitment will need to be amended to reflect any changes to the activities that are being supported and the ODI rate will need to be increased to reflect the increased cost allowance. The ODI rate set at final determination should be re-calibrated to reflect any changes to the cost allowance, cost-sharing rate, allowed return on capital and run-off rates from those used in setting the ODI rate in the December 2019 determinations.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Deep dive 8: Bioresources (Anglian)	pp. 372-377 paragraphs 5.467-5.490	• The CMA provisionally allowed Anglian Water £12.5 million to deliver additional digestion capacity, and suggests the most appropriate approach to managing the risk of any double funding is to consider the treatment of the bioresources RCV as part of the market opening.	• Since the findings of the 2011 OFT market study into sludge and organic waste,[65] we have worked diligently to remove barriers to a successful bioresources market. We have created a separate price control, required the publication of market information, and set out transfer pricing rules to ensure that customers benefit from trading using regulated assets. We are undertaking further work and have commissioned Jacobs to help solve a trade costing issue the companies have raised. We have recently launched a bioresources market review. • If a company has existing capacity, it can be difficult for trading to be beneficial due to transport costs. Therefore one of the key drivers of trading is when new capacity is required. From 2020 onwards we have provided no guarantee of the post 2020 RCV, to encourage companies to identify the most beneficial option whether that is to trade or to build the capacity (at their own risk) themselves. • Giving Anglian Water an allowance to build its own capacity forecloses the market by creating excess capacity which could be provided by other market participants. In a query response about assumed costs of trading,[66] Anglian Water states, 'We accept also that our calculation is based on our own costs, which may be less efficient than those of third party treatment providers.' Therefore, allowing Anglian Water's proposed costs for the capacity is poor value for customers. The whole life cost comparison between constructing its own capacity and using a contract that Anglian Water provided to the CMA is incomplete as its own capacity cost does not

[65] OFT, September 2011, Organic waste market study
[66] Ofwat, response to RFI 012 Question 10.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			include annualised capex costs of the asset it would build which are included in any "fully loaded" contract price. • Anglian Water proposes to construct the additional capacity at Whitlingham (Norwich), far away from its borders with other companies. However, since much of the company's sludge is already transported by road, it does not matter precisely where that capacity is constructed (although we note the relatively long travel distances for much of the Anglian region to the proposed site at Whitlingham). The company's areas with more significant forecast growth, such as the Ox Cam arc, are closer to its borders with other companies. In its September 2018 business plan, Anglian Water proposed £17.5 million capex to construct additional capacity at both Whitlingham (6,400 tds pa) and its Pyewipe (Grimsby) site (2,200 tds pa) which is minutes by road from Yorkshire Water's Hull sludge treatment site. We note that Yorkshire Water also requested £25.3 million for 14,050 tds pa of additional digestion capacity at Knostrop (Leeds) in its September 2018 business plan, but accepted the need to look for market solutions by not disputing our lack of capex allowance in its reference to the CMA. We consider that a market solution is the best option for both Yorkshire Water and Anglian Water. To make an allowance for Anglian Water means the CMA's provisional findings are **internally inconsistent** with the market solution for Yorkshire Water. • To estimate its additional sludge volumes from population growth Anglian Water used the same assumptions as in its WRMP which we consider to be too high, as we have previously set out.[67] The forecast capacity requirements are therefore likely to be overstated. Our final

[67] We provided evidence of the considerable overestimate provided by the 2009 WRMP forecast growth rate as compared to outturn in our response to Anglian Water's statement of case, May 2020, pp. 68-75.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			determination approach to setting base cost allowances using ONS 2016 assumed an increase in the number of properties connected for wastewater services of 118,035 between 2019-20 and 2024-25. Anglian Water assumed an increase of 211,283 properties. We therefore consider than the need for additional capacity to deal with additional population growth in Anglian Water's case is overstated and should be reduced by 56%. We note that in the CMA's provisional findings the growth forecasts for Anglian's region are very similar between the 2016 and 2018 ONS forecasts. It may be that a smaller and cheaper solution is possible for the lower population growth and not necessarily at Whitlingham. • Even if Anglian Water were to be funded in full for this additional capacity, there is nothing preventing it going out to tender following the redetermination and finding a market solution, with the additional funding simply being transferred to shareholders (as there is no cost sharing on the bioresources control). We consider if an allowance is made there should be a claw back mechanism for any capacity not built. We are not aware of any public attempts by Anglian Water to undertake serious tendering activity for a market solution. We note that better engagement has already been undertaken by other companies, such as United Utilities which recently issued a PIN for services for 30,000 dry tonnes of sludge per year. We are also aware that the EA's sludge strategy will be completed in 2023,[68] which will level the playing field enabling other organic waste companies to treat sewage sludge. • However, if the CMA considers it should make an allowance for Anglian to build its own capacity, we consider that that allowance should be considerably less than the £12.5million included in the

[68] Environment Agency Sludge Strategy, updated July 2020.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			provisional findings. In particular, the CMA should not make an allowance for ○ "bioresources availability optimisation" as this is an activity that we expect all companies to be undertaking anyway and is covered in base expenditure allowance; ○ "modelling to support trading" particularly as the company is not planning to use trading; or ○ "operating expenditure associated with the Whitlingham additional digester" as this is covered by our base cost allowance for bioresources which already includes additional operating expenditure associated with increasing sludge volumes. • We note that Anglian Water explicitly states that it has not included 'adjustments for increased revenues for power generation and biosolid farm sales'. While revenue generation from increased sludge volumes will be reflected in base allowances, this does not take account of the increased revenue generation associated with moving from an old to a new THP plant. If including the additional costs of a new THP plant then the CMA should take into account the additional revenue generation potential for example from increased energy efficiency or heat recovery.[69]
Metaldehyde costs (Anglian)	pp. 377-380, 385 paragraph 5.491-5.505, 5.522	• The CMA has made a provisional allowance of £63 million for the full requested cost for metaldehyde treatment. However, the CMA recognises the notification of the	• Given that the ban on metaldehyde is phased in over the next 18 months we consider that the allowance of £63 million should be removed in full. The company will not have to incur these costs. Moreover, the company would be able to realise savings related to

[69] Cambi website.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		ban from Defra but did not have time to reflect this in the provisional findings. The costs are subject to a cost claw-back mechanism, in the form of a new performance commitment and ODI for Anglian Water's metaldehyde programme, based on the profile of cost allowance split evenly over each year of the AMP.	historical metaldehyde base costs, which would be included in our base allowance. • We set out our detailed response in Appendix A4 of this document.
Elsham Direct Procurement for Customer scheme (Anglian)	p. 379, paragraph 5.502	• The CMA stated that the issue of uncertainty around funding should the Elsham scheme be delivered in-house need not be dealt with as part of the redetermination. This decision was on the basis that Ofwat had confirmed it would consult on this and Anglian confirmed it will engage openly to agree a workable solution to the problem.	• We support the decision of the CMA in this area. We consider our consulted upon licence change will adequately address the uncertainties related to managing changes in the delivery route for the scheme including any potential change in scope and addresses concerns as to the operation of the materiality threshold. • The proposal on de-scoping of the Elsham scheme potentially results in significant costs for customers, and so we are considering the proposals carefully. The technical justification is complex and we are considering it in detail, however we haven't been presented with clear arguments as to why the whole Elsham scheme can't be delivered through a DPC process. Additionally, we have had supporting legal advice which suggests that a number of the issues on timing raised by the company should be resolvable through a slightly different structure to the process. In parallel we have reviewed a proposal from Anglian on the cost impact of de-scoping for our approval. We are not in agreement with this proposal, particularly with respect to whether the costs are efficient. • Although we do not consider that this needs to be dealt with as a part of the redetermination, we will present an agreement to the

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			CMA if one is reached. Any agreement will need to set out the scope of works, efficient costs for the de-scoped works and the revised DPC development allowance. Further amendments are required to the scope and definition of the relevant performance commitments. The relevant performance commitments include those relating to the DPC process.[70] As the proposed de-scoped works relate to strategic water transfer infrastructure we expect that these components would be added to the performance commitment for the strategic interconnector project to ensure customers are protected.[71] The ODI rates set out currently in these PCs should be re-calibrated to reflect any changes to the cost allowances, cost sharing rate, allowed return on capital and run-off rates.

[70] See performance commitments PR19ANH_47 and PR19ANH_48 in Ofwat. PR19 final determinations: Anglian Water – Outcomes performance commitment appendix, p. 124 and p. 128 respectively.
[71] See performance commitments PR19ANH_39 in Ofwat. PR19 final determinations: Anglian Water – Outcomes performance commitment appendix, p. 95.

3. Outcomes: Performance commitments and incentives

3.1 We are pleased that, to a very large extent, the CMA has upheld our view of the performance commitments and incentives set for the disputing companies in our Final Determinations.

3.2 In particular, the CMA's provisional findings support our view that there is no simple cost-service relationship whereby more demanding performance commitments should always be accompanied by higher costs, and that (with the exception of leakage, which is considered in Appendix A3) the performance commitment levels set out in our Final Determinations are appropriate. The CMA also agreed that we were right to intervene in company business plans to take account of comparisons between companies, including in Outcome Delivery Incentive (ODI) rates.

3.3 However, in some places, the CMA's provisional findings diverge from the intent behind our outcomes based regime. Our regime is based on the principle that a company's rewards should depend on the outcomes consumers receive (as in a competitive market). To a large extent, a company's performance is in its own hands and our regime incentivises companies to carry out the work necessary to achieve the performance it committed to and go beyond that where it is in consumers' interests. We recognise that external factors can also sometimes have an impact on performance but, as in a competitive market, companies should be incentivised to mitigate this impact.

3.4 The imposition of deadbands, in particular, dulls these incentives. Where deadbands are imposed, companies have significantly weaker incentives to improve performance within the bounds of the deadband (even in the absence of external impacts on performance). Consumers are likely to receive a lower level of service as a result. For that reason, our PR19 methodology discouraged the use of deadbands, except in exceptional circumstances (for instance where the relevant regulatory bodies require 100% compliance with a standard but in practice this is very difficult to achieve).[72] We limit the risks that companies bear through imposing collars on outperformance payments where appropriate. This approach mitigates companies' exposure to very significant exogenous events, while continuing to ensure companies manage more common events.

[72] See 'Delivering Water 2020: Our final methodology for the 2019 price review. Appendix 2: Delivering outcomes for customers', Section 3.7.2, pp. 94-95.

3.5 The CMA also recognises that asymmetric or penalty only ODIs are appropriate in some circumstances. But it states that this means that an average performing company could face an expected loss of around 0.1 to 0.2% on RoRE, [73] with no potential for directly offsetting rewards. This is one of the reasons provided for it "aiming up" on the WACC. The CMA has provided **insufficient explanation for us to be able to understand its calculation**, despite requests for further details. As explained in Appendix A2 in 'Risk and Return – response to CMA provisional findings', it appears to rest on **incorrect assumptions**, erroneous calculations and flawed data, and we consider the CMA to be in error in reaching its conclusion that there should be an expectation of negative ODI payments. Moreover, in 'Risk and Return – response to CMA provisional findings' Appendix A2 we explain that ODI outperformance should be considered in the round with wider outperformance including on costs and outcomes.

3.6 The table below provides our full response on the adjustments the CMA made to our Final Determinations on performance commitment levels and incentives. This covers:

3.7 **Deadbands on mains repairs, unplanned outage and compliance risk index (CRI) performance commitments:** We do not consider the deadbands proposed for all companies for mains repairs and unplanned outage are necessary. There are a number of reasons for this, including that, contrary to the CMA's suggestion, companies have significant control over mains repairs and unplanned outage performance. We have also mitigated for the impact of leakage on mains repairs and for the fact that the unplanned outage PC is new in setting the PC levels. We also suggest that the CRI deadband, which was imposed for distinct reasons, should be returned to the level proposed in our Draft Determination to reflect DEFRA's announcement that the ban on metaldehyde will be re-introduced from April 2022.

3.8 **Bristol Water per capital consumption (PCC) ODI rate:** We recommend this is returned to the rate proposed in our Final Determination. There are a number of reasons for this, but it includes that PCC is in companies' control.

[73] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 478, paragraph 7.237. We note that the CMA refers in paragraph 9.671 to "potential loss", as opposed to "expected loss". To the extent that it is seeking to correct for this through an uplift to the WACC, we assume it is the expected loss rather than the potential loss with which the CMA is concerned. Also, as we explain in 'Risk and Return – response to CMA provisional findings' Appendix A2, notwithstanding its use of the language of "average performing company" we presume the CMA is attempting to model an efficient company, as it would not provide correct incentives to compensate for ODI penalties arising from inefficient behaviour.

3.9 **ODI sharing threshold:** Given the CMA considers the decision between a gross and net cap on aggregate ODIs is finely balanced, we recommend the CMA retain alignment with the rest of the sector to avoid additional complexity in our regulatory regime.

3.10 **Leakage ODIs:** We note that there appear to be errors in the CMA's ODI calculations – we have provided further details below. We have also considered the CMA's recommendation to remove the enhanced ODI. Given the latest data on reduction of leakage, we are concerned that the threshold for the enhanced ODI payment may be met too easily and so agree with its removal.

Table 3.1: Ofwat response to CMA outcomes provisional findings

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Link between cost and service (All)	pp. 430-443, paragraphs 7.65 -7.77	• The CMA found that there has not been a systematic link between cost and achievement of PC levels, with no clear pattern of the highest ODI performance for those companies that had increased spending and no clear link in the evidence from AMP6 between the performance against PC and ODI targets, and the costs incurred by the water companies.	We support the CMA's provisional decision and underpinning reasoning, which reflects our earlier submissions to the CMA. In Appendix A5 we provide additional evidence to support the CMA's position, in particular: • updating the CMA's totex/ODI performance chart (Figure 7.3 in the PF) for 2019-20 data further supports the CMA's approach, i.e. that there is no evidence of an inverse relationship between totex performance and incentive outperformance in the sector; • we have generated an equivalent chart for electricity distribution (2015-16 to 2018-19) and gas distribution (2013-14 to 2018-19) which give a similar result; and • Ofgem's recent RIIO2 draft determination (GD2, GT2, ET2) also requires stretch on both cost and outcomes, substantially reducing totex and simultaneously requiring improved service performance compared to RIIO1.
Per capita consumption, PCC ODI rates (Bristol)	pp. 454-458, paragraphs 7.149-7.163	• The CMA has provisionally determined to reduce Bristol Water's PCC ODI rates to those proposed in the company's response to the draft determination (and also in its reference to the CMA): -£0.030 million per unit for underperformance	• We consider that there are a number of reasons why Bristol Water's ODI rates for per capita consumption (PCC) should not be reduced from the levels set at PR19 final determination, which we summarise below. • The CMA's provisional findings refer to an 'overlap of outcomes'[74] between meter penetration and PCC, which 'should be recognised in setting ODI rates'[75]. Whilst we agree that meter penetration contributes to water efficiency, the link is complex to calibrate in practice **and the £9.4 million enhancement funding we allowed Bristol Water specifically**

[74] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 458, paragraph 7.161.
[75] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 458, paragraph 7.161.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		and +£0.025 million per unit for outperformance.	**for new meter installations was not directly factored into the PCC reduction** (which we expect companies to fund regardless of whether they have enhancement funding and at least partly from their base costs). Thus if the PCC reduction is achieved through means other than metering, we expect companies to return the funding. For this reason, the ODI rates for metering claw back enhancement funding for undelivered installations. However, they do not reflect the loss to consumers for failing to reach the PCC target. It is therefore correct that this is fully reflected in the PCC ODI. • Second, we **disagree with the CMA's view that PCC performance is outside companies' control** to a considerable extent. The CMA specifically cites customer behaviour as an external factor that materially influences PCC and falls outside of management control. Rather than being independent of companies' actions, customer behaviour is significantly affected by companies' ability to raise awareness of water efficiency. Companies can and should engage with customers on water usage, to raise awareness and promote greater efficiency. This is particularly effective for those customers who either have not considered their water usage before or would like to reduce their water consumption, but lack the information needed to do this effectively. There are notable examples of companies having achieved strong reductions in PCC by engaging productively with customers and helping them to reduce water usage. For example, Southern Water exceeded its 2019-20 target by 5.4% for PCC having delivered a wide range of water efficiency initiatives, including home visits, community roadshows and targeted advertising campaigns.[76] • Third, under the CMA's proposals, Bristol Water's per household rate would fall **substantially below the current industry minimum**,[77] and well outside of the reasonable range we defined based on companies'

[76] Southern Water, 'Annual Report and Financial Statements for the year ended 31 March 2020', July 2020, pp. 72-74.
[77] Ofwat, 'PR19 final determinations: Delivering outcomes for customers policy appendix', December 2019, pp. 204-205.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			business plan ODI rates. We do not consider that it is appropriate for a company that is underperforming with respect to PCC to have a significantly lower per household ODI rate than all other companies. Indeed, recent data shows that Bristol Water consistently underperformed against its PR14 PCC performance targets throughout the 2017-20 period. • Fourth, the CMA cites Bristol Water's customer research in support of its position, stating 'the per capita consumption ODI ranked relatively low in customers' prioritisation of financial incentives'.[78] The CMA notes how Bristol Water derived its proposed ODI rates for allocating 75% of customers' willingness to pay to meter penetration and the remaining 25% to PCC. Bristol Water does not appear to have consulted its customers on this allocation, and instead appears to have reached this allocation through its own judgement. However, **ODI research conducted in August 2019 by ICS Consulting (Bristol Water's advisor) finds that meter penetration is a significantly lower priority for financial incentives than PCC amongst customers**, coming 21st out of 22 ODIs considered.[79] Whilst we recognise that the CMA's provisional ODI rates for PCC are higher than in Bristol Water's PR19 business plan, this nonetheless calls into question the allocation of willingness to pay data which has been used. • Fifth, we note that the CMA has provisionally determined to raise Tier 1 underperformance ODI rates for leakage. This significantly increases the ODI payments Bristol Water will face if it fails to deliver its leakage performance commitment. Leakage performance is estimated rather than directly observed, based partly on the volume of water supplied to the network (an input) and the volume of water consumed by households (an output). It is possible in some circumstances for

[78] Competition and Markets Authority, 'Provisional findings report,' September 2020, p. 458, paragraph 7.160
[79] ICS Consulting, 'Draft determinations customer research: ODIs', August 2019, pp. 22-26.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			companies to reduce leakage by estimating a higher value of unmeasured PCC. Whilst incentivising both leakage and PCC helps focus companies' attention on reducing these metrics in tandem, **we have concerns that significant reductions to Bristol Water's PCC ODI rate risk incentivising the company to reduce leakage at the expense of PCC performance.** As we note above, the CMA's PCC proposals would give Bristol Water the lowest per household ODI rates in the industry by a considerable margin. It is important that companies are appropriately incentivised to reduce both leakage and PCC, as this is key to companies' long-term resilience. • We invite the CMA to reconsider its proposed reduction to Bristol Water's PCC ODI rates.
Unplanned outage – introduction of deadbands (All)	pp. 458-461 (paragraphs 7.164-7.171).	• The CMA has provisionally determined to apply a standard underperformance deadband for all four companies for the unplanned outage PC. The deadband level is set as 1.2x the performance commitment level. The CMA's rationale for the deadband has three main elements: the risk posed by asymmetric incentives, the degree to which aspects of outage are beyond management control, and the potential impacts of the measure being new and untested.	• We welcome the CMA's provisional decision on the appropriateness of this performance commitment as a measure and its relevance to customers. • However, we do not agree that it is appropriate to impose a deadband for the following reasons: • As set out in 'Risk and Return – response to CMA provisional findings' we do not think asymmetric incentives imply negative expected ODI payments, and even if they were there are more appropriate solutions. • We consider that the management of outage is within management control as set out in detail in our '4 May response'.[80] In particular, we would like to draw the CMA's attention to the requirements on companies to manage the risk posed by this type of event as set out in the relevant Drinking Water Inspectorate (DWI) risk management guidelines: for example, the use of drinking water safety management

[80] Reference of the PR19 final determinations: Response to Northumbrian Water's statement of case', section 4, pp. 87-88, paragraphs 4.58-4.59.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
		• The CMA accepts that it had to apply judgement here: 'Although the level of a deadband is ultimately a matter of judgment, we have provisionally proposed that the level is set at 1.2x the PC level, to allow for some failures related to fluctuations outside the company's control, and uncertainty in measurement of this new PC.' (Paragraph 7.171)	plans.[81] These guidelines are based on guidance from the World Health Organisation and are embedded in the Water Supply (Water Quality) Regulations 2000 (Amendment) Regulations 2007.[82,83] Further, the reporting guidelines for outage already allow for some exclusions, including on the basis of raw water quality, turbidity, algae and weather.[84] • As set out above, even where exogenous impacts can have some impact, we incentivise outcomes to consumers in order to encourage companies to mitigate those impacts. We only use deadbands by exception. We use collars to limit the financial impact of ODIs on companies. • Our approach at final determination already mitigated any risks or unintended consequences of the metric being new and untested. We set out how our approach at final determination accounted for the new nature of the metric in our '4 May response'.[85] However, we would like to draw the CMA's attention to the mitigation measures we put in place, which included: only applying financial incentives following an analysis of the convergence in reporting; utilising the median value in setting performance commitment levels rather than upper quartile; setting different glidepaths based on company performance; as well as the addition of an underperformance collar. We consider the addition of a deadband by the CMA (or the tightening of the collar) alongside all of the existing mitigations that we already put in place at final determination 'double-counts' for any metric uncertainty and therefore unfairly places customers at risk of receiving poor service levels.

[81] Drinking Water Safety Plans guidance, Drinking Water Inspectorate.
[82] World Health Organisation, Water safety planning.
[83] Water Supply (Water Quality) Regulations 2000 (Amendment) Regulations 2007.
[84] Reporting guidance – unplanned outage (updated), April 2019, pp. 9-10.
[85] Reference of the PR19 final determinations: Response to Northumbrian Water's statement of case', section 4, pp. 90-92, paragraphs 4.68-4.76.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			• We would also like to draw the CMA's attention to the recent performance of the sector on this metric where progress has been made by all companies. Twelve companies are already performing better than their 2020-21 performance commitment levels and ten companies are already performing better than their 2024-25 performance commitment levels. This further indicates that the application of a deadband is generous and risks encouraging poor levels of customer service. • We also note that the applied deadband has been set at 1.2x the performance commitment level. The CMA admits there is judgement here and we concur that limited rationale has been provided for the specific deadband levels.
Mains repairs deadbands (All)	pp. 461-463, paragraphs 7.172-7.180	• The CMA has provisionally determined to apply a standard underperformance deadband for all four companies. It is equivalent to 10 mains repairs per 1,000km from the performance commitment levels. • The deadband has been applied as an additional allowance for leakage reduction and for factors outside of company control such as extreme weather.	• We consider that the use of deadbands for additional pro-active mains repairs for leakage reduction is not required as this has already been accounted for in the allowance provided for all companies. • Moreover, we consider that the inclusion of deadbands as a provision for events outside of management control, such as severe weather events, is also not required. Although some factors, such as severe weather,[86] can impact the number of mains that require repair, companies can take action to mitigate the impact of that. For this reason, our framework focuses on outcomes to consumers, even where some exogenous events can impact on performance. • The importance of incentivising outcomes is illustrated by the freeze/thaw incident in 2017-18. Some companies were able to mitigate the impact, for example through effective management of the assets leading to a more resilient network. However, we found a series of operational failings by certain companies had resulted in a far worse outcome for customers than should have been expected.[87]

[87] Letter to Thames Water about the review of the freeze/thaw incident – June 2018.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Mains repairs ODI rate (Bristol)	pp. 463, paragraphs 7.178-7.180	• The CMA has provisionally determined not to change Bristol Water's ODI rate for mains repairs, rejecting the company's request for a lower rate. The CMA cites that it has introduced underperformance deadbands for all disputing companies, which addresses its concerns with this performance commitment.	• We welcome the CMA's decision to retain the mains repairs ODI rate we set for Bristol Water at final determination. Whether or not the CMA chooses to apply underperformance deadbands to mains repairs in its final redetermination, we consider that there are strong reasons to retain the existing ODI rate. • We noted in our June submission that Bristol Water's ODI research finds the mains repairs performance commitment to be one of customers' top priorities for financial incentives, coming joint fourth out of 22 incentives.[88] • However, Bristol Water had a mixed record on mains repairs performance over the 2015-20 period. At PR14 mains bursts was measured as a sub-component of Bristol Water's 'asset reliability – infrastructure' performance commitment, and over 2016-19 the company consistently failed to meet the reference performance level for its mains bursts target. We have reviewed recent performance data and note that Bristol Water performed well on mains repairs in 2019-20, but we continue to have concerns about whether the company can consistently meet its targets over 2020-25 (and thereby avoid underperformance payments). Given the challenge this represents for Bristol Water, we consider that customers should be sufficiently protected from underperformance risk.
Compliance Risk Index, CRI (All)	pp. 463-467, paragraphs 7.181-7.187	• CMA has provisionally determined to retain the deadband in our Final Determinations for all years.	• We consider that deadbands are required for compliance related performance commitments such as Compliance Risk Index (CRI) and Treatment Works Compliance because the relevant regulatory bodies (DWI and Environment Agency) require 100% compliance (e.g. no quality related failures). However, in practice this is very difficult to achieve and it is likely that almost every company would be subject to an underperformance penalty in each year of the period if there were no

[88] ICS Consulting, 'Draft determinations customer research: ODIs', August 2019, pp. 22-26.

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			deadbands. Both quality regulators are supportive of deadbands for these performance commitments. Their inclusion and value was agreed with both regulators at the initial assessment of plans, draft and final determination phases. • At the time of the draft determination the use of metaldehyde was banned by Defra from April 2020 onwards. We took this into account when setting the deadband for the Compliance Risk Index (CRI) performance commitment by setting a deadband at a level of 2 between 2020-21 and 2022-23, but then reducing that to 1.5 for the remaining years of the period. The slight increase in the first two years was to allow for a transition period between the introduction of the ban and the potential application of underperformance penalties. By the time of the final determination the ban was withdrawn after a judicial review and, although it was likely to be reintroduced, this caused uncertainty for the deadband level. Therefore, we took a cautious approach and allowed for a deadband of 2 in all years of the period. • In September 2020, Defra announced that the ban on the use of metaldehyde will be re-introduced from April 2022.[89] Defra has allowed for a 1 year transition period starting from April 2021. • As a result of the re-introduction of the ban, we recommend that the CMA reverts to our draft determination performance commitment levels for CRI, which will be a deadband of 2 from 2020-21 to 2021-22 (2 years), then a deadband of 1.5 from 2022-23 to 2024-25 (3 years). There is no need for a further transition period as this has already been accounted for by Defra.

[89] https://deframedia.blog.gov.uk/2020/09/21/ban-on-the-use-of-metaldehyde-announced/

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
ODI sharing threshold (All)	pp. 474-477, paragraphs 7.230-7.234	• The CMA has provisionally rejected Northumbrian's proposal that there should be a 2% 'net' cap as it has not received sufficiently compelling reasons it is better than the 3% 'gross' cap in our Final Determinations.	• The theoretical arguments on a net or gross cap are summarised by Northumbrian Water in its 27 May submission.[90] Northumbrian Water's theoretical arguments in favour of a net threshold depend on each and every ODI rate reflecting precise quantification of customer benefits and that these remain constant whether performance is close to the performance commitment level or very far away. Our position is that a gross sharing threshold protects customers from the risk that the company is able to make very high returns on individual ODIs which do not reflect the value of the improvement to customers, due to difficulty in accurately calibrating ODIs. In general terms, we do not think that high outperformance on one PC is likely to compensate for significant under performance on another PC in customers' eyes. Linear ODI rates may not fully capture this. • We carefully considered this issue in coming to our final determinations, including whether the threshold should be calculated on an annual basis or apply over the five years. We decided to apply the threshold on an annual basis as, in addition to protecting customers from unintended consequences, it also helps to reduce bill volatility. However, reducing bill volatility is not the primary aim of the cap. • Moreover, if the CMA were to change its decision and introduce a net cap at 2% of RORE for these four companies it would add complexity to the regulatory framework. A different test would have to be performed for these four companies compared to the other 13 companies and the results and reasons for this explained to stakeholders. Such complexity should be avoided unless there is a clear benefit, rather than simply modest benefits, particularly given the concerns that the regime is already overly complex.

[90] Northumbrian Water Limited PR19 CMA Redetermination, Section 5.4, pp. 81-83

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Leakage Performance Commitment Levels (Northumbrian)	pp. 484-486, paragraphs 8.17 and 8.26	• The provisional findings do not state there is a change to Northumbrian Water's leakage performance commitment levels from those that we set.	• The CMA should be clear on the leakage performance commitment levels in its redetermination. Footnote 1250 in the Provisional Findings report is incorrect: although Northumbrian Water queried the leakage performance commitment levels set by Ofwat's final determination, there was no error in our final determination. Consequently, the levels set out in table 8-1 of the Provisional Findings report diverge from our final determination and paragraph 8.26 requires revision to reflect this. We agree that the levels in table 8-1 broadly reflect the leakage levels expected in water resource management plans.
Changes to Tier 1 ODI rates for Leakage (Anglian, Bristol and Yorkshire)	pp. 500-501, paragraphs 8.85-8.92	• The CMA has provisionally decided to increase Tier 1 ODI underperformance rates for three of the four disputing companies. Northumbrian Water has not been awarded enhancement funding for Leakage reduction, and therefore its Tier 1 ODI rate remains unchanged from our PR19 final determination (this is identical to the company's Tier 2 ODI rate).	• In reviewing the CMA's calculations of Tier 1 ODI rates for leakage, we have identified two apparent errors. First, the CMA has used annual 2019-20 leakage data to derive the 2019-20 baseline performance level and compute implied performance commitment levels, when it should have used three-year average leakage data to derive these parameters. Our final determination performance commitments for each company explain that the leakage baseline is calculated based on three-year average performance. Second, the CMA has not used the right historical leakage dataset to compute Tier 1 ODI rates. The CMA should have used companies' shadow reporting data to compute the Tier 1 ODI rates, but it has instead used an alternative historical dataset. Whilst this dataset provides a longer record of historical leakage performance than the shadow reporting data, there are methodological differences with how data will be reported in the 2020-25 period. • In setting the Tier 1 ODI rates applied at PR19 final determination, our approach was to calculate these ODI rates using the cost sharing rates applicable for each company. We note that the CMA has followed a slightly different approach, in that it bases its Tier 1 ODI rates on a 50% funding clawback mechanism, whilst it has provisionally determined

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
			cost sharing rates of 55% for totex underperformance and 45% for totex outperformance (across all disputing companies).
Enhanced leakage ODI (All)	pp. 501-502, paragraphs 8.93-8.98	• The CMA has provisionally decided to remove enhanced ODIs for leakage as it considers the cost benefit of further large reductions beyond the PR19 performance commitment levels is not clear.	• The purpose of the enhanced ODI is that it is a set at a level that can only be reached by innovation. This would reduce costs of leakage, with benefits for customers across the industry. • It is likely that there are significant benefits to increasing the supply demand balance through further leakage reduction. To illustrate, the range of costs for delivering the Cheddar 2 reservoir that could be used to supply Bristol Water works out to be a unit rate of £8.1-11.4m per Ml/d based on a 16Ml/d assumed output. • Moreover, the CMA's concern about over investment in leakage seems at odds with its decision to "aim up" on the WACC (see 'Risk and Return – response to CMA provisional findings'.) • However, given the 7% reduction we have seen in 2019/20, we are concerned that the enhanced ODI threshold may be set at levels that are insufficiently challenging for companies. We therefore agree with its removal.

4. Other issues

4.1 This section sets out our response to other issues set out in the provisional findings. In summary:

4.2 **Covid-19**: We support the CMA's provisional finding that that the best mechanism for taking direct account of the impacts of Covid-19 is for Ofwat to consider these as part of an industry-wide process. We have been jointly undertaking work to understand the potential scale of impact of Covid-19. This suggests that companies expect a range of potential impacts both positive and negative. The scale of the impacts remains highly uncertain and dependent on company circumstances. More work needs to be done to better understand the potential benefits, the interactions and the implications for the sector in the longer term.

4.3 **Yorkshire Water's PR14 reconciliation**: We are concerned that the CMA has not engaged fully with the evidence we provided on how we determined the PR14 totex allowance for third party costs, despite our detailed explanation, including links to published PR14 cost models.[91] In particular it is not clear why the CMA has used related but incomplete "contemporaneous data" provided by Yorkshire Water in preference to the exact figures we used in our PR14 determination. In addition the CMA provides an inadequate explanation for its provisional decision that Yorkshire Water's 2014 business plan data input error was unambiguous when it refers only to Yorkshire Water's forensic report of actual data from 2012-13 and sets out no evidence that the error of the same magnitude was transferred to every year of the company's PR14 business plan.

4.4 **Financial modelling**: As we set out in our response to RFI017 the PR19 financial model was developed over a three-year period with an extensive consultation and query process with companies and has been subject to two separate independent external reviews. We believe that the CMA should have used the PR19 financial model to model the provisional findings and are concerned it has not been used. We are concerned over the risks, inconsistencies (for example between the revenue and financeability models), the lack of appropriate revenue and bill profiles and k factors, and the resulting errors from not using the PR19 financial model. We recommend that the CMA use the PR19 financial model for its final redetermination. Given the risk of errors that would arise as this would be the CMA's first public use of the model, we consider that it would be appropriate for the CMA to consult on the

[91] See Appendix 1 of our response to Yorkshire Water's statement of case, May 2020, p. 148.

calculation of the final revenue allowances and financeabilty ratios and the calculation of k before reaching its final determination.

4.5 **Blind year adjustments**: We note that the CMA has not said in its provisional findings whether it intends to make any adjustments to reflect the reconciliation for the PR19 blind year (where adjustments are made in relation to 2019-20 outturn performance, which was not known when we made our final determinations). We intend to publish our decisions on the blind year adjustments on 13 November. As we set out in appendix A2 to our final submission to the CMA in August 2020:

- For the adjustments we would otherwise include in the revenue forecasting incentive (RFI) formula: We propose that the CMA either includes the blind year adjustments in the price controls that it determines or confirms that the scope of the RFI formula is wide enough to enable Ofwat to apply the relevant adjustments in-period.
- For performance commitments and outcome delivery incentives (ODIs): We propose that the CMA either includes the blind year adjustments in the price controls that it determines or confirms the designation of all PR14 performance commitments of the disputing companies as in-period ODIs for the purposes of the blind year adjustment for 2019-20 so that Ofwat can apply the relevant adjustments in-period.

4.6 **Next Steps**: We note that the CMA states that it 'will consult with the Main Parties in parallel to our consultation on this Provisional Determination on the technical steps required to convert our determination to changes to the price control licence conditions'[92]. It is an error to suggest that changes to licence conditions are needed to implement price control determinations in the water industry.

4.7 Following water industry price reviews, price controls for each company are implemented through a determination made under a licence condition (Condition B: Charges). The determinations made by the CMA in its final report(s) will take effect as if they had been made by Ofwat[93].

[92] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 34, paragraph 99.
[93] Sub-paragraph 15.2 (for Bristol Water) or sub-paragraph 16.2 (for the other disputing companies) of Condition B of water company licences.

Table 4.1: Ofwat response to CMA other issues provisional findings

Provisional finding (Company)	CMA provisional findings reference	CMA provisional finding	Ofwat response
Covid-19 (all)	pp. 92-96, paragraphs 3.39-3.56	• The CMA provisionally decided that that the best mechanism for taking direct account of the impacts of Covid-19 is for Ofwat to consider these as part of an industry-wide process and noted that Ofwat has proposed it will consider the needs for any ex post adjustments at a time aligned to its normal PR19 reconciliation process. • The CMA provisionally decided that it should not provide views and principles to Ofwat on how it should take account of the impacts of Covid-19 as these are currently unknown, and it was not clear that this fell within the CMA's powers.	• As we set out in our 19 March letter to all companies regarding Covid-19, we signalled clearly that 'we will consider the need for any ex post adjustments to our regulatory system following an in-the-round assessment as part of our normal reconciliation process'.[94] We reiterated in our 14 July letter that 'We have yet to be persuaded that there is a need to act immediately' and that 'that we would align the timing of our assessments with our normal reconciliation processes for PR19, once performance for the first year of the AMP has been reported'.[95] • We have continued our joint work with Water UK to understand the potential scale of possible impacts based on a range of virus and macro-economic scenarios. This work has taken into account data available up until July. We have received a draft report from our consultants Frontier Economics, who have surveyed all companies and summarized their responses. It suggests that companies expect a range of potential impacts, both positive and negative. The scale of the impacts remains highly uncertain and dependent on company circumstances. Nevertheless its seems as though the most significant impacts are likely to be around: o Increased household demand and decreased non household demand; o Increased water production and health and safety costs and reduced travel costs;

[94] Rachel Fletcher, Covid-19: Water industry response, 19 March 2020.
[95] Rachel Fletcher, AMP7 company performance during the pandemic, 14 July 2020.

			○ Increased per capita consumption and non-household voids; ○ Expected increase in bad debt and social tariff take up; ○ Increased nominal debt costs (due to low inflation rather than directly due to Covid-19). • The consultants identified a range of other factors such as reduced energy, metering and developer services costs and potential delays to the capital programme but did not receive any information from companies which suggested there would be a net impact over the period. At present the consultants are refining their assessment and considering additional data and will produce a final report in November. In addition to this there are other elements of work being undertaken for example a more detailed study of the impact of Covid-19 on household consumption for the water companies and the Environment Agency. We expect to continue to engage with individual companies on potential impacts beyond the publication of the Frontier Economics report. • While all of these studies are informative, we are only six months into the impact of Covid-19 and continue to consider that it is important to have reasonable certainty around the impacts before making any associated adjustments as part of the redetermination process. It is also clear from the Frontier Economics work that at present the quality of information is variable and trends are highly uncertain. More work needs to be done to better understand the potential benefits, the interactions and the implications for the sector in the longer term. • We consider that these impacts are best addressed when we can identify impacts across the sector as a whole and are able to benchmark company performance and apply a rounded judgement across all 17 companies and to do this as part of our normal reconciliation process. We expect to start this process when we receive the first year of data from this AMP in July 2022.

Taxation	pp. 702-704, paragraphs 11.7	• The CMA provisionally decided to retain Ofwat's tax reconciliation mechanism for the redeterminations.	• We will use the tax reconciliation tool at PR24 to calculate the adjustment required to take account of any changes to corporation tax rates or capital allowance rates after our final determination. The tool requires a populated financial model representing the most recent determination along with a copy of this model with any required tax rates changes inputted. To enable us to use the tax reconciliation tool at PR24 for the four disputing companies, we ask the CMA to use our populated financial model, as the reconciliation depends on comparing one version of the model with another.
PR14 reconciliation – Revenue Forecasting, WRFIM (Yorkshire)	pp. 710-713, paragraphs 11.31-11.59	• The CMA provisionally decided that Yorkshire Water made an error in completing its PR14 business plan and that the error is unambiguous. • The CMA calculated adjustments to offset the effect of the error as £35 million additional revenue and £9 million reduction to the RCV. • It also asks whether it would be appropriate to net off the two adjustments to a single AMP7 revenue adjustment.	• Our policy is to make corrections only where there is high quality evidence. This incentivises companies to forecast accurately and helps to instil confidence in the legitimacy and accuracy of the regulatory price review process. • The CMA relies heavily on the forensic report supplied by Yorkshire Water. The report breaks down third party income, as reported in Yorkshire Water's 2012-13 annual report, demonstrating that connection charges were included as third party income at this time and the amount received in 2012-13. We do not doubt that was the case. • However, the report does not verify what level of connection charges Yorkshire Water forecast in its PR14 business plan. Indeed, there is no independent third-party verification of the company's forecasts, and Yorkshire has not put forward compelling evidence on this issue. The CMA is thus relying on the company's assertion that it based its PR14 business plan forecasts on the 2012-13 reported figure for each year of the AMP6 period, i.e. that it did not forecast any change in the 2012-13 figure over time. As we noted in our response to the company's submissions of 27th May, this is inconsistent with the number of new connections which the company forecast in its PR14 business plan. • In the circumstances, while we do not consider there is ambiguity over whether the company made an error at all, we still consider the error to be ambiguous as regards the scale of impact. The CMA **does not explain adequately** why it considers the error to be wholly free from ambiguity.

- The CMA states it has used "contemporaneous data" in its assumption of a 93% ratio of third party recovery rates. We disagree with the CMA's use of 93% of third party income to calculate the totex allowance at PR14 because that was not what we did and therefore the CMA would not be accurately replicating what happened. We are **concerned that the CMA has not engaged with our evidence**.
- Our allowance for third party costs at PR14 was based on the previous five years for which we had data reported to us for both third party costs and third party income which was the period 2006-07 to 2010-11. We show in the table below the figures we used at the time and how we came to 114%. The CMA should use 114% to calculate the revised allowed totex if it continues to make an adjustment for Yorkshire Water's PR14 business plan error (although we note in hindsight that we should have used 114.83% rather than 114%).

Third party services opex and income (2010-11 prices)

BON code	Yorkshire Water – water service	2006-07	2007-08	2008-09	2009-10	2010-11	5 year total
BM323	Third party services – opex, £m	8.958	9.320	8.771	6.986	11.021	45.056
BO1194	Third party services – income, £m	8.530	9.404	8.917	6.047	6.338	39.236
Third party opex as percentage of third party income							114.83%

- We consider that the correct way is to make a revenue adjustment and a separate adjustment to RCV and recommend that the CMA does so for all adjustments it decides to make.
- We recommend that when deciding on the final adjustment, the CMA bears in mind customer preferences for smooth movement in bills.
- As previously notified to the CMA, as part of our blind year reconciliation process, we discovered an error that we had made in the 2017-18 intervention value we used in Yorkshire Water's PR19 WRFIM model. We are correcting this error as part of our final blind year reconciliation

			adjustment. We set out earlier in section 4 of this document (paragraph 4.5) our proposals for dealing with the blind year reconciliations. As a result we consider that the error correction should either be included in the CMA determination (if the CMA includes the blind year adjustments in its final redetermination) or be applied by Ofwat within the period (subject to any views the CMA may have on the RFI formula for the disputing companies and whether it should include a blind year adjustment). This would avoid any possibility of the error being corrected more than once.
Potential grants and contributions error (Northumbrian)	pp. 713-719, paragraphs 11.60-11.92	• The CMA has decided that the £14.4 million one-off contribution to capex was a double-count and the error should be corrected. The adjustments required are a decrease in the revenue controls of £10.94 million across AMP7 and an increase in the RCV of £12.0 million. • The CMA welcomes submissions on whether it would be more appropriate to net off the two adjustments to a single AMP7 revenue adjustment.	• If CMA is minded to maintain its decision to make a correction for double-counting of £14.4 million capex (grants and contributions), we consider that the correction should be made as a revenue adjustment and a separate adjustment to RCV (as mentioned in the prior item for Yorkshire Water's WRFIM). • We refer CMA to our responses to RFI014 (questions 10 and 11) which provides our opinion of the amounts of the proposed corrections to revenue and RCV (our figures differ slightly to those proposed by CMA due to roundings) and RFI017 (question 8) that explains the specific model updates needed for the grants and contributions adjustment for Northumbrian Water. The £m movements proposed in RFI014 were based on our final determination modelling: further changes by the CMA may result in slightly different £m revenue and RCV movements.
Separate price controls – Retail (All)	p. 720, paragraphs 11.94-11.98 pp. 636-643, paragraphs 9.535-9.564	• The CMA agrees with our approach to determining the retail control, for both determining the allowance and the outcome measures. • The four disputing companies did not raise concerns about this approach. • The CMA has not made changes to the 1% retail margin but has reconsidered the approach taken on	• We cover retail margin in Section 8 of 'Risk and Return – response to CMA provisional findings'.

		wholesale profit ('retail margin adjustment').	
Separate price controls – Bioresources (Anglian, Northumbrian, Yorkshire)	pp. 720-721, paragraphs 11.99-11.101	• The CMA agrees with our approach to determining the bioresources price control, subject to its review of the bioresources totex levels. • The three disputing companies did not raise concerns about this approach.	• We welcome the CMA's agreement with our approach to determining the bioresources price control. Our design of the bioresources control aims to aid the development of a market for bioresources activities. • Anglian Water disputed our totex allowance for bioresources for additional treatment capacity. We discuss this in section 3 above and we ask the CMA to consider the implications on the bioresources control and the market of its provisional determination to allow it additional funding to build its own treatment capacity rather than contract with a market solution provider.

A1 Base costs – response to the provisional decision to drop model SWC1

A1.1 One of our sewer collection models, SWC1, was specified as:

$$\ln(cost)_{it} = \beta_0 + \beta_1 * \ln(L)_{it} + \beta_2 * \ln\left(\frac{P}{L}\right)_{it} + \beta_3 * \ln\left(\frac{C}{L}\right)_{it}$$

Where *L* = sewer length, *P* = properties and *C* = pumping capacity.

A1.2 The parameters of the model were estimated at

$$\beta_0 = -8.124, \qquad \beta_1 = 0.839, \qquad \beta_2 = 0.317, \qquad \beta_3 = 0.998$$

A1.3 Anglian Water submitted a report by Professor David Saal and Dr Maria Nieswand arguing that the elasticity of cost with respect to sewer length is equal to $\beta_1 - \beta_2 - \beta_3$, which is negative.[96]

A1.4 The negative elasticity implies that the total cost of operating and maintaining the sewage collection network falls as the length of the network increases. This is counter to what we would expect.

A1.5 The CMA was concerned by this result and provisionally decided not to use this model.

A1.6 We maintain that the elasticity of cost with respect to sewer length based on SWC1 is positive for the reasons explained below.

Why we consider that the elasticity of costs with respect to length is positive

A1.7 Our model is designed to identify three things:

- What happens to cost when length increases, holding density and pumping intensity (*C/L*) constant – a size effect.
- What happens to cost when density increases, holding the other variables constant – a density effect.

[96] Saal and Nieswand (2019), A Review of Ofwat's January 2019 Wholesale Water and Wastewater Botex Cost Assessment Modelling for PR19.

- What happens to cost when pumping intensity (*C/L*) increases holding other things constant – a geography effect.

A1.8 This thinking is based on business and operational understanding, and is supported by the data at hand. It allows us to look at the impacts of these elements and consider their plausibility.

A1.9 The negative elasticity, as identified above, is obtained when asking the model a different question to the one we do, namely, what happens to cost when sewer length increases and at the same time properties and pumping capacity stay the same (in effect, density and pumping capacity decrease)?

A1.10 In the dataset that we have, if you change sewer length then properties and pumping capacity move as well (we elaborate below) – therefore, asking what happens to sewer length when properties and pumping capacity stay the same is not a particularly relevant question.

A1.11 The value of the elasticity depends on what we hold constant (or not) in deriving the impact on costs, i.e. what question are we asking of the model. Our model – any model – may not provide a plausible answer to the wrong question. This is because a model can only reflect the data at hand. Models cannot be immune to any type of question, but we can expect them to provide a plausible answer to the right question, and our model does that.[97]

A mathematical explanation

A1.12 The report by Professor Saal and Dr Nieswand calculates the elasticity of the model to be:

$$Elasticity = \frac{\partial cost}{\partial L} * \frac{L}{cost} = \beta_1 - \beta_2 - \beta_3 = 0.839 - 0.317 - 0.998 = -0.476$$

A1.13 The calculation above assumes that *P* (properties) and *C* (pumping capacity are not changing when *L* (sewer length) changes. This assumption ignores relationships across variables that are not as explicit in the model. For

[97] Other studies use a similar interpretation of coefficients in similar models. For example, in railways a typical cost equation is $\ln(cost) = \alpha + \delta \ln(\text{track length}) + \gamma \ln\left(\frac{train-km}{track\ length}\right)$ and the coefficient δ (rather than $\delta - \gamma$) is interpreted as the elasticity of costs with respect of track length. See also the study by Santos Silva and Tenreyro (2006), The Review of Economics and Statistics, November 2006, 88(4): 641–658. On page 650 the author interprets the elasticity of trade flows with respect to country exporter GDP to be 0.938, without considering the other coefficient of exporters GDP divided by population.

example, it ignores that pumping capacity is a function of sewer length, and a proper differentiation needs to recognise it.

A1.14 In fact, a proper differentiation should recognise that both length and pumping capacity are functions of properties. As more properties are added to the network, the length of the network increases and so does the pumping capacity.

A1.15 Consequently, the model can be re-written where sewer length and pumping capacity are a function of properties:

$$ln(cost) = \beta_0 + \beta_1 * lnL(P) + \beta_2 * ln\frac{P}{L(P)} + \beta_3 * ln\frac{C(P)}{L(P)}$$

A1.16 Applying the chain rule, the derivative of cost with respect to sewer length is[98]

$$\partial(cost)/\partial L = [\partial(cost) \,/\, \partial P] * \partial P \,/\, \partial L = [\partial(cost) \,/\, \partial P] * [1 \,/\, (\partial L \,/\, \partial P)] =$$

$$= (cost/L') * [\beta_1 * \frac{L'}{L} + \beta_2 * \frac{L}{P} * \frac{(L - PL')}{L^2} + \beta_3 * \frac{L}{C} * (C'L - L'C)/L\text{^}2\,)]$$

A1.17 Turning into elasticity (by multiplying by $(L/cost)$) and simplifying terms, we obtain

$$Elasticity = \beta_1 - \beta_2 - \beta_3 + {}^{L}/_{L'}(\beta_2/P + \beta_3 * C'/C)$$

A1.18 At this stage, to simplify the elasticity further in order to assess the validity of the model, Saal and Nieswand have made a different assumption to us. As we note in paragraph A1.13 Saal and Nieswand assumed that *P* and *C* do not vary with *L*, i.e.

$$\partial P/\partial L = 0 \quad \text{and} \quad \partial C/L = 0$$

And because $\partial P/\partial L = {}^{1}/_{L'}$, the elasticity reduces to $\beta_1 - \beta_2 - \beta_3$.

A1.19 On the other hand, we have assumed that sewer length and pumping capacity move at the same proportion as properties. This assumption is based on the data at hand (and aligns with engineering rationale):

[98] We use the Inverse Function Theorem whereby if *P* is the inverse function of *L* and *L* is continuous with a non-zero derivative, then *P'=(1/L')*.

- The proportion of P/L and C/L is relatively stable across companies (the coefficient of variation is 0.12 and 0.37 respectively, which is considered to represent a very low variation);

- The correlation between properties and sewer length and between pumping capacity and sewer length is very high at 0.97 and 0.85 respectively.

A1.20 Under our assumption, both P/L and C/L are constant. That is:

$$P/L = A \quad \text{and} \quad C/L = B$$

And it follows that $L' = \frac{1}{A} = \frac{L}{P}$ and $C' = BL' = B\frac{L}{P}$

A1.21 Substituting these results in the elasticity equation we obtain that the elasticity reduces to $\beta_1 = 0.839$. This elasticity is positive and intuitive.

A1.22 To some extent the full mathematical derivation we presented above is not essential. All that is required is to understand what questions we asked of the model, why these questions are appropriate, and that the elasticity as provided by Saal and Nieswand is a wrong simplification of the math, which answers the wrong question. Nonetheless we provided the mathematical exposition for completeness.

A2 Growth reconciliation mechanism

CMA provisional decision

A2.1 At PR19 we introduced a new end-of-period reconciliation mechanism for developer service revenue (DSRA), to adjust companies' revenue based on the number of outturn new connections.

A2.2 The CMA has provisionally determined that the scope of the DSRA mechanism should be expanded to cover total growth costs.[99] This means that in wastewater the revised mechanism would include costs to accommodate demand growth at sewage treatment works and costs to reduce sewer flooding risk.

A2.3 The CMA has also provisionally decided to use historical industry upper quartile unit rates within the mechanism rather than forward looking company specific unit rates, because it considers the former provide adequate protection to companies' funding while setting an appropriate efficiency challenge.[100] In addition, it applied a frontier shift and real price effects to the unit rates to account for future productivity gains and to keep the approach consistent with other base costs.[101]

A2.4 The CMA said it is considering applying an asymmetric true-up mechanism, whereby lower unit rates would apply in the case of a negative true-up, compared to the rates that apply in the case of a positive true up. The CMA is seeking views on this.[102]

Our response

A2.5 The proposal by the CMA to expand the scope of the DSRA introduces a major change to our price control framework and could have wide implications. We do not believe it was the intention of the CMA to introduce a

[99] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 218, paragraphs 4.503-4.505.
[100] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 219-220, paragraphs 4.506-4.510.
[101] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 220, paragraph 4.511.
[102] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 220, paragraph 4.512.

significant change in the price control structure,[103] and consider there will be significant unintended consequences to the detriment of customers should the CMA decide to retain its provisional decision on the DSRA.

A2.6 In our response we discuss the following issues of concern:

- **Changing the regulatory framework** – the broadening of the DSRA distorts the nature and purpose of the mechanism and leads to a significant departure from the application of total revenue Network Plus price controls.
- **Unintended consequences** – the revised mechanism creates a significant risk that companies will make excess profits with no guarantee that the corresponding investments will materialise.
- **Interaction with cost sharing** – the revised mechanism covers costs included in cost sharing and would therefore double-fund companies.
- **Unit rates** – grants and contributions should be used to set the unit rates, while the use of a uniform industry unit rate based on historical data ignores company-specific circumstances and the fact that the level of self-lay providers and NAVs activity in the developer services market is growing.
- **Asymmetric adjustment** – the application of an asymmetric adjustment would unfairly benefit companies at the expense of customers and lead to suboptimal investment decisions.

We conclude the response by outlining our proposal in relation to the DSRA.

Changing the regulatory framework – distortion on nature and purpose of DSRA

A2.7 We do not consider broadening the scope of the DSRA is appropriate.

Intended purpose of the mechanism

A2.8 There was a concern in relation to the PR14 wholesale controls that companies may have had a financial disincentive to provide new connections. Under the PR14 methodology, the amount of allowed revenue was not

[103] The CMA said 'We are using the same regulatory building blocks as Ofwat used in its determinations'. Competition and Markets Authority, 'Provisional findings report', September 2020, p. 13, paragraph 20.

automatically adjusted for the volume of connections and a water company was expected to bear any increased costs.

A2.9 Reflecting on this, at PR19 we introduced the DSRA to correct for the variation in the level of outturn developer activity from the levels forecasted at PR19. The purpose of this was to alleviate the revenue risk on customers and companies and encourage timely and quality new connections.

A2.10 We consider that **broadening the scope of the reconciliation would not better achieve this objective**. The additional cost categories the CMA included in the DSRA are not covered by developer services charges, and therefore do not add any incentive on companies to provide new connections in a timely and quality manner.

Deviation from the regulatory framework

A2.11 Broadening the scope of the DSRA has **wider implications on the nature of the regulatory framework**.

A2.12 The Network Plus price controls are total revenue controls, meaning that costs and revenues do not fluctuate automatically with changes in actual volumes (e.g. connections). Developer services revenue is an exception to this as it is driven directly by the level of developer services activity. Because developer services revenue is included within the price control and the revenue forecasting incentive mechanism, any changes in developer services revenue during AMP7 would need to be offset by a corresponding change in end-user customer revenue (e.g. if the former increases the latter would need to decrease).

A2.13 The DSRA was therefore introduced to maintain the level of ex-post end-user customer revenues at the assumed level in PR19, leaving the company and customers no worse or better off. However, the DSRA was not intended to correct for changes in cost, or to reflect any impacts beyond those implied by developer revenue.

A2.14 The CMA appears to have misinterpreted the intended purpose of the mechanism, and its role within the overall structure of the revenue controls that are applied to the water sector. This has led to a fundamental change in the approach to calculating the unit rate within the DRSA, which **makes the DSRA a form of correction mechanism for broader growth costs based on the number of connected customers.**

A2.15 Before the introduction of total revenue controls, companies' revenue varied significantly from our expectations at price reviews with little corresponding change in costs. Knowing this, companies had an incentive to understate the expected growth, incur little variable costs for additional customers, and earn significant revenue outperformance.[104] Anglian Water was the company with the greatest outperformance.

A2.16 At PR14, we consulted and agreed with the industry over the introduction of total revenue controls. Total revenue controls encourage companies to manage demand, provide the right environment for companies to plan efficiently over the long term and remove the perverse incentive for companies to understate the expected growth.

A2.17 Although the CMA stated that it did not consider it would be sensible or practicable to adopt a wholly different regulatory framework within the context of its re-determination,[105] **the change it introduced to the DSRA is in effect unwinding this development in our regulatory framework and making a large component of the Network Plus control a form of average revenue control** (albeit via an ex post adjustment mechanism rather than formally within the structure of the price control). This undermines the customer protection of total revenue controls, and will potentially provide companies with significant undue additional revenues.

A2.18 Furthermore, because the DSRA is a revenue (ie pay as you go) adjustment, companies would get **immediate remuneration** for wider growth investments,[106] rather than as an adjustment to totex, which will be split between pay as you go and RCV (which ensures companies are remunerated for their capital investments over the asset life). We do not consider that a revenue adjustment is appropriate for wider growth costs.

A2.19 Introducing the CMA's proposed growth mechanism would also lead to an inappropriate transfer of risk from companies to customers. **Our regulatory framework does not aim to insulate companies from all risk**. Companies are best placed to manage the impact of growth on their network through long term planning, and introducing a volume-based uncertainty mechanism would

[104] Ofwat, 'Letter to Regulatory Directors – Review of form of price control mechanism', July 2007.
[105] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 13, paragraph 21.
[106] Ofwat, 'PR19 final determinations: Our approach to regulating developer services', December 2019, pp. 12-13.

significantly harm incentives on companies to manage variations in assumed growth in their areas efficiently on a long-term basis.

Risk of significant excess profits

A2.20 Broadening the scope of the DSRA could have **unintended consequences**. In particular, the proposed expansion of the DSRA to include broader wastewater growth costs could result in **significant excess profits** for the disputing wastewater companies.

A2.21 The DSRA mechanism was intended to capture revenues and costs that are directly attributable to new developments, including companies' chargeable requisition and infrastructure costs. As a result, there is a strong linear relationship between developer services revenues / costs and the number of new connections.

A2.22 The same cannot be said for growth at sewage treatment works and sewer flooding risk enhancement expenditure, which is non-linear (i.e. it is not necessary to increase capacity every time a new connection is added to the network). This means additional enhancements to sewage treatment works capacity or sewer flooding risk may not be required when a new connection is added to the network, and **the additional revenue adjustment would in that case be 100% profit for the company at the expense of customers**.

A2.23 Our analysis shows that if companies' growth forecasts materialise, the disputing wastewater companies could earn **up to £182 million in additional allowed net revenue** based on the expanded DSRA mechanism in the CMA's provisional decision, which may not lead to any additional outputs or value for customers (i.e. 100% profit for the companies). Even if companies did invest in additional capacity to accommodate growth, the mechanism would result in **£80 million of excess profits for companies**.

Table A2.1 - Potential wastewater additional net revenue recovery under the CMA's proposed DSRA mechanism, under a scenario that growth turns out as forecasted by the companies

	Anglian Water (£m)[107]	Northumbrian Water (£m)	Yorkshire Water (£m)	Total (£m)
Potential additional net revenue if companies' forecasts of new connections materialise and companies do not make additional investments to accommodate growth	+110	+24	+48	+182
Potential additional net revenue if companies' forecasts of new connections materialise and companies do make additional investments to accommodate growth	+75	–23	+28	+80

Source: Ofwat analysis. The second scenario assumes companies would bear 55% of any overspend, as set out in the CMA's provisional decision for cost sharing rates.

A2.24 Even if investment in sewage treatment works capacity is required due to an increase in new connections (e.g. due to a lack of capacity headroom that was not foreseen at the time of its price review submission), there is no guarantee that the CMA's proposed mechanism will lead to additional capacity being delivered. In this scenario, a company may decide to eat into its headroom, earn the additional revenue adjustment as profit, and then propose a business plan case in the next price control review. This leads to the risk that **the company is funded twice for the investment** as it can be difficult to determine the extent to which the company has been previously been funded for investments when outputs are not clearly defined in previous price control determinations.

Interaction with cost sharing

A2.25 The CMA provisional determination does not consider the interaction with the cost sharing mechanism. While developer services revenue gross of the income offset is excluded from cost sharing,[108] wider growth costs are not and cannot be excluded as the allowance for such costs cannot be disaggregated

[107] Based on Anglian Water's forecast number of new connections provided in the developer services data request, which was submitted alongside its draft determination response. Available here. The figures would fall from £110 to £67 million and from £75 to £32 million if Anglian Water's Statement of Case new connections forecasts were used.
[108] Ofwat, 'PR19 final determinations: Our approach to regulating developer services', p. 30 'We will apply the totex cost sharing mechanism on net totex, by excluding actual developer services revenue gross of the income offset'.

from the base allowance. As such, these costs will be remunerated through the revised DSRA mechanism and also through the cost sharing mechanism. As a result, customers will pay twice for the same investment, unless the calculation of the DSRA unit rate is changed to exclude the proportion of costs remunerated through cost sharing, which may not be feasible under the revised mechanism in the CMA's provision determination (see '**Our proposal in relation to the DSRA**' for a possible solution to this problem).

Setting a uniform unit rate based on historical growth costs is not appropriate

A2.26 In our final determinations, the DSRA unit rates were calculated using companies' forecasted grants and contributions divided by their forecast of new connections. For regulatory and competition law reasons, companies' charges to developers must reflect the cost of providing the service.

A2.27 We also considered it was more appropriate to use companies' grants and contributions forecast data to calculate the DSRA unit rates as it was **more comparable across companies** than the developer services expenditure data available to us. Basing the reconciliation on revenue data also **aided internal consistency** since we used grants and contributions data to calculate net totex.

A2.28 We consider using a company specific unit rate in the original DSRA was appropriate – companies' own grants and contributions reflect legitimate differences across companies in respect of revenues from developers. For example, **differing charging arrangements** and **differing levels of activity by self-lay providers (SLP) and New Appointments and Variations (NAVs)**.

A2.29 If the uniform unit rate is set too high for a particular company, a bigger adjustment will be made to revenues than would actually be collected by the company and recorded within net totex. The result of this is that **the higher rate will act as a reward (penalty) for the company** for higher (lower) numbers of connections relative to the initial forecast of new connections, and therefore distort incentives to provide connections.

A2.30 In addition, a uniform unit rate based on historical growth costs reflects historical rates of SLP penetration, rather than the **growing rates of SLP penetration** we are currently seeing in the market, and would therefore lead to over remuneration for companies.

A2.31 There is therefore a significant risk that setting a uniform unit rate based on historical data within the DSRA mechanism may **risk distorting the developer services market** and/or **disproportionately reward or penalise companies**.

A2.32 The latter is illustrated in Table 2 where we have calculated a 'bottom-up' view of Yorkshire Water's growth costs based on the CMA's historical uniform unit cost and the company's forecast of new connections, which equals £264 million. This is **56% above the company's estimate of growth costs**. This illustrates that the CMA's proposed mechanism will lead to excess profits (significant losses) if new connections are higher (lower) than the CMA's forecast of new connections. This does not seem reasonable or proportionate.

Table A2.2: Comparison of Yorkshire Water's forecast of growth costs and bottom-up forecast of Yorkshire Water's growth costs using the CMA's proposed unit rates

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Total growth costs in Yorkshire Water's business plan (£m, August 2019)	27	45	45	32	21	169
Total growth costs for Yorkshire Water based on historical upper quartile unit cost (£m)	57	51	52	52	52	264
Differential (%)	114%	15%	15%	64%	143%	56%

Source: Ofwat analysis

A2.33 Finally, as the CMA has derived its own view of efficient expenditure it must also ensure that the associated developer grants and contributions are adjusted to align with any changes in gross expenditure allowed through its models. Not doing so will risk setting gross expenditure and grants and contributions that are inconsistent with one another, which may have an impact on competition in the developer services market.

Asymmetric adjustment – why applying an asymmetric true-up mechanism is not appropriate

A2.34 The CMA is consulting with main and third parties on the application of an asymmetric mechanism, which would use lower unit rates for a negative adjustment.

A2.35 The CMA's rationale for the asymmetry is that the majority of costs for growth at sewage treatment works are not avoided when growth falls below forecast

due to longer-term planning commitments.[109] But costs may not be incurred even if the growth does materialise during the regulatory control period.

A2.36 These costs are part of a company's long-term planning, which means it applies symmetrically that **lower (higher) outturn connections would not necessarily lead to decreases (increases) in capacity**. This is due to the non-linear nature of growth at sewage treatment costs and reducing sewer flooding costs discussed above. Therefore, **applying asymmetric unit rates may unfairly benefit companies at the expense of customers**.

A2.37 Asymmetric unit rates also mean that **companies will not face symmetrical risk when making investment decisions**. This may distort optimal decision making and reduce the incentive on companies to act efficiently and manage the capacity risk as part of their long-term planning because there is limited downside risk.

A2.38 **We do not recommend asymmetric rates are applied to water costs either**. The water costs the CMA provisionally included in the DSRA are more reflective of expenditure directly attributable to developments, which means that companies would fully avoid the expenditure if the number of outturn connections is lower than forecasted.

A2.39 Despite the reasons we have outlined as to why an asymmetric adjustment is not adequate, if the CMA decides to apply such mechanism following parties' responses, we consider that further consultation on the CMA's approach is required before it makes the final decision.

Our proposal in relation to the DSRA

A2.40 The DSRA mechanism as set out in the CMA's provisional decision distorts the original purpose of the adjustment, interferes with the principle of total revenue controls, would lead to double-funding of costs included within cost sharing, and could act as a reward or penalty for companies that has no relation to the underlying cost of new connections. It could also result in significant excess profits with no guarantee that the investments funded would have materialised, or will materialise at a later date, and/or lead to suboptimal investments being made.

[109] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 220, paragraph 4.512.

A2.41 For these reasons, we ask the CMA to reconsider its provisional findings' proposal to broaden the scope of the DSRA. The DSRA was developed following extensive engagement with the industry and received large support from companies.[110] Due to the complicated interactions outlined above, each aspect of the DSRA was carefully considered in terms of the incentives it creates and how it interacts with other aspects of the price control.[111]

A2.42 **Northumbrian Water, Yorkshire Water and Bristol Water did not raise any substantial issues with the DSRA or raised concerns around uncertainty of wider growth costs in wastewater**, although given the CMA's proposal to use asymmetric rates these companies could express support to the expansion of the DSRA in response to the CMA's provisional findings. In addition, Anglian Water did not raise issues with the application of the DSRA on water costs and only asked for a specific uncertainty mechanism in relation to growth at sewage works expenditure.

A2.43 It therefore does not seem proportionate or targeted to change the entire scope and design of the DSRA for what is a **company specific issue raised by Anglian Water regarding growth at sewage treatment works**.[112]

A2.44 For avoidance of doubt, we do not consider it is appropriate to introduce a volume-based uncertainty mechanism for growth at sewage treatment works expenditure. Although we note the CMA's concerns on uncertainty related to Brexit and Covid-19, **wider growth related costs are protected by the cost sharing mechanism** which mitigates for such uncertainty. Additionally, as discussed above these costs are part of companies' long-term planning and do not vary one-to-one with the number of new connections.

A2.45 However, if the CMA decides in favour of such a mechanism, we suggest a more proportionate approach would be to introduce a separate growth at sewage treatment works mechanism for Anglian Water. This would minimise the potential unintended consequences of changing the DSRA in its entirety for all disputing companies. The separate mechanism for Anglian Water could be based on population equivalent treatment capacity, providing an accurate baseline can be set that protects consumers from the risk of double funding investments. This approach would also mean that all the costs captured in the

[110] Ofwat, 'PR19 final determinations: Our approach to regulating developer services', December 2019, p. 16.
[111] A comprehensive review of options considered, feedback received from companies and our assessment is given in Ofwat, 'PR19 final determinations: Our approach to regulating developer services', December 2019, section 2.
[112] Better Regulation Task Force, 'Principles of Good Regulation', p. 4; and Department for Business, Energy & Industrial Strategy, 'Better Regulation Framework', March 2020, p. 4.

mechanism would be inside of cost sharing. In turn, this would mitigate concerns raised around the interactions with cost sharing (discussed above) because the CMA would no longer have to consider what proportion of the DSRA unit cost is outside of cost sharing.

A3 Leakage

A3.1 The CMA provisionally found that three of the four Disputing Companies should be allocated funding to reduce leakage. Notably, it provisionally found that Yorkshire Water should receive £93.3 million leakage enhancement, although noted that this, like other leakage enhancement allowance for Anglian Water and Bristol Water, is 'indicative and subject to review of the supporting evidence that the Totex is needed to achieve this leakage reduction'.[113]

A3.2 **We are pleased that the provisional findings for Anglian Water and Bristol Water broadly support the allowances for leakage we provided in the final determinations** and do not consider that the companies have provided evidence to justify an additional allowance.

A3.3 In our view, **Yorkshire Water's enhancement allowance, like Northumbrian Water's, should be zero**. If the CMA decides to keep its provisional decision methodology, according to our preliminary assessment, Yorkshire Water's enhancement allowance should be up to a maximum of £29 million. This is in view of the fact that: (i) the company's bottom-up costing does not provide compelling reasoning that the activities should be considered as enhancement, and only provides limited evidence of costs and benefits benchmarking; and (ii) the company's proposed unit costs for enhancement are higher than its own earlier unit cost estimates for larger leakage reduction, and significantly higher than industry median upper quartile unit costs, despite it being a poorly performing company.

A3.4 The CMA states 'for most companies, the base cost models can be assumed to allow sufficient costs to achieve upper quartile leakage performance'.[114] However, it subsequently identifies that 'any costs of achieving the leakage reduction targets will not be included in base cost models' because they are a step-change in performance.[115] The outcome of the CMA's provisional findings includes enhancement allowance for Yorkshire Water which currently

[113] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 404, paragraph 6.85.
[114] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 492-493, paragraph 8.55.
[115] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 493, paragraph 8.59.

perform below upper quartile levels and will not achieve upper quartile by 2024-25.

A3.5 We welcome the CMA's provisional recognition that the base cost allowance is sufficient to maintain current leakage performance for companies at or below upper quartile levels of leakage.[116] However, our position remains that we would expect the majority of companies to also fund leakage reductions from our base allowance.[117]

A3.6 The CMA broadly agreed with our position on all other common performance commitments that base funding in each price review includes the scope to make improvements to meet common performance commitment levels, which can then be sustained at a lower ongoing cost.[118] There is no reason that the same would not be true for leakage, in particular given technological innovation and 2019-20 performance in this area.

A3.7 The CMA has referenced consulting its engineering consultants, WRc, to reach its provisional findings: 'Our engineering advisers also told us that the PCs were achievable, but would be likely to require additional expenditure, **at least for some** companies' [our emphasis].[119] We agree with WRc's conclusion that additional expenditure may not be applicable for all companies, but we would value being able to understand the evidence and reasoning underpinning WRc's conclusions in order to make informed representation before the CMA's final determinations.

A3.8 The overall trend over the past two decades masks some large reductions in leakage made by individual companies. However some companies have simply not stepped up. Recent performance data on leakage shows that large reductions in leakage are possible. We have observed a 7% annual reduction across the sector in 2019-20, with six companies achieving reductions of equal to or greater than 10%. This dramatic transformation in performance with no additional funding, after 19 years of stagnation, highlights the important role that a regulator can play by challenging the sector.

[116] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 489, paragraph 8.44.
[117] In our final determinations we only made enhancement leakage allowances to four out of 17 companies. We considered the remaining 13 companies should fund leakage reduction from our base allowance. Ofwat, 'Reference of the PR19 final determinations: Cost efficiency – response to common issues in companies' statements of case', May 2020, pp. 56-59.
[118] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 432-433, paragraphs 7.73 – 7.74.
[119] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 485, paragraph 8.21.

A3.9 To deliver their improved 2019-20 performance, companies have invested to improve their leakage reduction capabilities. The benefits of new equipment, engagement to increase customer awareness, improved data systems, increased organisational focus on leakage and upskilling of staff can reasonably be expected to continue into 2020-25 without the requirement for significant additional expenditure.

A3.10 We therefore consider that it would not be in customers' interest to presume that the base cost allowance provides no scope for poorly performing companies to further reduce leakage levels.

A3.11 We also find limited evidence for external benchmarking of cost or benefits related to leakage reduction activity in companies' responses to RFI018A. The majority of forecast costs and outputs are based on companies' own historical data. This poses the risk that customers may fund inefficient or ineffective practice if this information was used without appropriate challenge to set allowances.

A3.12 Last, we consider the CMA's assumption that upper quartile companies have historically been fully efficient in reducing leakage to be flawed and contrary to historical and recent evidence on leakage performance. The CMA's approach undermines our ability as a sector regulator to call areas of concern and step in to challenge the sector to do better. For the avoidance of doubt, we do not consider that paying companies extra to reduce leakage is a challenge to their poor performance, rather it is a reward for failure.

A3.13 We note the CMA concluded: 'We have not seen any evidence that the Disputing Companies, specifically, profited by underperforming their leakage targets, or by obtaining excessively generous funding for those targets.'[120] This fundamentally misunderstands our concern. The sector could over the past 20 years, have pushed much harder to reduce leakage through innovation and adoption of new techniques at no further cost to customers. This would not show up as cost outperformance, but as stagnant performance while spending in line with cost allowances.[121] So the question is not whether poorer performers on leakage have made excessive returns: it is whether or not their historical performance represents an efficient level of performance.

[120] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 494 - 495, paragraph 8.63.
[121] A form of "X inefficiency", which might be expected in an industry without any competitive pressure or threat of entry.

The purpose of setting the 15% challenge to the sector in our PR19 methodology was to stimulate the sector to turn around its performance.

Concerns regarding availability of information and the process followed

A3.14 The provision of company information late in the process and the limited detail available regarding the CMA's assessment approach **does not allow us adequate time or information to fully respond in this important area.**

A3.15 The CMA acknowledged in its provisional findings that it was seeking further more detailed information for review to determine companies leakage enhancement expenditure.[122] This included the option for Northumbrian Water, who throughout the process to date have not requested such expenditure, to submit revised requirements. The CMA issued a request for further information (RFI018A) to all parties on 6 October 2020. Following an extension to the submission deadlines all companies' responses were received by 16 October 2020.

A3.16 We therefore had only seven full working days remaining out of the 20 day consultation period to respond to this new information. This was further compounded by two companies stating they would only confirm the allowances they were requesting in their responses to the provisional findings on 27 October 2020. While we have assessed the information as far as we could in the time allowed, we do not yet fully know what the companies will request and how the CMA will approach its determinations.

A3.17 Leakage was a key headline policy area for us in PR19 and **unless we have further adequate consultation on this area we consider this would be a significant flaw in the CMA's decision making**; as a result we consider the CMA's approach to determining efficient leakage reduction costs requires proper consultation before the CMA makes its final decision.

[122] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 497, paragraph 8.74.

Yorkshire Water: review of requested costs

Leakage performance

A3.18 Yorkshire Water's leakage performance deteriorated since 2012-13, both in actual terms and relative to the rest of the sector (see Figure A3.1).

A3.19 Yorkshire Water is a worse performer than the 2019-20 sector median, and by 2024-25 will still be performing worse than the 2019-20 median (see Figure A3.2). The company was funded to make improvements and maintain lower leakage levels in 2015-20 but performance has deteriorated in three-year average leakage terms between 2014-15 and 2019-20.

A3.20 In 2019-20 Yorkshire Water achieved a 7% reduction, which it attributes to its leakage reduction strategy.[123] This suggests that the company can respond when challenged to deliver more in terms of leakage reduction. However, despite the 7% reduction in 2019-20 to 271 Ml/d:

- The company's annual leakage levels remain higher than its historical minimum (265 Ml/d in 2012-13); and
- The three year average leakage level increased during the 2015-20 period, from 2014-15 (278 Ml/d) to 2019-20 (287 Ml/d).

A3.21 Our position therefore remains that Yorkshire Water should not receive any enhancement funding – this would result in its customers paying more than customers of other companies, for poorer performance.

[123] Yorkshire, 'Water Annual Performance Report 2019-20', July 2020, p. 70. This is an annual average leakage improvement in terms of the historical reporting method.

Figure A3.1: Sector and Yorkshire Water comparative leakage performance 2011-12 to 2019-20, annual average leakage based on historical reporting with 2011-12 levels set as 100

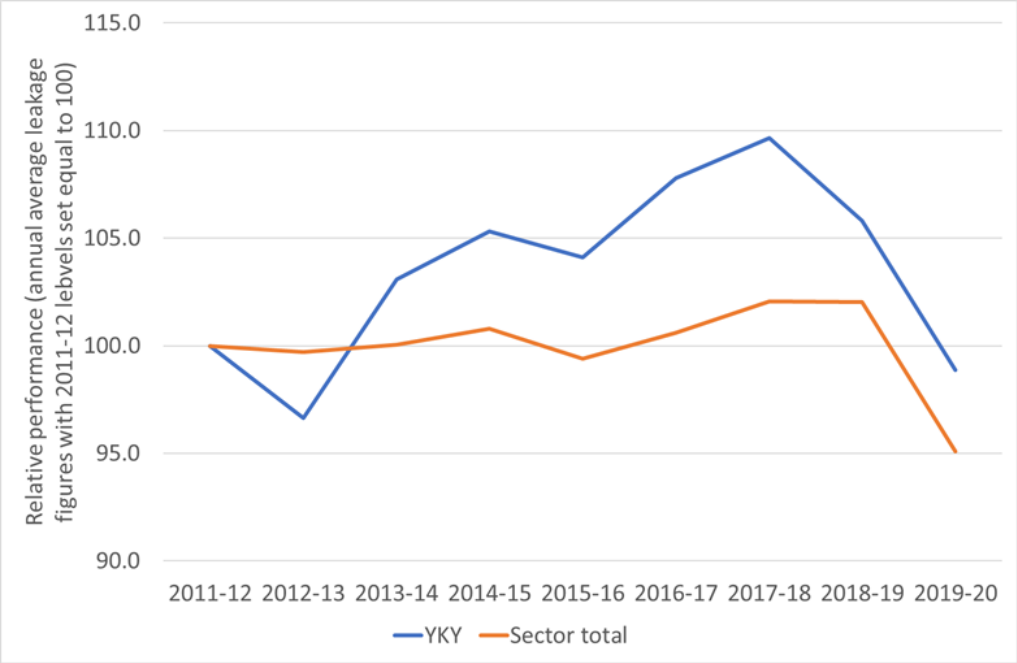
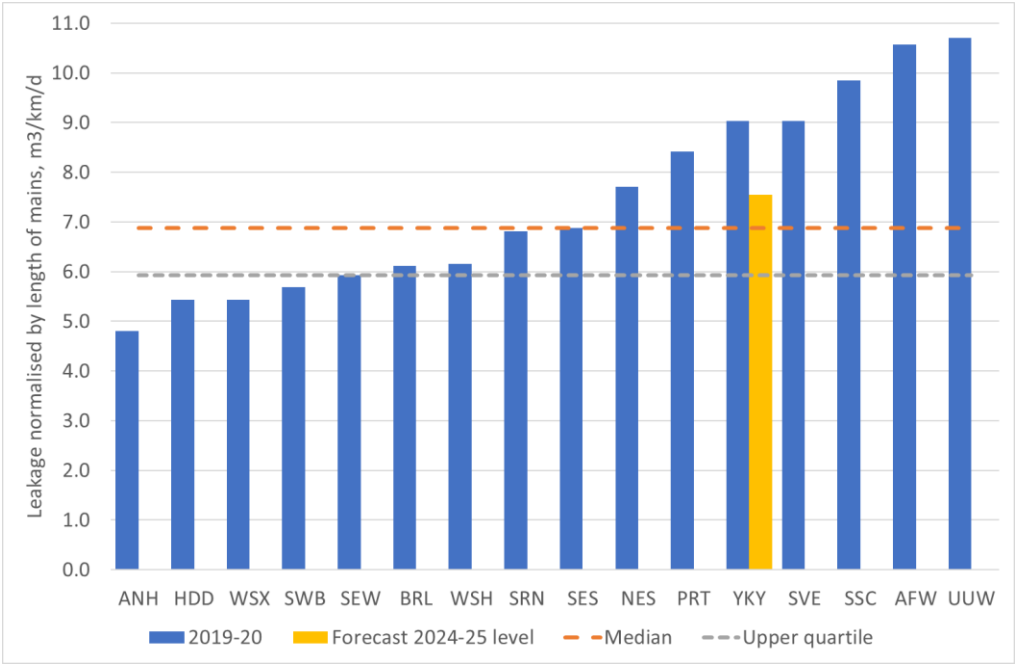


Figure A3.2: Sector comparative annual average leakage performance, normalised by mains length, m³/km/d, 2011-12 to 2019-20[124]



[124] Presented in terms of three year average leakage levels showing Yorkshire Water position if 2024-25 performance commitment level reduction of 15% is achieved. Leakage figures reported in terms of

Is Yorkshire Water's performance consistent with its historical funding?[125]

A3.22 We set Yorkshire Water a target of improving leakage by 10 Ml/d at PR14, based on an expected starting leakage level in 2014-15 of 297.1 Ml/d. Our totex allowance to Yorkshire Water at PR14 included allowances to both enhance its supply-demand balance position through reducing leakage and to deliver leakage performance at the levels specified in its draft water resources management plan 2014 (dWRMP14).[126]

A3.23 Yorkshire Water's leakage performance deteriorated from its position at initial submission of PR14 business plans of 264.6 Ml/d in 2012-13. However, the company's starting position in 2014-15 for the 2015-20 period (288.4 Ml/d) was in reality notably better than its proposed performance commitment level (297.1 Ml/d) used to set outcome delivery incentives (ODIs), resulting in performance levels that turned out to be very easy to achieve within the funding provided.

A3.24 Despite the favourable starting conditions, the company failed its performance commitment in 2017-18, and only just met it in 2016-17 and 2018-19. **We consider that Yorkshire Water has not delivered sustained leakage improvements in line with its PR14 funding.** This funding provided the opportunity for the company to innovate, adopt new techniques and efficiently deliver effective leakage reduction. Customers should not be required to pay twice for improvements through an enhancement allowance at PR19.

Table A3.1: Yorkshire Water's performance commitment, dWRMP14 and actual performance levels, annual average leakage levels, 2015-20

	2014-15 (starting level)	2015-16	2016-17	2017-18	2018-19	2019-20
Performance commitment levels (Ml/d) [127]	297.1 (forecast)	297.1	297.1	297.1	292.1	287.1

historical methods used by companies in 2015-20 period. Thames Water is omitted from chart for clarity (Thames Water's 2019-20 position is 20.9 m^3/km/d).

[125] The CMA provisional findings states 'Our analysis of the leakage targets that were set in the past, and the Totex allowances that were given, suggests that historically both were set in tandem'. Competition and Markets Authority, 'Provisional findings report', September 2020, p. 494, paragraph 8.62.

[126] The draft version of the plan was the latest available for PR14 model inputs and referenced a level of leakage of 260 Ml/d in annual average terms being achieved by 2019-20.

[127] Ofwat, 'Final price control determination notice: company-specific appendix – Yorkshire Water', December 2014, p. 116.

	2014-15 (starting level)	2015-16	2016-17	2017-18	2018-19	2019-20
Draft WRMP 2014 profile (Mld)	–n/a	272.1	269.0	265.8	262.7	259.6
Actual performance (Ml/d)	288.4 (actual)	285.1	295.2	300.3	289.8	270.8

A3.25 As set out in paragraph A3.20, Yorkshire Water has demonstrated in 2019-20 (270.8 Ml/d), it is capable of improving performance rapidly and substantially, returning to its 2012-13 levels.

A3.26 It is important to note that at PR19 we set leakage performance commitments in terms of percentage reductions from three year average leakage levels in 2019-20. For Yorkshire Water we have set a reduction of 15% across the 2020-25 period.

A3.27 Yorkshire Water's deteriorating annual average performance followed by rapid improvement across the 2015-20 period results in an elevated three year average leakage starting point for its PR19 performance commitment (286.9 Ml/d in 2019-20). In other words, **Yorkshire Water can achieve 16.1 Ml/d of its required three year average improvement, simply by maintaining its current level of performance.** This is 5.6% out of the total 15% performance commitment level reduction required by 2024-25. The company's three year average is elevated by its worse performance in 2017-18 and 2018-19, although we recognise some of that may have been caused by the freeze-thaw event in early 2018. However, customers should not pay again for improvements Yorkshire Water has already been funded for and achieved.

Table A3.2: Yorkshire Water's starting leakage position for PR19: in annual average and three-year average terms

	2013-14 three-year average	2019-20 annual average	2019-20 three-year average	PR19 performance improvement gained from maintaining 2019-20 position
Leakage performance (Ml/d)[128]	273.6	270.8	286.9	16.1

Improvements in leakage funded in base in PR19

A3.28 While some of the improvement made by Yorkshire Water in 2019-20 will require ongoing spend to be sustained in 2020-25, we do not consider that it all will. For example, the majority of loggers installed in 2019-20 should last for well over 5 years and do not need to be replaced within 2020-25, and improvements to the operational effectiveness of the leakage team should be sustained through the base allowance.[129] The company itself recognises the ongoing benefits of such interventions in its September 2018 business plan 'using the 40,000 acoustic loggers currently being deployed across Yorkshire, will result in a **sustained** circa 10Ml/d leakage reduction' [our emphasis].[130]

A3.29 In its September 2018 Business Plan, Yorkshire Water set out plans to substantially reduce leakage prior to the start of AMP7 (2019-20), reaching 235 Ml/d by 2019-20 through a 62.5 M/d leakage reduction over 2018-20, investing £119 million funding from PR14 outperformance. It noted this approach '…will ensure that the full cost of improving our current position to future upper quartile performance does not fall on customers in AMP7.' [131] This makes it clear that the company did not expect customers to fund the full costs of moving towards upper quartile in performance.

[128] The figures presented in this table are expressed in terms of Yorkshire Water's historical leakage reporting methodology.
[129] Typical minimum asset life for telemetry and instrumentation and control equipment identified in the range of 7 to 10 years from UKWIR, 'Understanding the impact of shorter life assets on the long term maintenance requirements', 2012. Anglian Water identifies 7 year asset life; Anglian Water, 'RFI018A response', October 2020, p.13.
[130] Yorkshire Water, Exhibit 067-016, 'IAP response document', 1 April 2019, p. 89.
[131] Yorkshire Water, Exhibit 66-048, 'Appendix 8f- Wholesale Cost Appendices', September 2018, p.91.

A3.30 Overall, it is clear that we and Yorkshire Water agree that it is capable of making improvements within base funding. We consider it is reasonable to expect the company can make at least some further improvement within base funding in 2020-25.

A3.31 Yorkshire Water improved annual average leakage performance by 19.0 Ml/d in 2018-20. Reviewing the company's capex expenditure for the 2018-20 period we consider that at least one-third of this expenditure relates to investments such as loggers and support equipment. This investment will continue to provide benefits in supporting leakage reduction in the 2020-25 period without the need for replacement. Therefore taking a very conservative approach that less than one-third of this improvement is permanent reduction funded by one-off costs, this implies at least a further 5 Ml/d of improvement is included in PR19 base funding.

A3.32 Combined with the improved starting level achieved in 2019-20 (270.8 Ml/d), our conclusion is that Yorkshire Water should at least be maintaining a three year average leakage level of 265.8 Ml/d through its PR19 base allowance.[132] This is 7.4% out of the total 15% performance commitment level reduction required by 2024-25.

PR19 enhancement funding – Bottom-up efficiency challenge for Yorkshire Water

A3.33 In its RFI 018A response, Yorkshire Water provides no evidence to demonstrate it has identified the best value option for leakage reductions, benchmarked the efficiency of its costs or validated its key assumptions. The company appears to rely almost exclusively on its historical costs and its 'expert judgement' of what can be achieved in the future.

A3.34 We consider the company's selection of a continuation of its active leakage control activities to represent a very risk averse approach. This results in the potential for perpetuating previous inefficiencies and ineffectiveness in delivery in future costs borne by customers. The company states that its strategy for 2015-20 'considered water industry best practice for leakage detection and repair techniques'.[133] It does not explain how these or further

[132] This figure is annual average leakage expressed in terms of the historical leakage reporting method used by the company in PR14. It is comparable to the historical annual average minimum leakage level of 264.6 Ml/d recorded in 2012-13. We consider the value of 265.8 Ml/d is equivalent to 290.3 Ml/d following the new leakage reporting methods, based on Yorkshire Water's revisions to its leakage assumptions in July 2020.
[133] Yorkshire Water, 'Response to RFI018A', October 2018, p.2, paragraph 1.10.

considerations influenced its planning or informed its understanding of effective leakage reduction activities or efficient costs for 2020-25. Considering the company's relative performance position within the sector we expect opportunities exist for learning lessons from others and adopting best practice approaches. The 15% leakage challenge set in our methodology is a challenge to companies to innovate and improve their performance and not simply to do more using the same processes and techniques as used historically.

A3.35 The company's proposed options do not clearly reference those included in its published final WRMP19. We note that despite the company's focus on delivering more of the same active leakage control activities there are a number of feasible options in the WRMP19 with lower average incremental costs (AIC). There is approximately 60 Ml/d of leakage reduction in the WRMP19 from options of a lower AIC than any active leakage control option. As stated in response to RFI018A, active leakage control is the primary option selected by the company. While some of these options may be delivered through the proposed investment in loggers we do not find in the RFI 018A response a transparent optioneering process referencing the options, costs and benefits the company identified in its published WRMP19.[134] On that basis any allowed enhancement costs should be subject to the 20% optioneering cost challenge to align with other decisions in the CMA's provisional findings.

A3.36 The company maintains that costs will increase as it drives leakage levels down. However, we do not consider its activity level and cost estimates appropriately reflect the impacts of improvements and investments it has made to date. These include but are not limited to:

- Improvements to its leakage calculation;
- Upgrades to its Netbase system;
- Investments made in 2018-20 including loggers and leakage detection equipment; and
- Network optimisation, including a calm network approach.

A3.37 Yorkshire Water recognises that investment to improve performance from prior periods should be considered base expenditure in future periods. The company states with regards to 2025-30 (AMP8) requirements 'YWS's current

[134] Yorkshire Water, 'WRMP19 Grid surface water resource zone data tables', Table 5. Feasible options, Leakage options identified with a D prefix in option references.

view is that some of the leakage-related enhancement expenditure in AMP7 would need to be repeated in AMP8 and would likely be treated as a base cost at that time.'[135]

A3.38 The company provides a limited breakdown of the £94.7 million requested and this falls into two principal categories:

- Increase in number of active leakage control full time equivalents (FTEs) to 200, £81.0 million; and
- Initiatives to enhance productivity of active leakage control activities, £13.7 million.

A3.39 The company identifies an increase in active leakage control FTEs to 200 is necessary to deliver its leakage performance commitment levels. Yorkshire Water estimates that 136 FTEs at a cost of £73 million would be required to approximately maintain its 2019-20 levels. Note 'this steady-state' situation described by the company would result in a rise in leakage from 271 Ml/d to 273 Ml/d.[136] It is not clear from the evidence presented why a cost to maintain a stable level cannot be derived. The company has not provided comparison of its estimate of costs or FTEs to its outturn figures for actual active leakage control in the 2015-20 period.

A3.40 It is unclear why increasing the number of FTEs in this area by 64 raises an additional cost of £41.7 million when 136 FTEs can be employed at 'an efficient operating expenditure' of £73 million.[137] The company additionally states an approximate cost of 100k per FTE per annum including support costs. The company does not explain if it considers there is a variation in cost between FTEs delivering 'steady-state' performance and those delivering further leakage reductions. We also note that Yorkshire Water has invested in supporting equipment such as vehicles and leakage detection equipment for leakage resources in 2018-20 to enable it to be ready for the leakage reduction challenge in 2020-25. It will not need to spend this money again.

A3.41 To estimate leakage resource requirements Yorkshire Water uses a model underpinned by historical data. The company provides limited overview of the model's basis and operation. We do not consider that the information provided

[135] Yorkshire Water, 'Response to RFI018A', October 2020, p.15, paragraph 2.43.
[136] Annual average leakage levels, historical reporting method.
[137] Quote from Yorkshire Water, 'Response to RFI018A', October 2020, p.7, paragraph 2.5. 41.7 million calculated by subtracting the £73 million from the total provided for 200 FTEs of £114.7 million.

provides confidence that the costs presented are reliably projected or efficient. Our key concerns are summarised as follows:

- The forecasts are reliant on historical data and therefore any inefficiency or ineffectiveness is being carried forward. It is unclear how the company has accounted for the investments and improvements made in its leakage capabilities in 2018-20 in its future forecasts;
- The company's model uses figures up to 2018-19 and therefore does not include data from 2019-20 where the company achieved significant leakage reductions, this is particularly an issue in the data used to establish 'Average ALC Survey Benefit per survey hour';[138]
- The company reports that it models uncertainty regarding inputs such as natural rate of rise of leakage. However, it does not provide detail of how it validates the appropriateness of the profiles generated considering the relatively limited range of data inputs used and the conditions experienced in these periods. The natural rate of rise only uses performance from 2015-16 to 2018-19 as a basis;
- The company mentions that its model has been assured by PwC but provides no further detail in this area, for example whether the model been validated by comparing forecast to actual 2015-20 resource and cost requirements; and
- There is limited evidence that Yorkshire Water has benchmarked its costs against other companies or third-party leakage providers. We find insufficient evidence regarding how best practice learning from better performing companies in the UK and abroad has been incorporated into its approach.

A3.42 The company has also identified £45 million of additional capex expenditure. However, the company provides little detail of the basis for these costs, benchmarking evidence for their efficiency or justification for their inclusion as enhancement expenditure. We are concerned that maintenance activities described such as meter renewal maintenance are included in the base allowance. We are further concerned regarding the potential for double counting because the company has considered that £60k of the approximate total cost per FTE per annum of £100k is attributable to repair and maintenance costs.

[138] ALC – 'active leakage control'

A3.43 The company provides very limited data to support its proposed £13.7 million investment in productivity and only provides narrative to cover £12.3 million of the total expenditure. Our key concerns are summarised as follows:

- We challenge strongly that customers should be expected to fund Yorkshire Water's productivity-enhancing initiatives. Other companies are already providing better leakage performance and the CMA has stated an expectation that these companies should maintain upper quartile performance through their base allowances;[139]
- The company states that 'these are new initiatives and so, rather than being based on historic data, they were based on the business' experienced judgement and developed with input from both internal and external subject matter experts.' The company provides no further detail of the process it used to develop the activity schedule and identify associated efficient costs in this area. We do not consider this statement sufficient evidence that the activities and costs proposed represent efficient expenditure that customers should be expected to fund as enhancement.[140]
- The derivation of the number of additional loggers required and evidence for an efficient unit costs is not provided. Also Yorkshire Water does not provide detail of its estimation of asset-life expired loggers and we would not expect the significant numbers of loggers obtained in the 2018-20 period to require replacement in 2020-25;
- We would also expect the company to be able to replace some of its asset life expired loggers through its base allowance. This activity is an asset maintenance activity and it could be reasonably expected that base funding would be sufficient to fund replacement of at least a similar number of loggers to those replaced in the 2011-19 period (which covers the input to the models). Also any maintenance expenditure previously spent on equipment no longer used or earlier versions of such loggers would be included in the base allowance and therefore available in the PR19 allowance. We would expect companies to account for this in their requests. In the absence of such detail we would suggest a challenge of 20% on the proposed costs;
- The proposals to ensure minimum standards concerning the availability of pressure and flow data appear to be related to maintenance of existing assets and systems that we would expect to be included in the base allowance; and .

[139] Competition and Markets Authority, 'Provisional findings report', September 2020, p.489, paragraph 8.44.
[140] Yorkshire Water, 'Response to RFI018A', October 2018, p.9, paragraph 2.12.

- The company identifies £3.5 million associated with deploying additional field resources to quantify and validate leakage. A supporting build up for these activities and costs is not provided.

PR19 enhancement funding – Top-down efficiency challenge for Yorkshire Water

A3.44 Yorkshire Water requested requests £94.7million to improve leakage in three year average terms from a starting position of 313 Ml/d in 2019-20 to 266 Ml/d in 2024-25[141], a unit cost of £2.0m/Ml/d. We still consider that it should not receive any enhancement funding, but set out here our views on an appropriate unit cost should the CMA retain its provisional position to fund it.

A3.45 There is merit in comparing unit costs both to Yorkshire Water's prior estimates and between companies to identify efficient unit costs, even if the comparison is not always perfect. The company misrepresents our final determination position in its comparison of its unit cost for leakage to our feeder model industry median value of £2.03 million. In our final determinations we did not identify this value as an efficient unit cost rather it was a threshold beyond which we challenged the unit costs of upper-quartile performing companies. As Yorkshire Water is one of the poorest performers on a comparative basis, we would expect it to have one of lowest marginal costs in the industry, closer to the upper quartile unit cost value, if it were efficient in its expenditure.

Table A3.3: Comparison of Yorkshire Water's unit costs with its own previous estimates and those of other companies.

Proposal	Unit cost (£m/Ml/d)[142]	Forecast to reduce leakage[143]
PR14	0.25	Forecast to reduce leakage from 319.0 Ml/d to 291.8 Ml/d Reduction of 9%

[141] Yorkshire Water, 'Response to RFI012', August 2020. Leakage figures reported are consistent with the new reporting methods. The company updates its assumptions using the company's updated calculations from July 2020.
[142] Unit cost in terms of three year average leakage reduction.
[143] All leakage figures expressed in terms of three year average consistent with Yorkshire Water's interpretation of the new leakage reporting methods. The company revised its assumptions associated with the new method in July 2020, resulting in a change in values previously submitted during the PR19 business planning process and reference to the CMA.

September 2018	2.6	Forecast to reduce leakage from 294.9 Ml/d to 199.7 Ml/d Reduction of 32%
April 2019	1.7	Forecast to reduce leakage from 315.9 Ml/d to 235.1 Ml/d Reduction of 26%
August 2020 (RFI012)	2.0	Forecast to reduce leakage from 313.4 Ml/d to 266.4 Ml/d Reduction of 15%

A3.46 The industry PR19 requested unit cost for leakage enhancement upper quartile (£0.6 m/Ml/d) is significantly lower than Yorkshire Water's proposal.[144] In comparison, for its 2020-25 leakage improvements, Northumbrian Water's overall unit cost is £0.5 m/Ml/d and more specifically its identified unit cost for active leakage control is between £1.0 and £1.2 m/Ml/d.[145] These unit costs are significantly lower than Yorkshire Water's request despite Northumbrian Water having lower relative leakage levels.

A3.47 We would expect the unit rate for Yorkshire Water's August 2020 proposal to be materially lower than the than the £1.7 m/Ml/d previously proposed by the company in April 2019 for more stretching improvements. We consider that the eight-fold increase in forecast costs from PR14 requires further explanation.

A3.48 We consider that taking the average of a) the industry upper quartile and b) the average of Yorkshire's unit costs at April 2019 business plan and CMA submission is appropriate, i.e. £1.2 m/Ml/d. This triangulation balances an efficiency challenge using industry-wide data with the company's latest cost estimates (which is higher than its previous cost estimates for more stretching improvements). The resulting value also aligns with the rate we used in our 2020-25 supply- demand balance enhancement assessment (£1.2 m/Ml/d).

PR19 enhancement funding – calculating the allowance for Yorkshire Water

A3.49 **We consider that Yorkshire Water is fully funded through its base allowance to achieve its leakage performance commitment levels and therefore no enhancement funding is needed.** We do not consider that the further information provided by the company to the CMA in its response to

[144] Unit costs for leakage reduction are calculated in Ofwat, 'Wholesale Water Enhancement feeder model: Supply demand balance', December 2019.
[145] Northumbrian Water, 'Response to RFI018A', October 2020, p.8 and Northumbrian Water, 'RFI018A-001 Appendix 1 - Summary of interventions and costs', 'Overview'.

RFI018A provides sufficient justification and supporting evidence for us to revise our determination.

A3.50 However, if the CMA concludes that an allowance is necessary, we have set out clearly why a significantly lower allocation than that made in the provisional findings would be appropriate. We have assessed the information available through a bottom-up and top-down approach below as follows.

- On a bottom-up basis,
    - Customers should not be expected to fund the £13.7 million of productivity improvements identified by the company;
    - The £45 million of additional capex maintenance expenditure should be considered to be included in the base allowance;
    - The company attributes the remaining £114.7 million to the active leakage control component and identifies that £5.7 million can be removed due to forecast efficiency gains;
    - We divide the remaining £109.0 million based on the number of active leakage control FTEs allocated to maintaining (136) or enhancing the leakage position (64). The maintaining element is provided through the base allowance;
    - To the remaining enhancement element of £34.9 million we apply an optioneering challenge of 20% on the basis of the company providing limited evidence of optioneering and innovation within its plan. We subsequently apply the same efficiency challenge used by the CMA to result in an allowance of £27.9 million.[146]
- On a top-down basis, the unfunded element of the leakage improvement is at most from 290.3 Ml/d to 266.4 Ml/d, i.e. 23.9 Ml/d improvement, 51% of the total enhancement reduction required to deliver the company's performance commitment levels. We identified an appropriate maximum unit cost of £1.2m per Ml/d which results in a totex enhancement allowance of 23.89 x 1.2m = £29.5m

A3.51 Triangulating the results from both approaches would therefore result in a maximum enhancement allowance of £28.7 million.

[146] Calculated using the efficiency challenge identified by the CMA in 'Leakage totex calcs tables 8-2 & 8-3 PFs', 'Cost PFs' followed by application of frontier shift and RPE.

Northumbrian Water: review of requested costs

A3.52 Northumbrian Water states that it will confirm its position with respect to the treatment of leakage in its full response to the CMA's provisional findings. At present we do not consider that the company is requesting additional base or enhancement expenditure. Dependent upon the company's position in its response to the provisional findings, we reserve the right to comment further.

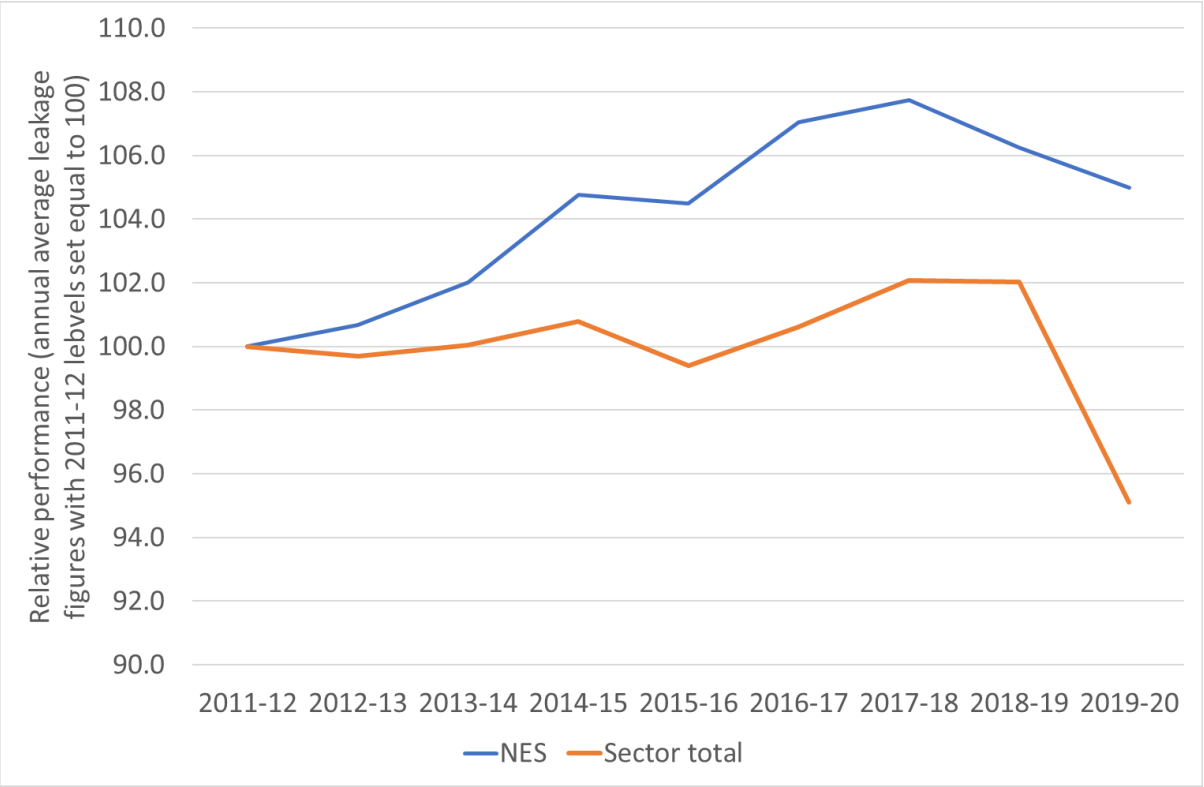
A3.53 We consider that the provisional determination of no base adjustment or additional leakage enhancement expenditure to Northumbrian Water is consistent with the company's plans that were presented to us, its customers and stakeholders during PR19. The company also confirmed that it did not require additional cost allowance to deliver its leakage performance levels during its CMA hearing.[147] We do not consider there is requirement or justification for providing any additional expenditure to the company for leakage reduction.

A3.54 We summarise below our analysis of the latest performance data and the company's response to RFI018A to support the conclusion of making no additional allowance to Northumbrian Water:

- Northumbrian Water's 2019-20 leakage position is worse than the industry upper quartile in both normalised measures and below the median in one;[148]
- The company will not reach 2019-20 upper quartile performance levels in both normalised leakage measures even if it achieves its 2020-25 performance commitment level;[149] and
- The company's three year average leakage position deteriorated from 2014-15 to 2019-20 period, increasing from 193 Ml/d to 201 Ml/d. Current leakage levels are higher than its historical minimum of 190 Ml/d.

[147] Competition and Markets Authority, 'Northumbrian Water hearing', August 2020, p.62, lines 7-11.
[148] Company's 2019-20 leakage performance normalised by mains length, 7.7 m^3/km/d, upper quartile level is 5.9, median is 6.9. Normalised by property number is 98.7 l/prop/d, upper quartile level is 85.2, median is 105.0.
[149] Company will not achieve 2019-20 upper quartile by 2024-25 in terms of leakage per kilometre of mains but will in terms of leakage per property.

Figure A3.3: Sector and Northumbrian Water comparative leakage performance 2011-12 to 2019-20, annual average leakage based on historical reporting with 2011-12 levels set as 100



A3.55 Northumbrian Water identifies that its 2015-20 expenditure will continue to deliver leakage benefit into 2020-25, the example presented makes reference to its noise loggers.[150]

A3.56 Most of the company's costs and benefits are based on its own historical information for active leakage control. There is limited evidence for cost or benefit benchmarking of its proposed activities. This poses the risk that customers may fund inefficient or ineffective practise.

Anglian Water: review of requested costs

Base adjustment to maintain leakage levels

A3.57 The CMA has provisionally allowed Anglian Water additional base costs to maintain leakage levels in the 2020-25 period. We understand that this decision has been made in recognition of the company's current leakage performance. We agree with the CMA's position that 'even for these high-

[150] Northumbrian Water, 'Response to RFI018A', October 2020, p.2, paragraph 7.

performing companies the implicit allowance should cover the bulk of their costs, specifically the part that corresponds with upper quartile performance'.[151]

A3.58 We consider our approach to setting a leakage base cost adjustment for Anglian Water remains appropriate but recognise that different approaches could be adopted. We support that the CMA has proposed an adjustment of a similar magnitude to our own despite using an alternative approach.

A3.59 We have reviewed the company's response to RFI018A and consider there is no new evidence provided to justify further adjusting the base allowance from the provisional findings. The following points summarise our considerations in response to the company's latest submission.[152]

- The company did not deliver its targeted 2019-20 annual average leakage position of 172 Ml/d. The company highlights the impact of the 2018 freeze-thaw event however we consider there was funded opportunity to drive down leakage further prior to this point.

Table A3.4: Annual average leakage performance Anglian Water 2014-15 to 2019-20 (Ml/d)

2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
192.0	182.6	184.7	182.7	191.2	182.4

- The company references soil type as a specific challenge it faces in its region. We consider that the evidence in the previously submitted report did not draw any conclusions regarding the ease of managing leakage in the Anglian Water region. The report focused on a subset of the wider range of factors expected to impact a company's ability to manage leakage. The report fell short of making a compelling case that Anglian Water was significantly more exposed to leakage risk;[153]
- There is limited evidence of cost benchmarking with the company stating it is difficult to find efficiency benchmarks and that it has based its leakage reduction costs on its data from 2015-20. The company highlights the impact of extreme weather events on costs but does not

[151] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 490, paragraph 8.46.
[152] Anglian Water, 'Response to RFI 018A', October 2020.
[153] Ofwat, 'Reference of the PR19 final determinations: Final submission to the CMA', p. 21.

clarify the forecast return periods for such events or the potential reduction in costs resulting from periods of benign weather. We also use a three year average performance commitment measure for leakage in recognition of variations due to weather;[154]

- The company provides limited detail regarding how the leakage reduction activities it has identified and detailed in its WRMP, such as targeted investigation, pressure management and intensive investigations relate to and inform the costs presented for both base and enhancement costs; [155] and
- The WRMP supporting information from September 2018 identifies the sources of data used to build up costs for leakage activities but does not provide evidence of their efficiency. Of particular concern is targeted intervention of high leakage district metered areas. The costs are based on expert judgment with a limited historical dataset to draw upon. The assumption regarding proportions of 'easy' (23%) and 'hard' (77%) leakage appears to have a significant bearing upon the costs of Anglian Water's leakage management activities in the 2020-25 period.[156]

Enhancement expenditure allowance for leakage reduction

A3.60 The provisional determination allowing enhancement expenditure to Anglian Water aligns with our final determination. However, we consider the costs presented by the company in this area are not demonstrably efficient and should be challenged through both bottom-up costs and top-down unit cost considerations.

- The company provides a summary table of its proposed one-off and recurring expenditure however it does not describe how the level of activity has been identified in each area and provide specific evidence of efficient costs. For example, a large proportion of costs relates to asset replacement such as noise and pressure sensors, but no specific detail is provided regarding the forecast of numbers and the derivation of the related unit costs. As stated for Yorkshire Water we would expect that base funding would be sufficient to fund replacement of at least a similar number of loggers to those replaced in the 2011-19 period (which covers the input to the models). The company focuses on

[154] Anglian Water, 'Response to RFI018A', October 2020, p.10.
[155] Anglian Water, 'A004 – WRMP 2019 Demand management options', September 2018.
[156] Ofwat, 'Reference of the PR19 final determinations: response to Anglian Water's statement of case', May 2020, p. 109, paragraph 3.225. Anglian Water, 'A004 – WRMP 2019 Demand management options', September 2018, pp. 44-5

discussions of its general costing approach and it is not clear how this would apply to an activity such as optimisation;[157] [redacted]

- The outturn leakage level in 2019-20 which forms the starting point for reductions in the 2020-25 period is now higher than that forecast in the company's September 2018 business plan submission. The unit cost forecast for leakage reduction has not however been reduced by the company. This is despite the company stating the importance of starting point to leakage costs and proposing a relationship where leakage costs decrease with increasing levels of leakage; and[158]
- At PR14 the Anglian Water proposed a leakage reduction cost of £1.7m/Ml/d.[159] This unit cost was for a leakage reduction of 193 Ml/d to 172 Ml/d on an annual average basis for the period 2015-2020. At PR19 the company now proposes a unit cost of £3.3m/Ml/d for a reduction from 182.4 Ml/d to 159.1 Ml/d. We do not consider that the company has adequately explained the significant increase in costs considering the overlap in the ranges of leakage reduction between the two business plans. Taking the approach of applying PR14 cost to reduce down to 172 Ml/d and the PR19 cost beyond this results in a revised average unit cost of £2.6m/Ml/d and a maximum enhancement allowance of £60.4m.

Bristol Water: review of requested costs

A3.61 The company intends to provide an updated leakage case as part of its response to the provisional findings and has commissioned an external study to support this. We therefore do not have full visibility of the company's proposals which it indicates have altered significantly in the context of its 2019-20 performance. Our following comments therefore focus on limited areas of the current evidence the company has presented to date that would likely remain relevant under a revised approach. We reserve the right to comment further once the company provides additional information in this area.

A3.62 The CMA has provisionally allowed Bristol Water both additional base costs to maintain leakage levels and an enhancement allowance to reduce leakage levels in the 2020-25 period.

[157] Anglian Water, 'Response to RFI018A', p. 13.
[158] Anglian Water, 'Response to RFI018A', pp. 10-11.
[159] Costs presented in Anglian Water, 'A003 - Revised PR14 business plan data table commentary, p. 28' have been converted to the 2017-18 price base.

A3.63 We did not consider a base allowance was justified for Bristol Water in our final determination, but we did allow the company's enhancement allowance in full. This resulted in an overall allowance of comparable magnitude to the CMA's provisional findings. We therefore recommend that any amendments to the allowances for base and enhancement are considered in the context of the overall leakage allowance made.

A3.64 Our position remains that we do not consider a base adjustment is necessary for Bristol Water. We note that in the company's WRMP it stated that continuing its capital maintenance activities would be sufficient to reduce leakage from 43 Ml/d in 2019-20 to 39.3 Ml/d in 2024-25 and hold leakage steady at this level.[160] The company additionally identifies initiatives such as 'calm DMA' approaches and installation of pressure transient loggers undertaken in the 2015-20 period. We would expect benefits from these investments to continue into the 2020-25 without significant additional expenditure.[161]

A3.65 Bristol Water identified it is retaining a leakage reduction target of 6.5 Ml/d despite outperforming its forecast position for 2019-20. In our final determinations we based our performance commitment level and leakage allowance on the leakage reduction identified in its WRMP as a reduction of 6.5 Ml/d to achieve an annual average leakage level of 36.5 Ml/d in 2024-25. However, in 2019-20 the company achieved a leakage level of 37.0 Ml/d and therefore only needs to deliver a further 0.5 Ml/d reduction to meet its 2024-25 WRMP level. We therefore propose that the company and CMA should consider if a performance commitment level that delivered WRMP target level and met the 15% reduction challenge from our PR19 methodology would now represent better value for customers and the environment over the long term.

A3.66 We challenge the validity of the following assumptions made by Bristol Water to determine its leakage costs.

- 2020-25 will include two harsh winters – we do not consider Bristol Water has clearly demonstrated the probability that this will occur based on its historical experience.
- Impact of winter conditions - reviewing the chart presented the assumptions appear to be risk averse with significant leakage increases forecast in both harsh and non-harsh winters. We would expect the

[160] Bristol Water, 'Water resources management plan', August 2019, p. 105.
[161] Bristol Water, 'Response to RFI018A', October 2020, p.7.

companies' improving capability to address leakage to result in shorter duration peaks with a reduced impact.[162]

- The productivity of leakage inspectors will identify an average of 3 leaks per FTE per week - the information provided by the company indicates that recent performance levels are often above 4 leaks per week. Bristol Water also recognises that early investment in technology has enabled productivity of its existing resources to be improved. The company previously reported that leakage inspectors were achieving an average rate of 7 leaks per week in November 2018. Therefore, an average of greater than 3 would appear appropriate.[163]
- Efficiency challenge for forecast leakage costs - the company states that leakage activities are likely to be more efficient than the average business efficiency levels due to its tendering of a new contract in 2019. However, it has chosen to apply a top-down challenge to its forecast leakage costs. The company also states that it has used a consultant to support its cost development and that it considers costs based on historical activities, but it does not provide detail of how costs have been challenged through this process.

[162] Bristol Water, 'BW02-6: Draft Determination Response – Deliverability, August 2019', p.28.
[163] Bristol Water, 'BW02-6: Draft Determination Response – Deliverability, August 2019', p.29; Bristol Water, 'Response to RFI018A', October 2020, p.9; and Bristol Water, 'PR19 Redetermination Reply', May 2020, p.123, paragraph 35.

A4 Metaldehyde

A4.1 The CMA's provisional findings allowed Anglian Water £63 million to manage the impact of metaldehyde in sources of drinking water, alongside a claw-back mechanism to remove the funding, if and when the ban is reintroduced.[164]

A4.2 On 18 September 2020, Defra announced a decision to re-introduce the ban on the use of metaldehyde.[165] The ban will be phased over an 18-month period and take full effect on 31 March 2022. The CMA acknowledged that it did not have time to reflect this decision in its provisional findings.[166]

A4.3 In light of the re-introduction of the ban, we consider that the allowance of £63 million for Anglian Water should be removed. Anglian Water will no longer have to incur the costs – it would be able to avoid any metaldehyde related costs during the phasing period, as any competitive company would. Other companies did not receive funding for Metaldehyde, so removing this allowance would put Anglian Water on the same footing as all other companies.

A4.4 Should the CMA consider that an additional cost allowance for the period up to March 2022 is appropriate, it should reflect the profiling of the expenditure over 2020-25, as forecasted by Anglian Water. Anglian Water's cost forecast was based on the original assumption of a ban being in place by April 2020. In this scenario it forecasted to incur the majority of the expenditure in years three and four of AMP7 – after the reinstated full ban will actually be in place.

A4.5 Table A4.1 provides the profile of metaldehyde related expenditure initially requested by the company split by opex and capex and type of activity.

[164] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 21.
[165] The ban is set out in the withdrawal Notice under paragraph 9 of Schedule 4 to the Plant Protection Products Regulations 2005 (SI 2005/1435) and Regulation 5 of the Control of Pesticides Regulations 1986 (SI 1986/1510) (as amended). The products that have had the approval withdrawn are published on the website of the Chemicals Regulation Division of the HSE.
[166] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 387, Footnote 1143.

Table A4.1: Anglian Water requested costs for the management of metaldehyde, £m's

Activity		2020-21	2021-22	2022-23	2023-24	2024-25	Total
Enhance water treatment processes	Capex	1.827	6.550	15.092	14.425	3.748	41.688
	Opex	0.013	0.072	0.071	0.101	0.293	0.549
	Totex	1.885	6.622	15.163	14.526	4.040	42.237
Product substitution**	Capex	0.105	0.000	0.000	0.000	0.000	0.105
	Opex	1.413	2.616	5.676	5.543	5.413	20.661
	Totex	1.518	2.616	5.676	5.543	5.413	20.767
Total		**3.404**	**9.238**	**20.839**	**20.069**	**9.454**	**63.003**

* The costs are inferred from Anglian Water's business plan tables of Sept 2018 and April 2019.

** Compensation costs to farmers for substituting metaldehyde with ferric phosphate – an alternative biocide.

A4.6 We consider that the company can avoid the costs associated with enhancing its water treatment as these costs relate to transfer schemes that are expected to become operational later in the 2020-2025 period, after the ban has phased in.

A4.7 If the CMA considers that is appropriate for the company to continue its product substitution plans until the ban is in place, it may be appropriate to provide funding for the first two years. The company accepts that these payments will not be necessary after the ban.[167] An allowance for this activity, consistent with the wider approach for a shallow dive, would be £3.72 million for AMP7.[168]

A4.8 However, companies have historically incurred product substitution costs for metaldehyde, and these costs would be included in our base allowance. Companies will no longer have to incur these costs in the future. We consider that the CMA could consider a downwards adjustment to the disputing companies costs to remove the implicit allowance for historical metaldehyde costs from our base allowance.

A4.9 Regarding customer protection, as we consider that the allowance of £63 million for Anglian Water should be removed, we do not consider that there is any need for a new performance commitment and ODI. However, in the event

[167] Anglian Water Data Tables Commentary. IAP Response April 2019, p. 142.

[168] The investment the company requested to undertake catchment management activities was initially within the company's WINEP Drinking Water Protected Areas programme. This investment area was subject to a shallow dive company specific efficiency challenge. The figure of £3.72 million is based on the first two years of investment, subject to a 10% efficiency challenge.

that the CMA makes a material metaldehyde enhancement cost allowance for Anglian Water in its final determination, we agree that there should be associated customer protections (for example in the form of a new performance commitment and ODI). This should provide for (a) clawback relating to the timing of the reintroduction of the ban, (b) non-delivery or late delivery of metaldehyde-related activities, and (c) given the uncertainty about the required activities, receiving assurance from the company that any cost allowance has been deployed in the most cost-effective manner. The ODI rates set at final determination should be calibrated to reflect the amount and time profiling of any cost allowance, and the relevant cost-sharing rate, allowed return on capital and run-off rate.

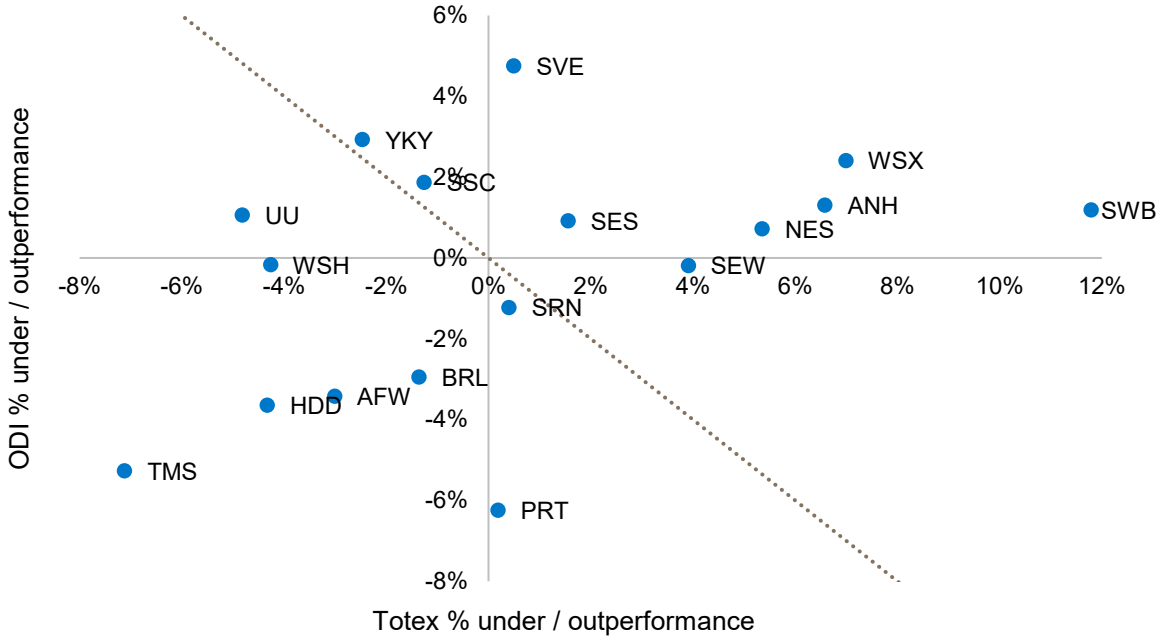
A5 Link between cost and service level

A5.1 We support the CMA's provisional decision that there is no clear evidence for a link between service performance and the costs incurred by water companies and therefore not to make an overall adjustment to totex or performance commitments based on the level of stretch. This appendix provides additional data points to support this position.

Cost-service disconnect: additional evidence

A5.2 We have updated the CMA's totex and ODI operational performance chart (Figure 7.3 in the CMA's provisional findings) so that it includes 2019-20 data. The updated chart further supports the CMA's provisional finding that there was no clear link in the evidence from AMP6 between the performance against PC and ODI targets, and the costs incurred by the water companies.

Figure A5.1: Operational performance across years 1 to 5 of AMP6, and associated financial rewards for shareholders (as % of RORE), by company

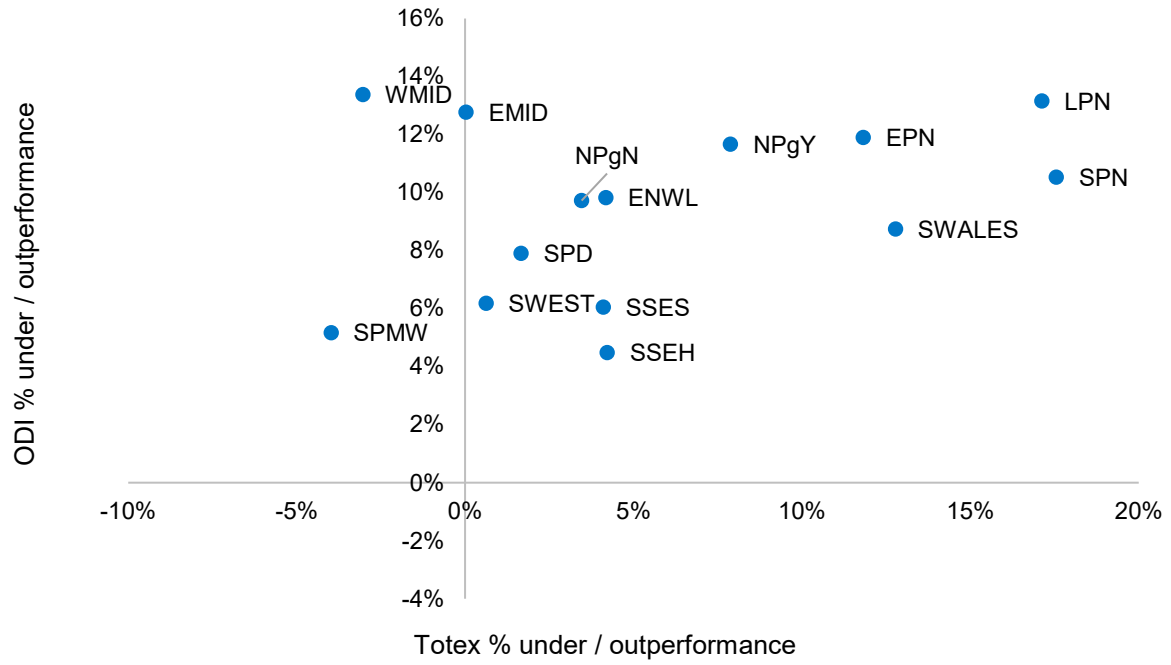


Source: Ofwat calculations based on annual performance report data.

A5.3 We have generated an equivalent chart for electricity distribution (2015-16 to 2018-19) and gas distribution (2013-14 to 2018-19) which give similar results, with companies performing well on both totex and ODIs with no clear link

between the achievement of ODI targets and the costs incurred by companies.[169] We also note Ofgem's recent RIIO2 draft determination (GD2, GT2, ET2) substantially reduces costs[170] and uses an 85th percentile efficiency score[171] and simultaneously requires improved service performance compared to RIIO1.

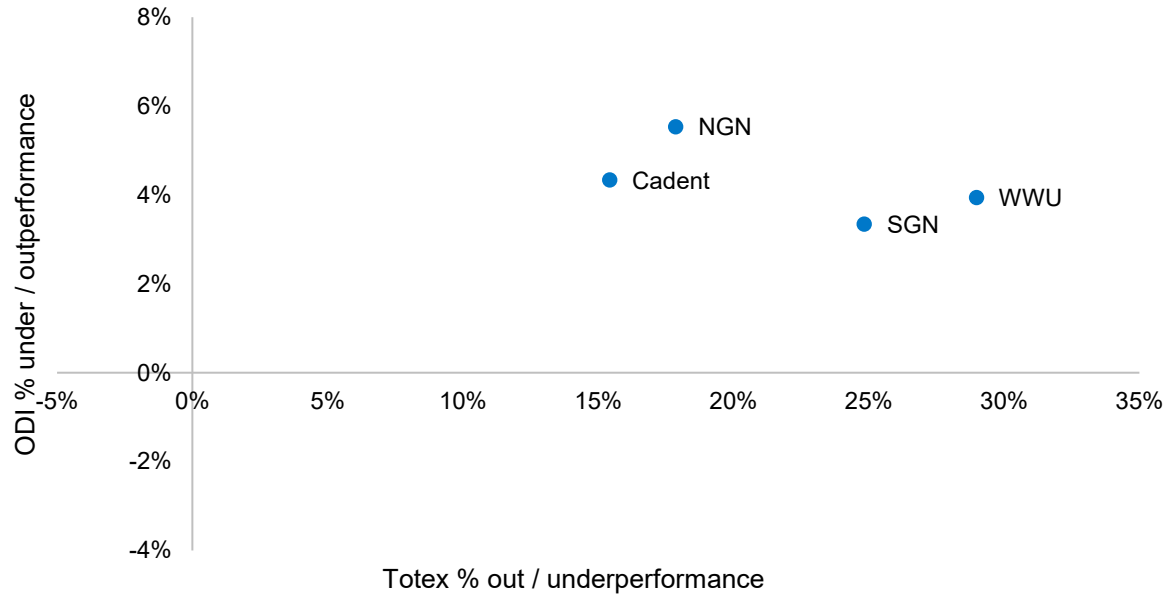
Figure A5.2: Electricity distribution outperformance on totex and incentives, 2015-16 - 2018-19



Source: Ofwat calculations on ED1 annual report supplementary data file, 2018/19

[169] Calculated using 2018/19 ED1 annual report supplementary data file.
[170] See RIIO2 draft determinations core document, Figure 3 and 4; and paragraph 5.6 in the same document.
[171] See RIIO2 Gas Distribution Sector, paragraph 3.14.

Figure A5.3: Gas distribution outperformance on totex and incentives, 2013-14 – 2018-19



Source: Ofwat calculations on GD1 annual report supplementary data file, 2018/19; 50% cost sharing assumed

Cost service relationship for individual performance commitments

A5.4 We note that the CMA proposes to make funding adjustments for leakage. We strongly support the CMA not extending this approach for other performance commitments. We set out additional evidence below in addition to that set out in the provisional findings

A5.5 Each common performance commitment level is clearly achievable within base funding, as some companies are already reaching these levels. For example:

- Five companies 'beat' the supply interruptions 2024-25 stretch during 2015-20
- Three companies beat the internal sewer flooding 2024-25 stretch during 2015-20
- One company beat the pollution incidents 2024-25 stretch during 2015-20

A5.6 As the CMA, supported by its engineering advisors, sets out, in many cases the costs of improvement can be relatively small, through operational

improvements and applying best practice. The companies also acknowledge this point. [172]

A5.7 Where performance improvements are required, some of the companies themselves have acknowledged that the base allowance includes sufficient funding to meet performance commitment levels. For example, Northumbrian Water has previously clearly stated that base costs funding would cover the activities necessary to meet the common sewer flooding performance commitment.[173] As the disputing companies have agreed, at least some of the base-funding in PR14 has been used for one-off costs that fund long-term improvements and so further improvements within base can be expected. Though the companies disagree with the CMA and ourselves on the extent to which one-off spending is a key driver of performance improvement, they do agree it has some role.[174]

A5.8 Companies are not expected to meet or exceed every performance commitment. In practice they will likely outperform in areas where they are already good performers. It does not follow that they should be given additional funding to help them also outperform in areas they are poorer performers in – this is equivalent to a one-way bet in the companies' favour, which is not an appropriate allocation of risk and incentives between companies and customers.

A5.9 For example, Anglian Water outperformed or met targets in the vast majority of its performance commitments. The main exception is water supply interruptions, which it argues was the result of a one-off exceptional event, stating 'Over the weekend of 13—15 December 2019, we faced an exceptionally challenging operational incident, with some customers off water for up to 53 hours. The incident was triggered by a faulty valve on a water main in Leighton Buzzard, and although we were able to fix the initial issue relatively quickly, air trapped in pipes as a result proved difficult and time-consuming to resolve.' [175] Overall, Anglian Water will still earn a net ODI reward from its performance in 2019-20.

[172] For example, Yorkshire Water's 2020 Annual Performance Report (p. 53) states that 'The reduction in supply interruptions has been driven by new ways of working which has meant that we are able to ensure that customers' supplies are restored much more quickly.'
[173] Northumbrian SoC, paragraph 620; also cited in the CMA's PD, paragraph 5.623.
[174] For example, Anglian Water's 17 August letter to Kip Meek attributes around one third of spend on supply interruptions to one-off expenditure that improves both short and long-term performance.
[175] Anglian Water's 2020 Annual Performance Report, p. 53.

A6 Bristol Water's Canal and River Trust cost adjustment claim

The CMA's provisional decision

A6.1 At final determination, Ofwat allowed £5.9 million to Bristol Water in relation to its cost adjustment claim for the purchase of raw water from the Canal and River Trust, out of the £8.6 million requested.

A6.2 The CMA provisionally decided to allow Bristol Water's cost adjustment claim in full, increasing Ofwat's allowance by £2.7 million. In making its provisional decision, the CMA considered that:

- the base cost models do not robustly capture Bristol Water's atypical cost for sourcing water from the Gloucester and Sharpness Canal, given the company's limited control over the charges it pays to the Canal and River Trust and its structural reliance on the agreement;[176] and
- it is not clear where in the supply chain Bristol Water would benefit from savings that can offset the Canal and River Trust payments, as Bristol Water would still need to abstract, store and transport the water.[177]

Our response

A6.3 We consider that an increase in the allowance for the purchase of water from the Canal and River Trust is not justified. Bristol Water is fully funded to deliver its water resources activities – **our final determination base allowance for Bristol Water's water resources price control is higher than requested**.[178] Furthermore:

- While Bristol Water's procurement model may be considered atypical in terms of the scale of its bulk water import, there is no evidence that its procurement costs are atypical.
- Bristol Water benefits from offsetting savings as it does not incur costs to maintain and operate the Gloucester and Sharpness canal. Other

[176] Competition and Markets Authority, 'Provisional findings report', September 2020, pp. 240-241, paragraphs 4.598-4.599.
[177] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 241, paragraph 4.600.
[178] In our final determination for Bristol Water, the company receives an allowance of £69.4 million for water resources base costs, compared to requested base costs of £69.3 million (see Ofwat, 'PR19 final determinations: Bristol Water final determination', December 2019, p. 36, Table 3.5).

companies would incur such costs over the water source asset they own, and these costs are covered in our base allowance.

- Other companies incur bulk supply charges that are equivalent to Bristol's Canal & River Trust payments. The costs of bulk supply are part of base costs and covered in our base allowance. We estimate that the implicit allowance for Bristol Water far exceeds any remaining funding gap between the £8.6 million it requested and the £5.9 million we allowed.

A6.4 We discuss each point in turn.

Bristol Water's costs are not atypical

A6.5 In making its provisional decision, the CMA considered that 'Bristol's costs are atypical'.[179]

A6.6 We do not consider this to be correct. There is no evidence that Bristol Water's costs to abstract water from the Gloucester and Sharpness Canal are atypical.

A6.7 Rather, **it is the procurement model that is atypical**, with Bristol Water purchasing and abstracting 46% of its raw water from a third party provider. While the scale and circumstances of the contractual arrangement may be unique, Bristol Water is by no means the only company that incurs bulk supply costs,[180] or indeed service costs from the Canal and Rivers Trust. It is the only company to request a full adjustment to base costs in respect of these costs.

A6.8 Further, there is no evidence to suggest that the charges Bristol Water pays to the Canal and River Trust are higher than the alternative efficient cost of owning, maintaining and operating internal sources. Rather, the evidence provided by Bristol Water showed that the apparent high cost of the canal sources is due to Bristol Water's poor cost allocation method, and under different allocation assumptions the Canal and River Trust payments could be considered more efficient than the company's cost for its in-house sources.[181]

[179] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 240, paragraph 4.599.
[180] Bristol Water defines its arrangement with the Canal and River Trust as a 'long-term bulk supply agreement'. Bristol Water, 'Statement of Case (Non-Confidential)', April 2020, p. 122, paragraph 500.
[181] Ofwat, 'Reference of the PR19 final determinations: Response to Bristol Water's statement of case', May 2020, pp. 56-57, paragraphs 3.128-3.130.

Bristol Water has significant offsetting storage savings

A6.9 In its provisional decision, the CMA stated that, as in 2015, it has not been able to identify where in the supply chain Bristol Water would be able to make compensatory savings, '[…] as Bristol would still need to abstract, store and transport the water it has otherwise abstracted from the G&S Canal, similar to other potential water sources which a notional company may rely on'.[182]

A6.10 **We do not consider this to be correct**. As explained in our response to Bristol Water's statement of case,[183] the Gloucester and Sharpness Canal is in effect acting as a pumped storage reservoir for Bristol Water. Therefore, while Bristol Water pays charges for the cost of sourcing the water from the Canal (abstraction, transport), **it avoids the cost of owning, operating, maintaining and making safe a storage reservoir**.

A6.11 Such costs are material. For example, during the price review two companies put forward additional cost adjustment claims for the cost of keeping their reservoirs safe (United Utilities requested £51.2 million and Dŵr Cymru requested £69.5 million).[184]

A6.12 Notably, other companies such as Wessex Water have a contractual arrangement with the Canal and River Trust to abstract water from the Canal into their own reservoirs. These companies will incur the cost of paying abstraction charges to the Canal and River Trust as well as the cost of owning, operating and maintaining a reservoir. Wessex Water did not request a separate cost adjustment, despite not benefitting from the same offsetting savings that Bristol Water benefits from.

Bristol Water receives a significant implicit allowance from the base models

A6.13 Bristol Water has identified an implicit allowance of £0.4 million for the Canal and River Trust payments in our base allowance.[185] As we said in our final determination, 'Other companies incur alternative costs associated with

[182] Competition and Markets Authority, 'Provisional findings report', September 2020, p. 241, paragraph 4.600.
[183] Ofwat, 'Reference of the PR19 final determinations: Response to Bristol Water's statement of case', May 2020, pp. 57-58, paragraph 3.133.
[184] Ofwat, 'PR19 final determinations: Securing cost efficiency technical appendix', December 2019, Annex 5, pp. 217-218.
[185] Bristol Water, 'Statement of Case (Non-Confidential)', April 2020, p. 124, paragraph 505.

owning water resource assets, which means that these costs are reflected in our models and in our base allowance'.[186] We consider that the £0.4 million identified by Bristol Water is a considerable underestimate of the implicit allowance.

A6.14 There is not a definite method to estimate an implicit allowance. However, any approach is likely to result in an implicit allowance that is at least as large as the £3.1 million gap between the Canal and River Trust payments and the cost that we allowed at final determination.

A6.15 We provide two possible approaches to estimating the implicit allowance that Bristol Water receives against its Canal and River Trust payments. One approach results in an implicit allowance of £2.8 million, although we explain why this amount is clearly an understatement. The other approach results in an implicit allowance of £7.7 million. Given the £3.1 million gap between our allowance and the Canal and River Trust payments, **after taking account of the implicit allowance we consider that no further adjustment is required**.

A6.16 As we said above, Bristol Water is not the only company that pays a third party for bulk supply of water. Severn Trent Water paid £7.6 million in 2018-19 for a bulk import of raw water from the Elan Valley Reservoirs that Dŵr Cymru owns and operates.[187] Other companies that reported bulk supply costs as part of their historical base costs, such as Yorkshire Water, Affinity Water and South East Water. **None of these companies requested an adjustment to our base allowance.** Bulk supply costs are included in our base models, and companies receive an implicit allowance against it within our base allowance, like Bristol Water does for its Canal and River Trust payments.

A6.17 Therefore, in the first approach we remove water resources bulk supply costs, including Canal and River Trust payments, from the historical costs and identify the impact on Bristol Water. This results in an implicit allowance of £2.8 million. **This clearly underestimates any implicit allowance**, as a more appropriate approach would have removed some costs related to owning a reservoir, which other companies incur but Bristol Water avoids.

[186] Ofwat, 'PR19 final determinations: Bristol Water final determination', December 2019, p. 37.

A6.18 Under the second approach, if Bristol Water was sourcing the entirety of its raw water from in-house sources, rather than procuring 46% of it from the Canal and River Trust, we would not make a separate adjustment to the company's allowance. Therefore, the cost Bristol Water would incur to source the additional 46% of its raw water from in-house sources should be netted off from the value of the claim, and the value of the claim should represent only the additional payments to the Canal and River Trust on top of the in-house cost.

A6.19 Our analysis of the evidence provided by Bristol Water on its 2017-18 water resources costs showed that the unit rate of the company's in-house sources is at least 90% of the unit cost of canal source. This suggests an implicit allowance of at least 90% of the cost requested by Bristol Water for the purchase of water from the Canal and River Trust (£7.7 million).

A6.20 The range of implicit allowances we estimated indicates that **our final determination allowance to Bristol Water for the Canal and River Trust payments was appropriate and favourable, and a further £2.7 million increase is not justified**. Bristol Water's final determination base cost allowance for water resources is already higher than the requested cost. Our allowance for the claim was made as an acknowledgement in our in the round assessment that the company challenged its own costs considerably throughout the price review process, despite the poor evidence on the cost claim. However, we are unlikely to make any allowance at PR24 without a substantially better evidenced claim.

A7 Cost sharing

A7.1 The CMA has provisionally proposed to set the same cost sharing rates for all disputing companies. The sharing rate for cost overruns is 55% (ie the company will bear 55% of the cost overrun) and for cost savings it is 45% (ie the company will keep 45% of any cost saving).

A7.2 This is a major intervention on the cost sharing rates that we have set at final determinations. Cost sharing rates are a key element of our approach to price reviews and play an important role in incentivising companies to challenge themselves to be more efficient and to reveal accurate information on the level of efficient costs. There are substantial benefits to customers from improving efficiency and revealing accurate information on the level of efficient costs.

A7.3 At PR19, a number of companies including the three fast track companies submitted business plans with considerable self-challenge on the level of efficient costs. These companies have benefited from favourable cost sharing rates. The disputing companies have failed to challenge themselves to be efficient or to provide accurate information on their true level of costs. This is confirmed by the CMA provisional findings, which confirms that company business plans are significantly above the level of efficient costs.

A7.4 By intervening and softening the cost sharing rates, the CMA undermine incentives for all companies to submit efficient business plans in future price reviews. This significantly weakens our ability to challenge companies to be efficient with significant consequence harm to customer interests.

A7.5 Table A7.1 shows the cost sharing rates at final determination and at the CMA's provisional findings.

Table A7.1: cost sharing rates for outperformance ("Out") and for underperformance ("Under") in Ofwat's final determinations compared with the CMA's provisional findings (%)

	Water				Wastewater			
	Ofwat final determinations		CMA provisional findings		Ofwat final determinations		CMA provisional findings	
	Out	Under	Out	Under	Out	Under	Out	Under
Anglian Water	31.9	68.1	45	55	35.0	65.0	45	55
Northumbrian Water	46.2	53.8	45	55	34.4	65.6	45	55
Yorkshire Water	38.1	61.9	45	55	33.2	66.8	45	55
Bristol Water	39.8	60.2	45	55	n/a	n/a	n/a	n/a

A7.6 In providing the rationale, the CMA notes 'We agree that there is merit in Ofwat's approach of providing incentives to provide accurate business plan information, which placed companies in various tracks during its assessment process. This improved Ofwat's operational flexibility and ability to prioritise the reviewing of company business plans during the price review period. However, this does not mean that the particular cost-sharing rates applied by Ofwat were necessarily the best way to achieve this.'[188]

A7.7 We are pleased that the CMA agrees with the merit of providing incentives to submit accurate business plans. Given information asymmetry, this incentive is important to retain. Rather than the principle that accuracy should be incentivised, what the CMA appears to disagree with is the specific cost sharing rates that we have set, based on our mechanism, for the disputing companies.

A7.8 Specifically, the CMA is concerned that the wide range of sharing rates for the disputing companies 'will reduce companies' incentives to outperform and will also expose companies to higher risks from underperformance' and further that 'There may be circumstances where these asymmetric cost-sharing rates create unintended incentives, including in relation to schemes that require investment over multiple periods.'[189]

A7.9 Given that the CMA recognises the importance of the incentive, we consider that it would be appropriate to set cost sharing rates for the disputing

[188] Competition and Markets Authority, 'Provisional findings report', p. 413, paragraph 6.113.
[189] Competition and Markets Authority, 'Provisional findings report,' p. 413, paragraph 6.115.

companies which preserve the incentive properties of our mechanism. Insofar as there may be any concern around the specific cost sharing rates, that could be addressed separately by narrowing the range of sharing rates to which the mechanism is applied. However, as we explain below, we do not think this is necessary.

A7.10 We also think the CMA needs to consider and give appropriate weight to the incentive impacts on the whole sector versus impacts of company specific incentive rates. A weakening of incentives to submit efficient plans for the sector has potential to do much greater damage than the incentive set for an individual disputing company.

A7.11 Table A7.2 provides the cost sharing rates that would apply to the disputing companies based on our mechanism but updated to reflect totex allowances in the CMA's provisional findings.

Table A7.2: cost sharing rates based on Ofwat's mechanism updated to reflect totex in the CMA's provisional findings (%)

	Water		Wastewater	
	Outperform	Underperform	Outperform	Underperform
Anglian Water	33.5	66.5	36.9	63.1
Northumbrian Water	49.0	51.0	30.3	69.7
Yorkshire Water	44.4	55.6	32.9	67.1
Bristol Water	41.1	58.9	n/a	n/a

Based on the CMA's assessment of costs (which mirrors our own assessment), Anglian Water submitted high cost forecasts in wholesale water, relative to Northumbrian Water, which submitted an efficient plan. We do not think that Anglian Water, which submitted high cost forecasts based on our view and the CMA's provisional view, should receive the same cost sharing rates as Northumbrian Water – or, indeed, other non-disputing companies that did a better job at challenging themselves in the cost forecasts they submitted to us. This challenging of themselves the kind of behaviour we expect from monopolies that deliver a vital service, and precisely the behaviour that we incentivised through this mechanism.

A7.12 It is important to recognise that **if the CMA retains its provisional decision, this could impact on the incentives for submission of efficient business plans in the future**. This incentive is central to customers' interest. Any decision that the CMA makes needs to balance potential deficiencies with the

damage it does at the sector level to incentive companies to self-challenge and submit efficient business plans in the future.

A7.13 Below we provide our views on concerns raised by the CMA in relation to the cost sharing rates of the disputing companies.

A7.14 **Strength of the in-period incentive**: the CMA claims that 'The widened range of sharing rates applied in PR19 will reduce companies' incentives to outperform.'[190]

A7.15 We note that the values of cost sharing rates that we set for the disputing companies are consistent with values we have used in the past as well as those used in other sectors. For example:

- in PR09 we set capex incentive scheme (CIS) sharing rates in the range from 15% to 45%, with practically all companies receiving a cost sharing of 35% or lower at final determinations and most of them outperforming;[191]
- in RIIO-GD1 Ofgem pre-defined a range of cost sharing rates from 61% to 67%. In practice companies received cost sharing rates of 63% or 64% (ie companies bear/gain 63-64% of cost overrun/saving);[192]
- on the other hand in RIIO-2 Ofgem introduced a different mechanism for determining cost sharing rates, where the rates can vary between 15-50%. At draft determination companies received cost sharing rates in the range 30-50%.[193]

A7.16 We note that the incentive rates provide companies with stronger incentive to avoid cost underperformance relative to CMA provisional finding rates. This seems particularly relevant to companies with high cost plans, who have claimed they will unable to meet cost allowances set in final determinations. The CMA do not appear to have considered the offsetting benefit of stronger incentives to avoid underperformance against the weaker incentives for outperformance. Alternatively, the CMA could limits its intervention to outperformance rates.

[190] Competition and Markets Authority, 'Provisional findings report', p. 413, paragraph 6.115.
[191] Ofwat, 'Future water and sewerage charges 2010-15: final determinations', p. 149, figure 16 and p. 68, Table 27.
[192] RIIO-GD1: Final Proposals – supporting document – cost efficiency. Tables 10.1 and 10.3, p. 62-63.
[193] RIIO-2 Draft Determinations – Core Document, Table 14, pp. 118-119.

A7.17 We have not seen evidence that the level of cost sharing rate has any material, impact on in-period performance. Given the importance of the cost sharing incentive, it is important that any consideration, in particular one that could diminish the incentive to submit efficient plans, is backed up by evidence. In the absence of any evidence to support its concern, we invite the CMA to reconsider its decision to change the cost sharing rates.

A7.18 **Perverse incentive for multi-period investments**: the CMA is concerned that under our final determination cost sharing rates 'companies may be discouraged from adopting lower whole-life cost options if those options involve incurring higher costs in AMP7 offset by savings in future periods. Under the final determination sharing rates, the Disputing Companies would have to bear around two thirds of any Totex overspend as a result of additional AMP7 costs that may be associated with adopting lower whole-life cost options. However, they would be unlikely to expect to be able to retain more than around 50% of any associated expected savings in future AMPs.'[194]

A7.19 In light of that the CMA recommends that 'an effective cost-sharing mechanism should … Be sufficiently close to a symmetric cost-sharing rate to avoid creating a significant risk of perverse incentives, particularly over multiple periods.'[195]

A7.20 First, we have funded companies for lower whole life options at PR19 even when the cost option did not offer the lowest costs in AMP7. Companies can get full funding for efficient whole life options as long as they submit sufficient and convincing evidence.

A7.21 Second, we note that over price controls our mechanism is symmetric. If a company proposes a large investment that makes it appear inefficient – although this need not be the case if the company provides a well evidenced proposal – it may have to fund, say, 60% of the overspend. In future periods it would appear efficient and, under our mechanism, would be able to keep 60% of the underspend.[196]

A7.22 In substance, the CMA's real concern seems to be that our cost sharing arrangement is bound by 50% - in other words, that efficient companies

[194] Competition and Markets Authority, 'Provisional findings report', p. 411, paragraph 6.107.
[195] Competition and Markets Authority, 'Provisional findings report', p. 413, paragraph 6.116.
[196] In fact, a symmetric cost sharing rate that is determined through a mechanism such as the menu, as at PR14, would be asymmetric across price control periods, and the CMA's concern may be more relevant there.

cannot recover more than 50% of the benefits. This is not correct: our cost sharing mechanism allows efficient companies to recover more than 50% of the benefits. Although in fact, at PR19 no company received better cost sharing rates than 50:50, this was not by design but was merely a product of the information and business plans submitted. In principle, there is no reason why better rates should not be possible to obtain and we will re-assess the calibration of the cost sharing mid-point for PR24.

A7.23 Finally, we provide a comment on the CMA statement that 'an effective cost-sharing mechanism should … Maintain a distinction between the rates applied to fast and slow track companies, as part of the package of information revelation incentives.'[197]

A7.24 We do not use cost sharing incentive is to distinguish between fast and slow track companies. The distinction between fast and slow track companies is based on the overall quality of their business plans and this is recognised in small financial reward. That overall quality assessment encompasses cost efficiency, outcomes, customer engagement, approach to risk and return, and more. While, in practice, at PR19 fast track companies received better cost sharing rates than slow track companies, this simply reflects the efficiency of their business: cost sharing rates reflect cost efficiency alone. The fast track process does provide incentives to submit high quality plans, but by nature is general instrument and it is not clear that all companies respond to this incentive. It is vital that all companies have strong incentives to challenge themselves to be efficient and to submit efficient plans.

A7.25 In summary,

- It is crucial that the CMA retains the incentive to submit accurate and efficient cost sharing rates when setting cost sharing rates for the disputing companies. The CMA decision are likely to have a significant impact on incentives for all companies and our ability to regulate effectively in future price controls.
- We consider the cost sharing rates we have determined at final determinations are reasonable and there is no evidence that they would materially weaken the incentive to outperform. On the contrary, they in fact provide a strong incentive to avoid cost overspend. They are also aligned to rates used by other regulators.
- We note the CMA concern with multi-period investments, which we will consider for future price controls. However, we consider that our cost

[197] Competition and Markets Authority, 'Provisional findings report', p. 413, paragraph 6.116.

sharing mechanism offers symmetry over price controls, and that companies can get full funding for whole-life cost investments provided the proposals are well evidenced.

- We consider that the significantly changing our cost sharing rates is likely to result in greater long term harm for customers than the potential harm that may result from the concerns raised by the CMA. For the reasons above we recommend that the CMA retains the cost sharing rates as in our final determinations.

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales.

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