1 EXECUTIVE SUMMARY

(1) This is Northumbrian Water's (**NWL**) submission following our hearing on 3 December 2020 (**NWL PFs Hearing**). We set out some points of clarification on the issues raised during the NWL PFs Hearing. To the extent required, we also respond to points raised during the other main party hearings for Ofwat and the other Disputing Companies. We have not sought to reiterate arguments made in previous submissions but have cross-referred to those as appropriate. This submission should be read alongside our letter to the CMA of 9 December 2020 and the accompanying papers on cost of equity and cost of debt.

(2) The points made in this submission are summarised in Table 1.

Table 1: Summary of post-PFs hearing clarifications

Issue	Clarification
Costs and outcomes	
AMP6 outturn information / use of 2019/20 cost data	We reiterate, by reference to underlying analysis of the 2019/20 data, the flaws in Ofwat's challenge to the use of this data: cost increases cannot be explained exclusively by reference to bringing forward AMP7 expenditure; use of the data does not change our relative efficiency rankings; and inclusion of the data would still result in base totex that is £513m lower than companies' original PR19 business plans. See Section 2.1 for further details.
Frontier shift	We provide updated evidence from the OBR suggesting a negative impact of 2% on 2025 GDP from Covid-19, which supports our concerns regarding the achievable frontier challenge during AMP7 and that the productivity assumptions should be reduced for 2020-21. See Section 2.2 for further details.
Real Price Effects (RPEs)	We comment on the updated ONS ASHE data which endorses the position set out in our response to the PFs that the index used by Ofwat in FD19 is not appropriate. We reiterate why we consider the AWE Utilities Index remains superior for this exercise. Finally, we provide evidence on our own recruitment experience and wage costs in 2020 which support an RPE for labor costs. See Section 2.3 for further details.
Growth	Whilst we reiterate that an ex-post modelling adjustment for growth is neither required nor appropriate, we provide further evidence to support the proposition that if it is applied sewer flooding costs should be excluded from the unit rate and no opex adjustment is required. On the DSRA we note the need for consistency in the treatment of sewer flooding, set out our preferred approach to STW costs and explain why historical, rather than forecast, data should be used for the adjustment consistent with the cost models. See Section 2.4 for further details.
Leakage	We provide the context for our historical performance (and its significance for assessing future performance) and our BP19 cost proposals, explaining why it is appropriate for us to seek this additional funding now and consistent for the CMA to grant it. We also address challenges posed by Ofwat to the efficiency of our proposed leakage costs. See Section 2.5 for further details.
Cost Sharing Rates	We outline our concerns with Ofwat's assertions that the removal of its poor cost sharing rates reduces the incentives on companies to set out efficient business plans. We clarify for the CMA that the cost gap at FD19 was materially driven by enhancement investments and note that for future reviews a return to two-sided adjustments would be appropriate. See Section 2.6 for further details.
Enhancement investment and resilience	
Sewer flooding resilience scheme	We restate our request for the CMA to fund this scheme, addressing the specific areas of concern raised by the Panel in the hearing. We also provide updated proposals for our PCs and ODIs in AMP 7 and AMP 8 to ensure that customers are adequately protected. See Section 3 for further details.

Risk and return and financeability	
Aiming up and setting the allowed return	We set out our support for aiming-up in setting the allowed return in-principle and the consumer detriment that can arise from underinvestment in water, but note that in practice the CMA has not aimed up. Ofwat misrepresents the CMA's PF WACC as 'high' or 'above market', fails to recognise the characteristics of the sector and overstates the strength of alternative incentives to drive investment. Much of Ofwat's evidence we find to be anecdotal and partial. See Section (116) for further details.
MARS and listed company interims	We update our May 2020 analysis of MARs to reflect the period May – November 2020 and show that this implies a MAR range for SVT and UU of 0.93 – 1.03 which is slightly lower than the May 2020 range (of 0.93 – 1.08) showing no premia to the Ofwat FD19 WACC. We show that listed company interims were worse than the same year in AMP 6, which is not consistent with Ofwat's suggestions that the listed company results support the FD19 package, especially once the AMP 6 outturn position is reflected. See Section 4.2 for further details.
Cost of Equity	We previously provided the CMA with a follow up paper from Professor Alan Gregory which expands on the points raised in the hearing about various aspects of the cost of capital, including the role of the Capital Asset Pricing Model (CAPM) approach. This paper confirms that the CMA and its predecessor have examined the use of alternatives to CAPM in the past only to conclude in those instances that there was not a strong case to do so. See the separate paper 'Follow up observations on the cost of equity' by Professor Gregory.
Cost of Debt	Ofwat's responses to the CMA's questions in relation to the cost of debt suggest a confused policy framework. Effectively Ofwat's policy removes the positive incentive properties of the notional index by applying a 'binding' cross-check based on its novel approach based on the cost of debt reported in the APR. If the CMA still believes that the notional index is the best approach, then any cross check should only be applied in a way that (1) fundamentally retains the incentive properties of the notional index; and (2) reflects the notional financial structure established across multiple reviews. Ofwat's responses suggest a desire to cherry-pick aspects of the notional company for change: the notional company framework should be retained including the composition of embedded debt assumed which closely resembles our structure. We have provided additional clarifications on several of Ofwat's answers on these issues in Appendix 5. See Section 4.3 and Appendix 5 for further details, as well as the separate paper NWL Post PFs Hearings Submission: Cost of Debt, December 2020.
Asymmetry and outperformance	We comment on Ofwat's analysis of the asymmetry in the package and how it does not account for the stretch in Performance Commitments. We also confirm the CMA's understanding that the toughness of the challenge inherent in Ofwat's FD19 does drive asymmetry in the overall package, including when seen in the context of historical performance. We clarify that the AMP 6 position across the sector involved most companies failing to earn their base return, overspending and net penalties on ODIs. The FD19 package is materially tougher in this respect and Ofwat's PR19 'reset' is clearly overstated against past performance. See Section 4.4 for further details.
Gearing Outperformance Sharing Mechanism (GOSM)	We reiterate that the GOSM is not required and that to the extent Ofwat has legitimate concerns about individual companies, these could and should be addressed using the other regulatory tools available. See Section 4.5 for further details.
Customer engagement and the CCGs	We note the critical comments made by Ofwat with respect to potential 'capture' of the CCGs and reiterate the independence of these groups and their important role in the price control process. See Section 5 for further details

2 COSTS AND OUTCOMES

(3) As explained in our hearing and previous submissions, we are asking the CMA to consider the range of options it has available which, if it agrees they represent appropriate interventions/amendments to FD19, would contribute to closing the £83m gap between the PFs allowance and our anticipated efficient costs during AMP7.

(4) Each of these options are valid in their own right, but we recognise that the CMA needs to make a judgement in the round about the appropriate level of totex allowance. If all of the adjustments we have presented were to be made we accept that it would result in a higher totex than our BP19. To reiterate, however, we are not seeking more totex than set out in our BP19 – instead the points on costs raised to date, and elaborated on in the following sections, simply represent a range of arguments for the CMA to consider in the round.

2.1 2019/20 DATA

2.1.1 Drivers of 2019/20 data versus previous years

(5) We have set out a range of arguments for the inclusion of the 2019-20 cost data in the CMA's final base cost modelling in our response to the PFs and do not repeat those arguments here.

(6) It seems uncontroversial that the 2019-20 wastewater costs are neither atypical nor distortive compared to previous years: this is not in dispute amongst any of the parties. The 2019-20 data similarly does not suffer from any issues of consistency as a result of the Severn Trent and Dee Valley merger. The wastewater data should be included regardless with a corresponding adjustment made to the frontier shift efficiency assumptions to account for the actual costs used.

(7) We have also analyzed the scale and source of the 2018-19 to 2019-20 water base totex increase by service, by cost type and company. We provide a few comments here by way of overview, with more detailed analysis presented in Appendix 1.

(8) Contrary to Ofwat's assumption that 2019/20 costs can be explained by reference to companies "*bringing forward costs*" from AMP7, our analysis shows that the water base cost increases are explained by a variety of reasons.[1] For example, Thames Water appears to have spent more to simply meet its 2019/20 leakage ODI, whilst Affinity Water spent more due to a large diversion cost related to HS2. Furthermore, the largest increase in costs is for above ground assets, which does not suggest that companies were investing in leakage (which are below ground).

(9) The only assured public domain APR data that quantifies totex brought forward from AMP7 showed that actual water expenditure in 2019/20 advanced from AMP7 was £24m.[2] This is the value that companies confirmed they had spent on transitional totex in 2019-20.

(10) This £24m is only 0.6% of 2019-20 water base totex, suggesting that, at most, the impact of bringing forward totex from AMP7 was marginal. It should be noted that £15m of the £26m related to a United Utilities resilience scheme which is unlikely to form part of base totex in any event.

(11) We consider this assured data that was reported by companies to be a more reliable source of evidence than the ambiguous assumptions made by Ofwat utilising unquantified company statements to support its assertion that 2019/20 represents "*something unusual*".[3]

1 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 29 line 19 – p.30 line 2.
2 2020 APRs Table 4B line 6, transition expenditure (see Databooks: Transition water 19-20 file).
3 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 29 line 26.

2.1.2 2019/20 relative efficiency and allowances versus company business plans

(12) In its hearing Ofwat said "*what we found is that even when you consider the 2019/20 data, the business plans for the disputing companies looks relatively as inefficient, relative to all other companies*".[4] This is incorrect. We are ranked 5th and 3rd (both at upper quartile) on water and waste when 2019/20 data is included, the same rankings as for FD19 (see Appendix 2). This does not, therefore, provide any justification for excluding the 2019/20 data.

(13) Ofwat also asserts that "*you come back to the point that if you just follow this into companies' wholesale cost allowances that you would be allowing them £1.5 billion more than they sought in their business plans*" and suggests that this should be a "*sense-check*" for the CMA telling it that "*something is wrong here*".[5]

(14) The premise on which this warning is based is not correct as we explained in our own hearing.[6] As we show below in Table 2, the revised model WW4 (as submitted to the CMA by Ofwat in response to RFI019) which estimates base totex including 2019/20 data gives a water base totex that is £513m lower than the original 2018 Business Plan submissions of the companies. The difference between these two positions is explained by the companies removing a substantial amount of costs from their plans during the course of the PR19 process in response to Ofwat's poor cost sharing rates which, as we have previously explained, incentivised companies to under-report expected costs.

Table 2: Sector Water Base Plus costs (includes growth)

PR19 Stage	All company Business Plans £m	Ofwat £m	Gap (BP-Ofwat) £m
IABP Table 6	20,910	19,041	1,868
DD19 Table A1.2	19,794	19,036	758
FD19 Table A1.2	19,129	19,366	-237
Base costs using 2019/20 data	20,910	20,397	513

Source: Ofwat Cost efficiency publications and RFI019 Model WW4

2.2 FRONTIER SHIFT

(15) There are two points on frontier shift raised in our hearing that we wanted to follow up on:

- the OBR's forecasts of productivity growth and the impact of "*scarring*"[7] which we mentioned in our hearing; and
- whether the 2020/21 impacts on our productivity can be caught up in the remainder of AMP 7.[8]

(16) The OBR's November Economic and Fiscal Outlook[9] estimates a negative impact of 2% on 2025 GDP resulting from scarring from the Covid-19 pandemic. The OBR says that:

> *"Lower productivity accounts for 2 percentage points of the pandemic-related hit. In the short term, this is related to the immediate need for businesses to organise production in less efficient ways so as to meet social distancing requirements. This eventually eases but is replaced by the cumulative effects of depressed investment and capital scrapping on the capital stock, overlaid by the effect of higher business debt and an increase in business failures on innovation and total factor productivity."*[10]

4 *Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 33 lines 19-21.*
5 *Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 31 line 25 – p.32 line 2.*
6 *NWL Post PFs Hearing 3.12.20 Transcript p. 17 lines 6-15.*
7 *NWL Post PFs Hearing 3.12.20 Transcript p. 23 lines 6-12.*
8 *NWL Post PFs Hearing 3.12.20 Transcript p. 23 line 2 – p.24 line 13.*
9 *OBR (November 2020), Economic and fiscal outlook, http://cdn.obr.uk/CCS1020397650-001_OBR-November2020-EFO-v2-Web-accessible.pdf*
10 *Ibid, para 2.40 first bullet, p.45.*

(17) We would expect these scarring impacts to also affect our business, in particular through our use of the supply chain where our suppliers will not have been insulated from the medium-term impacts of the pandemic.

(18) It can also be seen that the OBR itself does not expect there to be a catch-up in economy-wide productivity by the end of AMP7 as it is still projecting a 2% impact for 2025 compared to March projections made prior to the pandemic. It sets out the channels that this scarring is expected to take place as follows:

- "***deferred or cancelled investment in physical capital and lower innovation*** *as a result of the heightened uncertainty and increased levels of debt incurred during the pandemic;*
- *the destruction of valuable firm-specific capital and knowledge arising from business failures;*
- *a* ***loss of human capital*** *due to sustained unemployment as the economy restructures away from contact-intensive sectors;*
- *earlier retirement from the labour force prompted by the pandemic; and*
- *increased* ***loss of days worked*** *due to sick leave as it becomes unacceptable to turn up to work showing virus-like symptoms*."[11]

(19) We see no reason why these medium-term factors affecting the economy would not also affect our company and our supply chain. In that regard we note that EY's latest Regional Economic Report[12] identifies the North East as one of four regional economies expected to be below its 2019 size by 2023 (-0.29% GVA) and that has been hit hardest and will take longest to recover from the Covid-19 pandemic.[13] Brexit, particularly if there is no deal, will also significantly hit the North East region, including our supply chain, hard as the region is a major exporter to EU. This must also be seen in the context of the North East already having the highest regional unemployment rate.[14]

(20) This means that productivity levels at the end of AMP7 for the delivery of water and wastewater services are likely to be lower than if the pandemic had not hit. Indeed, this has been demonstrated to some degree during 2020 to date by reference to our capital programme, with Covid-19 having increased our associated costs by 0.8%.[15] As stated in the hearing, therefore, that means that whilst we will make every effort to catch-up during the period it ultimately might not be possible and it would not be sensible to assume that productivity levels can catch-up over the period.

2.3 REAL PRICE EFFECTS

(21) Expanding on the points of discussion on the use of the ASHE Manufacturing labour index versus the AWE Utilities index[16] we note the following:

- the ONS has now confirmed that the ASHE index also includes the impact of furlough: "*Estimates for 2020 include employees who have been furloughed under the Coronavirus Job Retention Scheme (CJRS).*"[17] This means that both indices are depressed by

11 Ibid, para 2.33 p.43.
12 See: https://assets.ey.com/content/dam/ey-sites/ey-com/en_uk/topics/growth/economics-for-business/ey-regional-economic-forecast-dec-2020.pdf pp.20
13 https://www.ey.com/en_uk/news/2020/12/englands-towns-face-being-left-behind-in-recovery-unless-pandemic-economic-lessons-learned-finds-ey-latest-report
14 Office for National Statistics Labour Force Survey: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/regionallabourmarket/march2020#unemployment
15 See NWL Response to Q.2 RFI027 and associated annexes.
16 NWL Post PFs Hearing 3.12.20 Transcript pp. 25-27.
17 ONS (November 2020), "PROV – SIC07 Work Region Industry (2) SIC2007 Table 5.5a Hourly pay – Gross 2020" excel workbook, "Notes" sheet, cell A29 https://cy.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/regionbyindustry2digitsicashetable5

furloughed workers. However, the impact is likely to have been greater in the manufacturing sector[18] whose output declined much more significantly than the utilities sector as we set out in our response to the PFs. We also consider that the ASHE manufacturing index is still likely to have been more affected by furlough (utilities have generally not used furlough) even if the ASHE index is reported based on the number of hours furloughed staff would have worked the furloughed wage will still have reduced from the actual wage by c.20% this will still be reflected in the index;

- the ONS has now published provisional ASHE data for 2020[19] and this reveals a much greater impact on the manufacturing index than is seen in the water sector, as we argued in our response to the PFs.[20] The ASHE data for 2020 shows a 0.4% fall in average wages for the manufacturing sector compared to a 1.6% increase for the water supply, sewerage, waste management and remediation activities sector (1.7% rise for all sectors). This further reinforces our arguments that the ASHE manufacturing index is likely to understate wage growth in the water sector for 2020 as it was more affected by the pandemic and the impact of lockdown;
- we do not think that Ofwat's points around ASHE's superiority based on hourly wages are material.[21] The AWE index for the utilities sector will be more affected by reductions in working hours than an equivalent hourly wage index but such an equivalent hourly index does not exist. The ASHE data is based on a single annual survey in April at the height of the first lockdown whereas the AWE data is collected on a monthly basis and is less affected by the circumstances of a single month. In addition, from the evidence submitted we have shown that the manufacturing sector was much more heavily affected than the water/utilities sector (where the difference between hourly and AWE will have been smaller than other sectors). In any event, the impact of using AWE will be to slightly depress the index where work volumes have fallen (as we would have expected in 2020) but this will better match the overall expenditure of companies that deferred non-essential working into later periods; and
- we think the circularity arguments in this case are weak and do not outweigh the more significant issues with using data from a different sector that is dependent on data from a single month where that sector was affected in a significantly different way from the water sector. A high-level analysis shows that the water sector is around 47% of the utilities sector based on value added and of the water sector we make up 6% of the industry's totex. This indicates a very small link between our own wages and the wages measures by a utilities index. For example, a 1% increase in our wages would result in a 0.03% increase in the wage index for the utilities sector. We do not think this undermines any incentives to act efficiently.

(22) In the discussion around labour RPEs and the choice of index, the panel asked about our own recruitment experience in the context of Covid-19 and Brexit and how it had been affected, particularly with respect to the recruitment of engineers and possible reductions in demand from other manufacturing sectors.[22] We set out below a summary of our recruitment over this period which should be seen in the context of our broader efficiency programme which will inevitably result in a reduction of headcount across the business across AMP 7:

- since Lockdown 1.0 and throughout the pandemic, we have seen new talent joining us from different sectors, but the challenge has been in some smaller labour markets to engage and attract individuals to the point that they are willing to leave their current secure roles. Between 1 April 2020 and 30 November, we recruited 128 members of staff on annual salaries. This compares to 88 members of staff in the same period in the

18 NWL Response to PFs, Figure 3: Impact of Covid-19 on manufacturing output and the water sector
19 See FN 17.
20 NWL Response to PFs, Section 3.5.3.
21 See, for example, Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 40 lines 24-26.
22 NWL Post PFs Hearing 3.12.20 Transcript p. 24 lines 15-22.

year prior. We have therefore not seen a fall in our general recruitment activity as a result of Covid-19;

- around 10% of these recruits this year have been in our asset management directorate, c.40% in a water and wastewater operations teams and the remaining half in other functions including commercial, customer services and information services; and
- these individuals were recruited across 13 different salary bands. For the 10 bands where recruitment took place in both 2019/20 and 2020/21,[23] we have had to pay higher average salaries in 8 of these bands and lower average salaries in the other 2 compared to the previous financial year. Weighting each of these 10 bands equally we have seen an average salary increase of 10%. This is admittedly based on a relatively small number of individuals in each salary band, but this data is consistent with wages in the water sector increasing more than CPIH and not being subject to the falls seen in the manufacturing sector.

2.4 GROWTH

(23) In our hearing the panel raised several questions in relation to the allowances for growth costs, some of which we agreed to take away and respond to in this note below.[24] We have set out our position on growth costs, including the ex-post modelling adjustment and the Developer Services Reconciliation Adjustment (DSRA) which the CMA proposed to amend in the PFs[25] elsewhere[26] and do not repeat the detail of those arguments here. However, for the avoidance of any doubt, whilst we can see merit in the expansion of the DSRA to cover growth at sewage treatment works and capacity increases, we do not see any merit in the application of the ex-post modelling adjustment. In the case of the latter we have provided clear evidence that this adjustment is not required and double counts:

- the adjustments already made in the base cost models, which contain drivers which the CMA has elsewhere recognised are already highly correlated with growth;[27] and
- forecasts for new connections, which differ by company region therefore reflecting differences in growth.[28]

(24) The ex-post base modelling adjustment should be removed entirely and the DSRA expanded to cover growth at sewage treatment works. Both adjustments should be set on a consistent basis excluding sewer flooding investment which, as we have explained, is not driven primarily by growth.

(25) In this submission we also comment on Ofwat's response to RFI026 in which it has provided the CMA with forward looking unit cost estimates by company for both the ex-post modelling adjustment and the updated DSRA.

2.4.1 The unit rate for the ex-post modelling adjustment

(26) The CMA raised two queries in relation to the 'unit rate' used in the ex-post modelling adjustment which we address here:

- whether the unit rate should exclude sewer flooding costs;[29] and
- whether the unit rate should be set using the average rather than the upper quartile due to the exclusion of opex costs.[30]

23 Excluding a senior pay band with only 1 individual recruited in 2019/20 which skews the results.
24 NWL Post PFs Hearing 3.12.20 Transcript p. 27 line 12 – p.30 line 20.
25 CMA PFs, para. 4.525.
26 NWL Response to PFs, Section 3.6.
27 NWL Response to PFs Section 3.6.1
28 NWL Response to PFs para 119-123
29 NWL Post PFs Hearing 3.12.20 Transcript p. 27 lines 22-24.
30 NWL Post PFs Hearing 3.12.20 Transcript p. 27 lines 12-17.

2.4.1.1 Sewer flooding costs should be excluded from the unit rate

(27) Whilst the addition of new property connections onto the network will almost always drive an increase in the capacity required at the treatment works (for both water and wastewater) as these new connections will require additional potable water supply or sewage collection and treatment, it is not the case that new connections will directly drive sewer flooding costs.

(28) In the case of the latter, as we explained in the hearing, whilst for some old densely populated locations the surface and foul sewer systems are integrated historically, new developments will be required by building regulation and planning requirements to separate the surface and foul sewers to achieve planning consent. These requirements are set out in Chapter H5 of the 2015 Government Building Regulations, which states that "*Any system for discharging water to a sewer shall be separate from that provided for the conveyance of foul water from the building*".[31]

(29) Further, the Code for sewer adoption agreements issued by Ofwat under section 51CA of the Water Industry Act 1991 which came into effect in November 2017 states:

B2 SEPARATE SYSTEMS

1. Separate foul and surface water systems should be provided.

2. If sewers are to discharge into an existing combined (single pipe) sewer system, the separate foul and surface water sewers should be combined at locations immediately upstream of the point where they discharge into the existing combined sewer system. The levels should be arranged to minimise the risk of foul sewage entering into the surface water system.

3. Natural watercourses, land drainage and groundwater are not permitted to be directly or indirectly connected to the public foul sewer system[32]

(30) All the new developments in our area over the last year were built with separate surface and foul sewer systems. This demonstrates clearly that growth does not directly drive sewer flooding costs as the risks of flooding from surface water in those new developments is addressed by other means.

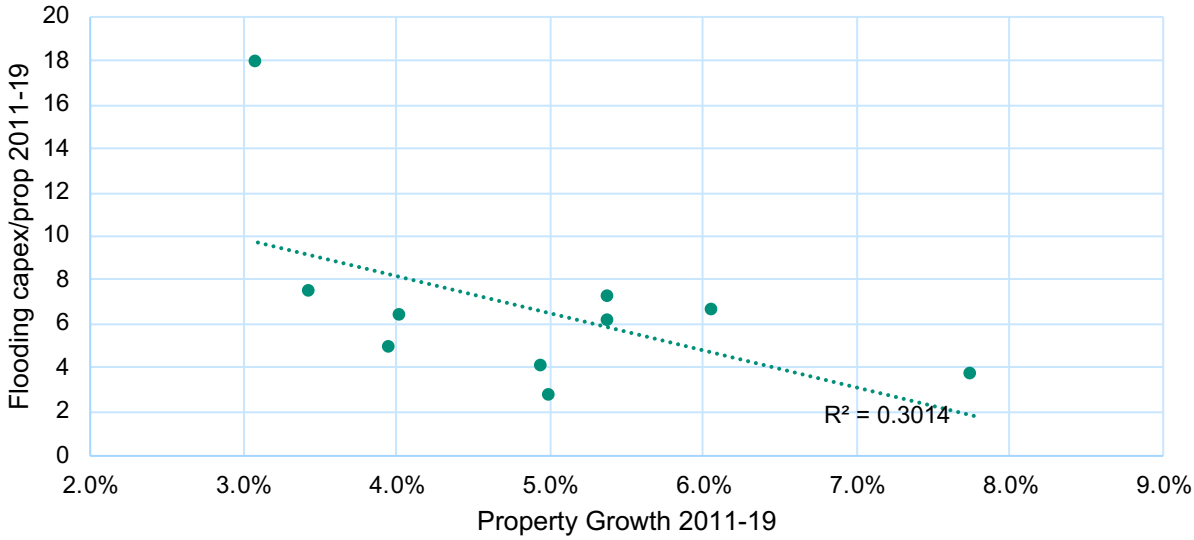
(31) The key drivers for sewer flooding events (and costs) as we envisage them are:

- customer behavior, for example flushing more wet wipes into sewers driving blockages;
- hydrological capacity of the sewers and that capacity being weakened by rainfall and extreme weather and greater run-off because of urban creep; and
- asset failure for example through ingress, sewer collapses or other network events.

(32) We have reviewed the rate of new property growth against sewer flooding capex. There is no strong correlation and in fact the analysis implies that companies with lower growth have higher sewer flooding costs- which is counter-intuitive to the inclusion of these costs in an adjustment for growth costs. Indeed, the company with the highest property growth (SWW) has one of the lowest capex per property for sewer flooding and was categorised as green in the relative performance assessments in the last two Ofwat Service Delivery Reports.[33] We had the highest capex per property but the lowest property growth.

31 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/442889/BR_PDF_AD_H_2015.pdf
32 https://www.water.org.uk/wp-content/uploads/2020/03/SSG-App-C-Des-Con-Guide-v-2-100320-C.pdf
33 Service Delivery Report 2018/19, p. 21 (https://www.ofwat.gov.uk/wp-content/uploads/2019/10/Service-delivery-report-2019.pdf); Service Delivery Report 2019/20, p. 23 (https://www.ofwat.gov.uk/wp-content/uploads/2020/12/Service-delivery-2020-final-1-Dec.pdf).

Figure 1: Sewer flooding capex v. property growth



Source: NWL analysis using data from Models WWW1 & WWW3
Note: the y axis is £/total properties. The scatter graph is plots for individual companies.

(33) None of the drivers for sewer flooding are covered by the cost models and they are only marginally related to growth and certainly not in a linear way as Ofwat also recognises.[34] Having compared these drivers over time to growth we have found no correlation. This does not support the inclusion of the sewer flooding costs in the unit rate adjustment.

2.4.1.2 The ex-post modelling unit rate should not be adjusted for opex

(34) During the hearing the Panel asked us whether the ex-post modelling unit rate should be adjusted because it fails to reflect operating expenditure and therefore the upper quartile value will understate costs compared to the average.[35] We respond to these points here.

(35) Historical data which separates out capital and operating costs for growth is not available. We tend to capitalise virtually all these costs and consider that this is likely to be the most efficient approach. It is also in line with the accounting rules which require the capitalisation of costs where these relate to a new or replaced capital asset. Almost all the costs relating to growth fall into this category because all our work relates to the connection of new properties. The forward-looking data (for 2020-25) prepared by Ofwat largely bears this out, where we can see that on wholesale water growth costs eight of the 17 companies report no opex at all and only six companies have any reported opex above 1% of their costs forecast.[36] On wholesale wastewater growth costs where most companies (9 out of 11) report some opex, this is only greater than 1% of costs for five WaSCs.[37]

(36) Moreover, the percentages of opex reported (either weighted or unweighted) imply much smaller changes to the upper quartile estimate of costs than going to the average would entail based on the information provided by Ofwat in its response to RFI026.

(37) To demonstrate this, we have calculated the historical growth unit cost by uplifting the historical growth costs by the weighted average opex proportions in RFI026. This increases the Historic Growth Unit Cost above the original UQ, but not by as much as the move from UQ to average would.

34 Ofwat PFs Response, Costs & outcomes, para A2.22.
35 NWL Post PFs Hearing 3.12.20 Transcript p. 27 lines 12-17; Anglian Post PFs Hearing 3.12.20 Transcript p. 56 line 17 – p.58 line 23.
36 Ofwat response to RFI026.
37 Ofwat response to RFI026.

(38) If the CMA believes that an adjustment for growth opex is required, we suggest that a direct uplift to historical costs in the model based on the reported opex proportions in the forecast costs is more valid than moving from UQ to average.

Table 3: Historical growth unit costs (UQ, Average and Average uplift) and impacts of including opex in proportionate increases to the forecast growth unit costs provided by Ofwat in RFI026

Historic Growth Unit Costs	UQ	Average	Average uplift	UQ with Opex	Opex uplift
Water	798	1,018	28%	851	7%
Wastewater	1,662	1,990	20%	1,731	4%

Source: NWL analysis based on PR19 and RFI026 data from Ofwat [(see Databook: 'Base adjustment model – with 2019-20 NES comments)]

(39) We consider that ex-post growth expenditure adjustment is overpowered already and there is therefore certainly no case for the CMA to adopt an even stronger unit rate adjustment based on the 'average' unit rate incorporating sewer flooding costs. If the CMA chooses to retain the unit rate adjustment then there is a much stronger case to make the adjustment based on a frontier unit rate excluding sewer flooding costs, reflecting:

- the fact that the differences in growth rates are already accounted for to a great extent in the model drivers which are highly correlated with growth and the forecasts of new connections: any ex-post adjustment should be small upward or downward and the adjustment double counts these elements already; and
- any missing opex costs are smaller than the amounts suggested to move to the 'average'.

(40) Sewer flooding costs are not driven by growth and should be removed from the adjustment regardless. Not doing so leads to us and other companies with high levels of sewer flooding investment but low growth being penalised unnecessarily as it does not reflect relative efficiency. At the same time we see no strong basis for a move to the 'average' growth rate to reflect missing opex: the ex-post adjustment is already significantly overpowered.

2.4.2 The DSRA

(41) We support the expanded DSRA as suggested by the CMA in its PFs, including how it could be applied.[38] We have also argued that the approach to the DSRA should be consistent with the ex-post growth modelling adjustment in terms of the cost areas considered. Just as the ex-post modelling adjustment should exclude sewer flooding, the DSRA should also exclude this.[39] Certainly, there appears to be no justification for an inconsistent approach.

(42) We are conscious that in the PFs the CMA recommended including sewer flooding in the DSRA, but, unlike for STW growth, we have not yet seen a model demonstrating how this would be done. We believe it will be very difficult to model this, which is another reason why sewer flooding should be removed from both the DSRA **and** the ex-post modelling adjustment.

(43) During our hearing the CMA asked whether the DSRA STW growth model (per RFI022) should be based on the unit rate or increases in STW works capacity.[40] We prefer using the unit rate.

(44) We have reviewed the STW growth adjustment model Ofwat submitted as part of RFI022. Whilst we understand what it is trying to deliver, we have a concern over its application for us.

(45) The model starts with the assumption that the increase in STW capacity is related to the level of funding in the FD. As Ofwat notes in RFI026 it did not use STW capacity enhancement

38 NWL Response to PFs, para. 112.
39 NWL Reply to the PFs Responses, para. 86.
40 NWL Post PFs Hearing 3.12.20 Transcript p. 29 lines 20-25.

data in the PR19 cost modelling. The unit rate based on an allowance per additional new property connected is more closely aligned to the base cost modelling and the existing DSRA calculations.

(46) We did not receive specific additional funding for Howdon STW growth, merely an implicit allowance in the base models which were based on historical average expenditure and future growth in wastewater load. As set out in Table 4 below we received £22m not £94m.

Table 4: Breakdown of NWL business plan and FD allowances (£m's, 17-18 prices)

Wastewater Growth 20-25 £m	Business Plan	Implicit allowance in FD
New development & Infrastructure Network Reinforcement	17	17
STW growth	94	22 (39-17)
Sewer flooding (base)	82	64
Sewer flooding enhancement	86	-
Total	280	103

Source: FD Data source SoC para 644 Table 38, March 2019 BP data Table WWS2

(47) Thus, to use a capacity increase figure for a scheme that was not funded would be incorrect. The number of new properties is a more appropriate driver for a model that seeks to adjust the base cost model allowances for changes in growth.

2.4.3 Historical data should be used for the adjustment consistent with the cost models

(48) We note that Ofwat has provided the CMA (in RFI026) with forecast unit cost data across the companies. This prompts a question about the extent to which the unit rates should be set using forecast or historical data. We note that the cost models (from which the allowances are adjusted through the ex-post modelling adjustment) are set using actual historical data and therefore for consistency we consider that the historical unit cost data represents the most appropriate approach. Moreover, we note that the historical data represents actual recent expenditure following the cost pressures companies face and the efficiency that they have been able to achieve, whilst the forecasts are estimates of the future and likely to be different from the outturn. For the DSRA true-up actual reported costs or capacity can be used across the AMP in any event but for the ex-post modelling adjustment the historical data appears to be a better source of data for the adjustment.

2.5 LEAKAGE

(49) It was always the case that we expected it to cost in the region of £16m to achieve the leakage reductions set out in our original business plan. Our original detailed plan for delivering these reductions (as shared with CMA in response to RFI018) was developed to complement WRMP24.

(50) We chose not to seek additional costs for the leakage reductions in our original business plan as our proposed package in the round was sufficient to enable us to meet these costs from the overall totex allowance. This approach was also consistent with the prevailing regulatory methodology at the time which strongly discouraged companies from seeking additional costs to meet PC targets.[41]

(51) As described in the introductory presentation to our post-PFs hearing, the reduced cost allowance in FD19 and now the PFs, relative to our estimate of efficient costs in our BP19 means that we now face a significant cost gap.

(52) Given the CMA's proposed approach to leakage cost allowances for other disputing companies, we consider that not only is it important for all disputing companies to be treated consistently, but that an enhancement leakage cost allowance is a valid way of addressing

41 For a more detailed description of that history, see NWL Response to PFs, Section 6.2.

our cost gap. **On this basis we are seeking an allowance of £15.57m** (see Table 5) noting, as set out in para (4) above that this should be considered in the context of the overall package and we are not asking the CMA to allow more totex than was included in our BP19.

Table 5: Breakdown of Northumbrian Leakage Costs (£m, 17-18 prices)

	NW	ESW	NES Combined
Leakage Reduction Costs	11.14	4.43	15.57

Source: NWL data. NB: A more detailed breakdown of these costs can be found in Appendix 1 of our response to RFI020.

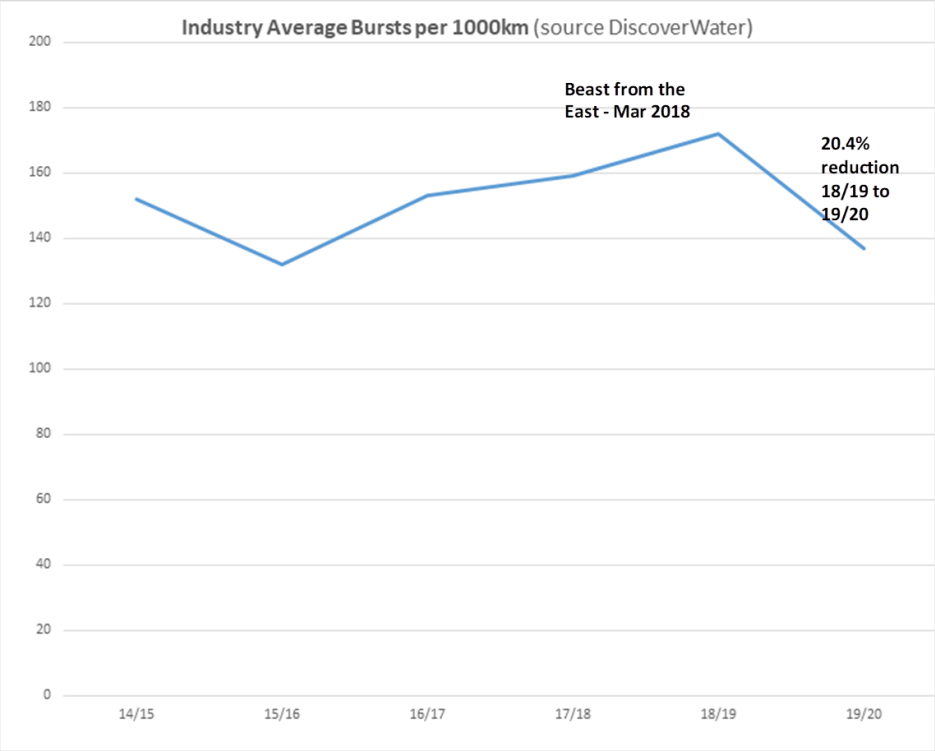
(53) We confirm that our plans are to reduce annual leakage by 15% in NW and 17.5% in our water stressed ESW area – respectively meeting and exceeding the challenge of a 15% reduction set out in Ofwat's PR19 methodology. As correctly set out in the PFs, these percentages appear smaller when expressed in three-year average terms.

2.5.1 Context and Ambition

(54) In its hearing Ofwat referenced the 7% leakage reduction observed across the sector in 2019/20 and uses this as evidence that companies can deliver further reductions in AMP7 without additional funding.[42]

(55) While we do not dispute that some companies are likely to be trying to get a head start on some very challenging AMP7 targets, and this may be a factor behind the 2019/20 reductions, our analysis of those costs clearly indicates that it is unlikely to be the only factor (see Section 2.1.1 above). Instead we consider that the primary factor behind that 7% reduction is a 20.4% reduction in the rate at which pipes burst across the industry between 2018/19 and 2019/20 as set out in Figure 2 below.

Figure 2: Industry average bursts per 1000km



Source: https://discoverwater.co.uk/

(56) This reduction in the burst rate is a typical pattern in the years following a severe weather event – in this case the "Beast from the East" freeze/thaw event in March 2018. At a basic level more pipes burst in harsh winters than in mild winters - which itself leads to a degree of

42 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 16 lines 19-26. See also Ofwat PFs Response, Costs & Outcomes, Section A3.8.

fluctuation in burst rates and hence leakage levels. The fluctuation is amplified as a harsh winter will typically "expose" any weak pipes – which otherwise would fail gradually over the next year or two – and causes them to fail immediately. This leaves fewer pipes left to fail in subsequent milder winters. Thereafter, burst rates typically return to the long-term trend.

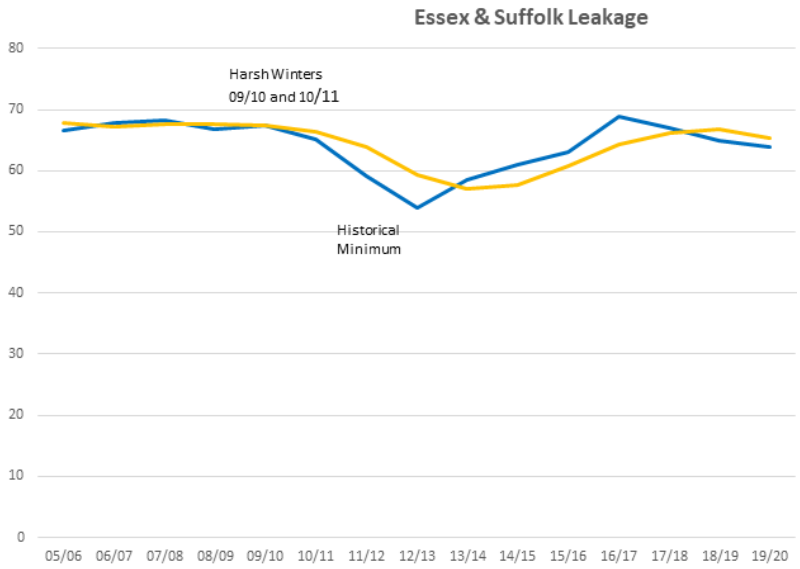
(57) The same effect can be seen in relation to the smaller reduction in bursts observed in 2015/16 resulting in a smaller reduction in leakage. This is evidenced in Figure A3.1 of Ofwat's Response to the PFs (Costs and Outcomes).

(58) As such we consider that the primary factor behind 2019/20 leakage reductions is a weather-related reduction in bursts. We hence dispute Ofwat's assertion that the 7% reduction provides evidence that further leakage reductions can be delivered in the remainder of AMP 7 without additional funding or that it is materially driven by companies making additional investments to get ahead of their AMP 7 targets.

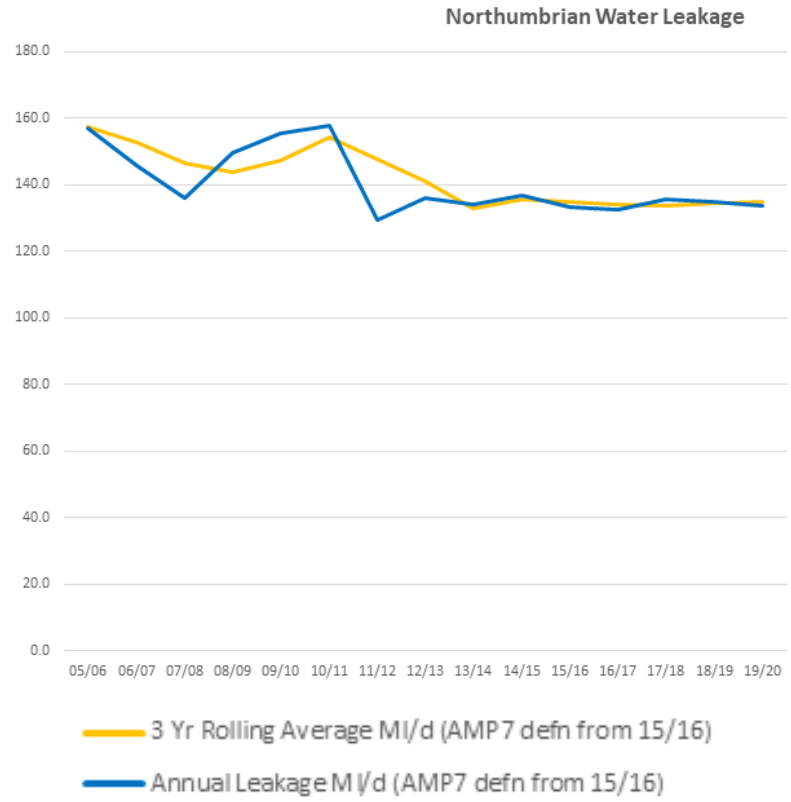
(59) In its hearing Ofwat reiterated its claim that as our historical leakage levels have been lower than our current levels a substantial cost challenge is justified.[43] Whilst we accept that for a brief period our historical leakage levels were lower this was due to an extremely atypical set or circumstances as described below. We consider, therefore, that this historical minimum is not an appropriate baseline against which to assess future reductions and associated costs.

(60) Firstly, we note that in making this point Ofwat does not generally seek to distinguish leakage performance in our two operating areas despite these being measured and assessed separately. As set out in the graphs in Figure 3 below, the achievement of a historically low minimum only applies to leakage performance in our ESW region in 2012/13 when we were the frontier company on a litres/property/day basis. The Northumbrian region has been broadly flat since 2013/14.

Figure 3: Annual and 3-year average leakage rates for our Essex and Suffolk and Northumbrian regions over time



43 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 14 lines 3-5; see also Ofwat PFs Response, Costs & Outcomes, Section A3.7.



Source: NWL analysis

(61) The reduction in leakage levels in ESW in 2012/13 follows the same pattern described above in relation to a reduction in 2019/20 levels: severe winter weather in 2009/10 and 2010/11 brought forward pipe failures and hence resulted in a corresponding reduction in burst pipes and hence leakage some 2 years later.

(62) On this occasion the fluctuation was further exacerbated by the fact that during these winters we were in the process of building Abberton reservoir, the planning consent for which was linked to our leakage performance. As such it was imperative that the impact of the harsh winters did not result in us failing our leakage target. As a result, we initiated a recovery plan and committed resources to leakage to a level far more than what was sustainable in the long term. The tail end of this recovery plan then coincided with a period of benign winter weather, and further amplified the effect described above. This resulted in a historical low point in leakage levels in 2012/13. Thereafter leakage levels returned to the long-term sustainable level.

(63) Even if the CMA accepts Ofwat's argument on this point in principle, we would like to highlight that this historical dip in leakage levels only occurred in our ESW region, so any associated cost challenge should only be applied to the associated ESW costs (£4.43m vs £11.14m in NW).

(64) Finally, we note that Ofwat continues to characterise us as a poor performer, despite the fact that we have generally met the leakage targets which Ofwat itself set.[44] In its post-PFs hearing Ofwat used a graph to support its description of our leakage performance.[45] The time series on this graph commences from the point in time when our leakage levels were lowest, suggesting that the reference period has been carefully selected in order to support the point

44 Ofwat Service and Delivery Report 2019/20, p. 14. https://www.ofwat.gov.uk/wp-content/uploads/2020/12/Service-delivery-2020-final-1-Dec.pdf

45 Ofwat CMA hearing slides – cost – November 2020, slide 2.

Ofwat wished to make, as opposed to reflecting our performance more accurately in the context of a longer term trend.

2.5.2 Leakage costs

(65) In this section we respond to a number of specific challenges made by Ofwat to our proposed costs. These detailed points should be viewed in the context that, as set out in our response to RFI018A, our proposed leakage costs, per Ml/d reduction, are more efficient that the upper quartile benchmark set based on all companies who submitted leakage costs during PR19. We are also the only disputing company whose leakage costs are more efficient than this benchmark.

Table 4: NWL's leakage costs based on Ofwat's PR19 comparative analysis

Company	Unit cost (£m/Mld reduction)
PRT	0.33
SVE	0.48
NES	0.51
SSC	0.53
NWT	0.60
BRL	0.65
AFW	1.61
YKY	2.03
WSH	2.03
SRN	2.10
SEW	2.35
WSX	2.42
ANH	3.30
TMS	3.70
SES	4.85
Upper Quartile	0.56

Source: Various responses to RFI012 and Ofwat FD19.

(66) At a component/activity level, our unit costs also compare favorably. One exception relates to Bristol Water's costs for active leakage control. This is due to Bristol Water not including costs for noise loggers which in our circumstances are cost beneficial in the longer term.

Table 5: Comparative assessment of leakage activity unit costs (£m/Mld reduction)

Activity	NES	BRL	YKY	ANH
Pressure Management	0.09	0.75	n/a	0.8
ALC – find/fix/repair	Not broken down	0.61	Not broken down	0.8
ALC – noise loggers		n/a		7
ALC - Combined	1.31	0.61	2.01	4.2

Source: Responses to RFI020

(67) Ofwat challenges our assumptions on pressure management and uses these to justify a cost challenge, proposing that a 23% reduction to the benefit of pressure management be removed.[46] We consider that this reduction is appropriate for the reasons set out below and highlighted in our hearing, and hence that Ofwat's cost challenge is not justified:

- pressure management is the most cost-effective way to reduce leakage, so opportunities to apply it should be exhausted before considering more expensive options. As described in our hearing, pressure management can only be undertaken when there is too much pressure in a District Meter Area (DMA) otherwise pressure at customers taps will fall to an unacceptable level;[47]
- to ensure that we maximise the scope to apply pressure management, we have undertaken desktop analysis of the pressure in all our DMAs (as shared with CMA in our

46 Ofwat's Reply to PFs Responses, Cost & Outcomes, para. A3.10.
47 NWL Post PFs Hearing 3.12.20 Transcript p.60 line 23 – p.62 line 11.

response to RFI018). This analysis identified the theoretical maximum scope to apply pressure management in our operating areas;

- we then applied a 25% reduction to this scope, as we know from recent experience that this proportion of pressure management schemes will not be viable in practice once more detailed on the ground surveys are undertaken. Factors uncovered by these more detailed surveys which render a pressure management scheme non-viable include:
  - discovering differences on the ground such as: long private supply pipes to properties on the top of a hill (which would receive inadequate pressure if pressure was reduced); unexpectedly tall properties/apartment blocks; pressure losses which are not apparent in our theoretical model; complications with the ability to supply the DMA from a neighbouring area (with differing pressure) should a failure occur in the primary pipe supplying the DMA; or the lack of an appropriate location to install a pressure reducing valve; and
  - negative impacts elsewhere in the incentive framework, for example negative impacts on customer service scores from reductions in pressure.
- we hence consider that our proposed scope to apply pressure management, as set out in RFI018, is the maximum likely to be achievable in practice, and hence that Ofwat's suggested cost challenge should not apply.

(68) Ofwat also challenges the apparent lack of reference to innovations in our optioneering – including any updates on the innovations already delivered or other potential innovations that we had previously identified but not fully developed.[48]

(69) Fundamentally there are only three methods available to companies to tackle leakage, which in cost benefit order are:

- reduce the pressure in pipes (pressure management);
- find and fix leaking pipes (active leakage control / ALC); and
- replace ageing pipes/mains with new ones (mains replacement).

(70) Innovation is unlikely to change this on a fundamental level in the foreseeable future. At a more granular level, innovation activity tends to focus on tools and techniques for finding leaks – and has been successful in identifying ways to find leaks more efficiently. To the extent that these innovations have proved beneficial, they are already incorporated in our proposed costs. Examples are as follows:

- various analytical techniques including leakage hotspot identification tools, and grouping DMA's based on flow profiles. These have proved successful, and the benefit of these is included in our proposed costs for ALC;
- noise loggers – these tune in to the noise generated by a leaking pipe. Again, these have proved successful, and are incorporated in our plan; and
- using sniffer dogs or satellite imagery to pinpoint leaks. Trials have shown these methods to not be beneficial.

2.6 COST SHARING RATES – THE MISLEADING 'EFFICIENCY GAP'

(71) In its hearing, Ofwat stated:

"Then again, we need to kind of take a view of what is the difference between us and companies represent? If we thought that this is forecasting accuracy, then you might put more weight on protection. But actually we think most of the difference between us and companies is inefficiency. They submitted high-cost business plans. So our main concern is not about forecasting inaccuracy, but rather it is about making sure customers do not pay for this inefficiency. Our incentive does

48 *Ofwat's Reply to PFs Responses, Cost & Outcomes, para. A3.9..*

exactly that; it gives them a very strong incentive not to overspend on the basis of their business plan."[49]

(72) We believe this statement explains the issue at stake with Ofwat's PR19 cost sharing arrangements – Ofwat views all differences between our BP19 totex and its FD19 allowance as inefficiency and penalises them through asymmetric cost sharing rates which increase as those gaps increase.

(73) There is a clear difference between the companies' view on base and enhancement costs versus Ofwat's position in FD19, as shown in Table 6.

Table 6: Cost efficiency 'gap' at FD19 – differences between company & Ofwat views

'Efficiency gap'	Company view	Ofwat FD	Difference
Base costs (A1.2)	41,515	41,345	0.4%
Enhancement Costs	11,131	8,278	25.6%

Source: FD Cost Efficiency appendix

(74) The enhancement 'efficiency' gap of over 25% is of particular concern. In many cases, the gap is not attributable to inefficiency but can be explained by Ofwat disallowing lumpy enhancement investment schemes entirely on the grounds of scope. As a result, companies face an inefficiency penalty for simply having suggested schemes that Ofwat subsequently rejects on the grounds of necessity. Our own sewer flooding enhancement scheme is a case in point – the associated cost is treated by Ofwat as an inefficiency in its application of the cost sharing rates rather than simply being removed from the scope.

(75) In our view Ofwat's current approach inhibits innovation and discourages companies from making precisely the investment proposals we should expect to need to make in the future. The application of the cost sharing rates penalises companies that propose innovative enhancement schemes (supported by customers) that are disallowed by Ofwat on the grounds of scope or timing.

(76) We suggest that, for future reviews, the CMA encourages Ofwat to reintroduce the two-way adjustment mechanism it previously used in PR04 and PR09: schemes that were disallowed on grounds of scope were simply removed, without an associated efficiency penalty. Not to do so would create a chilling effect on company business plans, with companies incentivised to prepare low risk plans that only deliver schemes pre-approved by regulators and not innovative ones supported by customers. This would primarily apply to enhancements and would reduce the misleading 'efficiency gap'.

(77) This simple amendment for enhancements is particularly important as there is potentially a large scale of investment in the future highlighted by the National Infrastructure Commission, Government Strategic Policy Statements and Net Zero carbon commitments.

(78) In the meantime, for PR19, we support the CMA conventional PF approach of cost sharing rates nearer 50%. We provided a fuller discussion of this issue in our SoC.[50]

3 SEWER FLOODING RESILIENCE SCHEME

(79) As stated in our previous submissions and at the hearing we remain concerned that there is a clear gap in the regulatory framework for the resilience investment we are proposing in our proactive sewer flooding risk reduction programme. As such we encourage the CMA to reconsider our case in its final determination.

(80) At the hearing the Panel explored several key points in relation to our case, including:

49 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 58 lines 10-17.
50 SoC Section 6.4, para. 515.

- why we did not simply expand the base programme of work instead of suggesting a different risk reduction enhancement programme;
- why the drivers of climate change and urban creep are not reflected in the past/in the base modelled allowances (which for example already reflect growth to some extent);
- what the level of reduction in risk to our customers would be as a result of the enhancement programme; and
- how the programme would interact with the base programme in AMP 7 and beyond?

(81) In this section we expand on the answers provided in the hearing. Whilst we acknowledge the overlap with our previous submissions on this scheme, we consider it should be helpful to the CMA to bring together the various strands in the context of the questions posed by the Panel. We also provide an updated view on programme deliverability, and address Ofwat's comments about the feasibility of funding this scheme through ODI rewards.

3.1 PROGRAMME DELIVERABILITY

(82) Following the CMAs PFs, we have taken the opportunity to give further consideration to the deliverability of the full sewer flooding resilience programme. This takes into account delivery over four years rather than five, the decision by the CMA not to issue its determination in December 2020 and the ongoing impacts of Covid-19 on ourselves and our supply chain. In consultation with our delivery partners we have concluded that, given current circumstances, delivery of the full 7,400 programme in the remainder of AMP 7 after the CMA's redetermination will be extremely challenging. If the CMA is minded to provide an allowance for this programme we would propose that the programme is reduced by 20% to 5,920 properties at a total value of £64.3m (this accounts for the conservative 8% overlap previously excluded). The delivery ODI we have proposed already protects customers if we fail to deliver the proposed outputs but this would set a target that we consider is deliverable and also correspondingly softens the impact on customer bills.

(83) The remainder of this section considers our request for funding in that context.

3.2 THE ROLE OF ODIS IN FUNDING ENHANCEMENT INVESTMENT

(84) We agree entirely with the challenge that the CMA Panel put to Ofwat at its hearing in that the ODI framework is never going to adequately fund major network investments like this: it is a marginal framework to reflect marginal improvements.[51] We have previously set out for the CMA Panel compelling evidence that Ofwat's analysis that our scheme could be funded through ODI rewards is fundamentally flawed.[52] Leaving aside the lack of regulatory consistency in this area (noting that cost assessment and PC/ODIs have changed completely at each one of the last three price controls) it is not mathematically possible that the costs of the proposed scheme could be funded through ODI rewards (see para. (86) below). Ofwat's statement that we "*pass that cut*" and that this is not merely "*a hypothetical proposition*" are, therefore, incorrect.[53] Nevertheless we would welcome a long-term framework of incentives and cost allowances that would support these investments over the long term.

(85) In its hearing Ofwat suggested that this was feasible on the premise that we could replicate the experience of Severn Trent who earned in the region of £150m from ODI rewards during the 2015-20 AMP6 period.[54]

(86) The biggest portion of Severn Trent's AMP6 reward was indeed driven by flooding performance – the majority by improvements on external flooding. This was only possible as

51 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 79 lines 6-13
52 NWL Post-Hearing Submission, Section 2.1.2.
53 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 80 lines 16-18
54 Ofwat Post PFs Hearing (2) 2.12.20 Transcript p. 79 lines 14-23.

Severn Trent's ODI reward rates at the time deviated substantially from the rest of the industry. For external flooding Severn Trent's ODI reward rate was 450% higher than that set for us at FD19. The maximum reward that NWL could earn through the ODI performance framework in AMP7 for Internal and External Flooding is £11m (£4m internal, £7m external).

(87) Ofwat itself recognised this during AMP 6 in its 'Final determination of in-period ODIs for 2018' where, to qualify for any further rewards, Ofwat required Severn Trent to reduce its incentive rate by 85% to bring it "*broadly in line with those of other companies*".[55] It is misleading, therefore, to use this as an example to support the flawed proposition that our enhancement scheme could be funded through ODI rewards.

3.3 BENEFITS OF PROACTIVE RISK REDUCTION PROGRAMME VERSUS AN EXTENDED BASE PROGRAMME

(88) In our hearing the CMA queried why we are progressing our enhancement scheme as opposed to simply accelerating our base programme and bringing forward investment from PR24.[56]

(89) In AMP7 we have a base programme to meet the common sewer flooding PC comprising c.£82m of investment. This is summarised in Table 7 below. This programme will address properties that have previously experienced flooding, resolving both hydraulic and network serviceability issues.

Table 7: List of base sewer flooding programme activities and costs by category

Activity type	Description	Number of schemes	Total cost	Total benefits (flooding internals avoided)
Hydraulic Incapacity	Projects to improve the capacity of the sewerage network. Solutions will range from traditional solutions such as sewer upsizing and/or storage tanks and sustainable solutions.	29	£13.9m	179
Sewer Rehab	Schemes to maintain the existing network and address flooding other causes risk. This investment includes both planned and reactive rehabilitation of sewers.	6	£37.7m	95
Tactical Plan	A range of improvement interventions to make a step change to performance in year 1 and 2 of AMP7.	10	£5.2m	1,030
Tactical Plan - Find & Fix	Proactive, targeted and comprehensive CCTV investigation and rectification of issues, prioritised towards areas with a flooding history, with the aim of improving flooding other cause performance.	1	£25.6m	470
		45	**£82.4m**	**1,774**

Source: NWL analysis from the wastewater rolling capital plan, May 2020. Previously provided to CMA in NWL Reply, Section 3.4, Table 4 (May 2020).

(90) The enhancement proactive risk reduction programme proposes investment to reduce flooding to those properties that haven't experienced flooding yet, but which our models predict are at greater risk of flooding from the accelerating risks of climate change and urban creep.

(91) The focus areas of each programme are distinct. When addressing known flood risk the focus is to provide flood protection to the individual properties that have flooded based on the root cause of that specific instance of flooding. A hydraulic issue may result in specific improvements to capacity in the vicinity of the properties and a serviceability issue may necessitate targeted network remediation. The approximate unit cost per property of resolving known hydraulic flooding in our AMP7 programme is c.£78k (see Table 7 above).

55 *Ofwat's Final determination of in-period ODIS for 2018, p. 20 https://www.ofwat.gov.uk/wp-content/uploads/2018/11/In-period-ODI-final-determinations-December-2018.pdf*

56 *NWL Post PFs Hearing 3.12.20 Transcript p.38 lines 17-25.*

Within the base programme we must address the properties that flood on a case by case basis: this focuses the programme largely on responding to flooded properties as those flooding situations arise.

(92) The enhancement programme will take a more strategic view that allows us to reduce risk using a holistic catchment-based approach providing permanent flood resistance measures. By using hydraulic modelling of the impact of climate change and urban creep on our network in the future we can identify hotspots where future risks are likely to materialise and which aren't accounted for in the modelling that informs our base allowance. This will lead to catchment solutions such as re-routing rainwater, creating ponds, lakes and rain-gardens, giving customers water butts and having additional community plans to prepare for flooding. The unit cost of proactively protecting communities from future flood risk is c.£11k per property protected- significantly below the base programme value of c.£78k.

(93) Customers benefit from the enhancement programme as it efficiently future-proofs their communities by providing a more resilient catchment that can deal with the increased flooding risk arising from climate change and urban creep. It also means that individual customers in the protected properties will avoid the horrible experience of their properties actually flooding. Customers valued this at c.£26k for internal flooding and c.£4k for external flooding in our stated preference research. As we have highlighted elsewhere, flooding carries additional costs as well.[57] This provides a very clear and strong demonstration of the cost and customer benefits of progressing the enhancement programme rather than simply expanding the base programme.

(94) We also know from our PR19 customer engagement that customers value this strategic approach – with 71% of customers supporting investment in this scheme and 91% of customers supporting our overall plan.

3.4 ARE THE DRIVERS OF CLIMATE CHANGE AND URBAN CREEP REFLECTED IN THE PAST?

(95) In our hearing, the Panel queried the extent to which companies will always have been addressing the effects of climate change and urban creep and therefore why these drivers were not already reflected in the modelled cost allowances.[58]

(96) As we explained in the hearing:

- the base cost models do not include drivers for climate change and urban creep[59] both of which are increasing over time: we provided evidence to that effect in the enhancement business case that was attached to our SoC.[60] Furthermore, we have shown that our historical programmes of sewer flooding work (and a cohort of other companies) have been materially higher than others and that outputs and cost allowances have been set separately for each company 'in tandem' for between half and all of the time period covered by the base cost models. This implies that the base cost allowances are highly unlikely to fund even the base programme;[61] and
- modelling of flooding events based on storm return periods under climate change is changing in recognition of the fact that flooding events based on statistically long storm return periods have been happening in very quick succession. For example, properties in our Haltwhistle area have received two >1:50 year storms within six years driving flooding on both occasions. We provide further evidence of this in our Reply to Ofwat's

57 NWL Response to PFs, Section 4.2.1, para. 167,
58 NWL Post PFs Hearing 3.12.20 Transcript p. 44, lines 5-20.
59 SoC Section 7.5.3.5; NWL Reply Section 3.4.2.2.
60 SOC278 Wastewater Reduce Flooding Risk for Properties Enhancement Business Case.
61 NWL Response to PFs, Section 4.2.3.1, para. 182.

Response to our SoC, including rainfall analysis from JBA consulting covering locations in our own NE area.[62]

(97) We set these arguments out most comprehensively in Section 3.4.2.2 of our Reply (May 2020) and we would direct the CMA to that section in the first instance. We explained how the Environment Agency (which maintains a c.£2.5bn programme of investment to reduce flooding) has recently commissioned research, in the face of these flood events happening in very quick succession, which highlights that the existing methods for modelling are outdated. That research recognises that the 'stationary' modelling that their existing guidance (FEH13) uses is outdated and needs to be complemented with 'non-stationary' methods which better reflect the growth in storm return periods as a result of climate change. This same guidance (FEH13) is also reflected in Ofwat's reporting guidance for sewer flooding[63] which underlines how the base activity to deliver the common ODI will not reflect these increases in the regularity of storms with high return periods that we are seeing as a result of climate change.

(98) The JBA consulting rainfall analysis confirms the position taken recently by the Environment Agency at a national level, that across six locations within our Northumbrian region the data indicates an upwards trend in storm rainfall depths for most storm durations.[64]

3.5 ASSESSING THE LEVEL OF RISK REDUCTION FOR CUSTOMERS

(99) The Panel asked about the level of risk reduction we will achieve on behalf of customers from the enhancement programme.

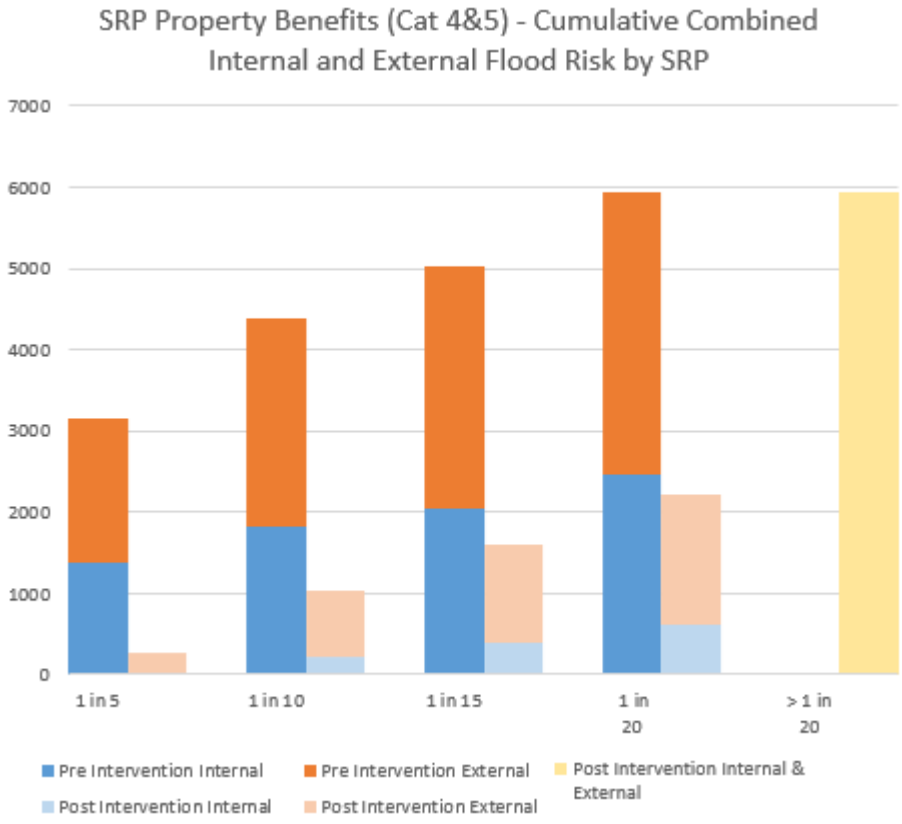
(100) We expect climate change and urban creep to result in a deterioration in our risk profile, with an additional 16,324 properties becoming at risk of flooding due to the impact of these drivers.[65] To mitigate this increase in risk through our enhancement scheme we originally proposed to provide permanent flood resistance to 7,400 of the highest risk properties, but in light of deliverability constraints now propose to reduce this number to 5,920 properties (as described in Section 3.1).

(101) For these 5,920 properties, our hydraulic models are used to identify and quantify the future flood risk they will be exposed to as a result of climate change and urban creep. This risk is expressed in terms of the storm return period (i.e. a 1 in 5 (1:5) year storm) which is expected to cause the property to flood either internally or externally.

(102) As part of our proposed enhancement programme, interventions to mitigate this increased risk are then identified, and the hydraulic models re-run to determine their effectiveness. For these properties Figure 4 below shows the baseline ('pre-intervention') risk position with the effects of climate change and urban creep applied distributed across storm return periods between 1 in 5 and above 1 in 20. It then shows the movement in risk following implementation of the proposed programme ('post-intervention') indicating a significant reduction in properties at risk during more frequent storms (i.e. 1:5) with a subsequent transfer to less frequent/more severe storms (i.e. > 1:20). The graph is cumulative, so properties at risk in a 1:5 storm are also included in the bars which represent more severe storms.

62 NWL Reply, Section 3.4; REP072 Appendix 8: JBA Rainfall Appendix.
63 Ofwat Reporting guidance - Sewer flooding: Final reporting guidance for PR19, 27 March 2018, REP036
64 NWL Reply, Paras 124-125 including Table 3 and Figure 1.
65 SOC278 Wastewater Reduce Flooding Risk for Properties Enhancement Business Case, Section 3.1.

Figure 4: Number of properties at risk by storm severity - pre and post intervention



Source: NWL analysis

(103) Finally, and for the avoidance of doubt, the fact we are protecting against a 1 in 5 year storm does not mean that we expect that storm to occur in the next 5 years - this is an indicator of severity, not a prediction of frequency and as we have set out in paragraph (96) the frequency of these storms is increasing significantly. Furthermore, the increasing climate risk is expected to manifest between now and 2030. As such there is no guarantee or robust way to predict when these flooding events might occur in the absence of the risk mitigation: the modelling simply predicts the ability of the wastewater system to withstand these events when the impacts of urban creep and climate change are taken into account.

3.6 ADDITIONAL PROTECTION FOR CUSTOMERS

(104) Customers are already protected in the event of underperformance associated with the delivery of this enhancement through the penalty-only bespoke ODI we proposed to accompany the funding of the scheme. In our August 2020 post hearing submission, to further protect customers, we built on earlier submissions and provided details of a revised ODI which increased the penalty rate in the event of a failure to deliver the number of risk reduction schemes promised.[66] This revised ODI effectively ensures that if we deliver protection for fewer properties than promised then funding would be returned to customers on a pro-rata basis based on the unit cost of protecting a property. Note, if our proposals are accepted, the target associated with this PC will need to be reduced from 7,400 to 5,920 to reflect the deliverability constraints described in Section 3.1.

66 NWL Post Hearing Submission (August 2020), Section 2.1.3.

(105) During our hearing the Panel queried the extent to which we could or should accept a tougher PC or ODI in future control periods in return for being allowed the enhancement investment in this period, given the potential for overlap across the programmes.[67]

(106) In response to this query we set out the reasons why we do not think a tougher target for the common internal flooding PC in AMP8 or beyond is appropriate. In recognition of the CMA's concerns, however, we have, in this submission, proposed additional customer protection in the form of an additional bespoke PC.

(107) Section 3.3 sets out why our proposed enhancement is different to our existing base programme. We do accept that both occur on an interconnected system, however, and have previously addressed any scope for our proposed enhancement to give a theoretical marginal benefit to our base programme (and hence the common internal flooding PC) by reducing our proposed enhancement costs by 8%. This adjustment is limited because we can identify the broad geographical locations of each of the programmes and they simply do not overlap.

(108) In order for the base cost allowance and internal common flooding PC to form a coherent package, we believe it is necessary for climate drivers to be reflected in either the cost allowance or PC target. Currently, however, climate change drivers are reflected in neither the base cost allowance nor the corresponding PC target (as per Section 3.4).

(109) In this context our proposed enhancement is simply mitigating an expected increase in flooding risk reflected in neither the PC nor the base cost allowance.

(110) In any case, quantifying a tighter internal flooding PC for subsequent control periods at this point in time would only be feasible if there are no wider changes to these aspects of the regulatory framework at PR24 and beyond. Conversely, we believe there is a strong case for changing these aspects to better reflect climate change drivers in future. This would be consistent with Ofwat's view set out in its recent publication 'PR24 and beyond: Future challenges and opportunities for the water sector' where one of the key challenges is "*How do we best regulate to help companies to achieve long-term goals such as adapting to climate change".* [68]

(111) We do, however, propose a further bespoke PC to offer additional protection to customers to address the CMA's concerns. This PC will return money to customers if a property at which we have delivered a flood risk reduction under the enhancement scheme subsequently floods due to rainfall severity which it should have been protected against. This would apply up to the end of AMP8 (2024/25). Full details are set out in Appendix 3.

(112) In summary, therefore the existing bespoke PC described in para (104) protects customers if we don't deliver flood risk reduction at the promised number of properties. This additional bespoke PC protects customers if we do deliver the risk reduction but it does not in practice provide the properties with the levels of protection proposed.

3.7 CONCLUSIONS ON SEWER FLOODING RESILIENCE SCHEME

(113) We maintain that this is an important programme of work, supported by customers and stakeholders which we can take forward in AMP 7 partly because of the significant bill reductions anticipated under our BP19 and the CMA's redetermination.

(114) We have shown that we are addressing current known flood risks through the base programme and will deliver against our base PC through our base allowance. We propose to address future flood risk proactively through the enhancement programme to deliver resilience against the accelerating effects of climate change and urban creep that are not

67 NWL Post PFs Hearing 3.12.20 Transcript p.53 lines 16-18.

68 Ofwat's PR24 and Beyond publication, p3 https://www.ofwat.gov.uk/wp-content/uploads/2020/12/PR24-and-beyond-Future-challenges-and-opportunities-for-the-water-sector.pdf

accounted for within our base allowance. The degree of flood risk reduction we will provide in these high-risk areas is quantifiable and represents good value for money for customers.

(115) We propose the following:

- allowance of a programme to deliver proactive flood risk reduction to 5,920 properties in AMP7 at a total value of £64.3m; and
- inclusion of a delivery underperformance penalty in AMP7 and a service underperformance penalty in AMP8 to address any concerns of overlap with the base programme.

4 RISK AND RETURN

(116) During our hearing we discussed several elements in relation to the risk and return package in the PFs. We have set out our views on the CMA's allowed WACC in the PFs.[69] As part of this post-hearing submission we have also provided the CMA with further evidence from Professor Alan Gregory in relation to alternative methods to the Capital Asset Pricing Model (CAPM) and the covid period,[70] and a note on setting the embedded debt, including the appropriate cross check and the trailing average period.[71]

(117) We do not return to the points made in those post-hearing submissions here but instead focus on:

- 'aiming up' and setting the allowed return, which was not addressed directly in our own hearing but featured prominently in others;
- the latest MARs evidence, which we said we would update in the hearing;
- the cost of debt;
- asymmetry and outperformance; and
- the Gearing Outperformance Sharing Mechanism (**GOSM)**.

(118) We also note that Ofwat's assertions regarding our distributions are not accurate and are potentially misleading.[72] We refer the CMA to our submission on our distributions.[73]

4.1 AIMING UP AND SETTING THE ALLOWED RETURN

(119) The CMA's recent hearings have involved significant discussion on the concept and application of 'aiming up' in the CMA's PFs. We were not asked about this in our hearing directly, but it was raised at many of the other hearings, including a significant explicit discussion with Ofwat.[74] In this submission we provide some additional comments and evidence arising from points raise in those discussions.

(120) We support the principle of aiming up: it is not novel but is, in fact, the more common approach that has been taken by regulators in the past, including in the water sector. Prior to PR19 Ofwat 'aimed up' at both previous price controls.[75] However, as we have set out previously, we do not consider that in practice the CMA has aimed up with the WACC being set at the 47% percentile of the reasonable range provided in our response to the PFs.[76]

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69 NWL Response to the PFs, Section 7; NWL Reply to PFs Responses, Section 3 and Annex 1.
70 Follow up observations on the cost of equity, Gregory, 9.12.20.
71 NWL Post PFs Hearings Submission: Cost of Debt, December 2020.
72 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.15 lines 15-25; Ofwat CMA Hearing Slides: Introduction, slide 7.
73 REP071 Appendix 7: Dividends Appendix.
74 For example, see Ofwat Post PFs Hearing (1) 30.11.20 Transcript pp. 54-60.
75 At PR14 this was based on risk-reward guidance (Ofwat PR14: Setting price controls for 2015-20 - Risk and Reward Guidance, Table 8 https://www.ofwat.gov.uk/wpcontent/uploads/2015/11/gud_tec20140127riskreward.pdf). Ofwat subsequently reduced the point estimate in the FD. However, this was not a move within the range, but rather reflected a reduction in the forecast new debt cost. For PR09 see Figure 3 in Oxera: 'Aiming high in setting the WACC: framework or guesswork', 2015: https://www.oxera.com/agenda/aiming-high-in-setting-the-wacc-framework-or-guesswork/
76 NWL Response to PFs, Section 7

4.1.1 Ofwat's positioning of the WACC as 'high' or 'above-market' are not credible

(121) Throughout the hearings, Ofwat has repeatedly suggested that the WACC is 'high' or implied that the CMA has been 'above-market', including, for example, with reference to PR09 and the setting of the allowed return during the Global Financial Crisis.[77] Ofwat advises that the CMA needs to be careful to ensure that the allowed return remains at the appropriate level and that companies do not earn windfall gains.[78]

(122) The PF WACC is at the bottom of the range set out in our expert report (2.49-2.75% RPI or roughly 3.4-3.7 CPIH real).[79] It has also fallen materially since the last determination in PR14 and, as the CMA has recognised, most of that fall has been driven by choices about how to set each of the parameters rather than market movements.[80] In contrast Ofwat's suggested WACC sits very close to the bottom of the CMA's PF range and below the range set out in our independent expert report. Absent the Ofwat FD19, the CMA's PF WACC represents the lowest allowed return ever set in the water sector since privatisation.

(123) The CMA's PF WACC sits at the 58th percentile of the CMA's range (or the 47th percentile of our proposed range in our Response to the PFs) whilst in contrast Ofwat set a WACC of 4.5% at PR09 (or the 91st percentile of the range recommended by its Economic Advisors, Europe Economics of 2.5-4.7%[81]).

(124) At the same time the PF WACC results in a package which is barely financeable with almost no headroom to withstand reasonable shocks and reflect the clear asymmetry in the package which exists.

(125) Ofwat's positioning that the WACC is 'high' or 'above-market' is simply not credible given the context of the CMA's decisions. Moreover, Ofwat's PR09 example does not provide strong basis for changing the position: the CMA is not setting a generous WACC estimate in the context of concerns over future risk and uncertainty (as Ofwat was following the GFC at PR09) nor has it adopted a WACC estimate too far towards the top of its proposed range. Instead it is setting one of the lowest allowed returns in history well within its range of estimates. Moreover, if Ofwat was apparently so concerned with the 'error' of aiming-up at PR09 then why did it decide at the very next price control to aim up again?[82]

4.1.2 Aiming up is appropriate and there is a real risk of underinvestment

(126) The theory and practice behind aiming-up in regulatory decisions on the cost of capital suggests that the consumer detriment is higher where there is underinvestment than where the allowed return is set marginally too high. This is entirely consistent with the water sector where we would note that:

- water and wastewater services represent the ultimate essential service: failure to deliver these services effectively can quickly escalate into a significant public health issue;
- there is a clear long-term need for future investment driven by climate change, water scarcity, flooding and the drive to achieve net zero amongst other factors;
- the asset lives are notoriously long compared to other sectors making it difficult to identify the difference between capital efficiency and deferment in each five-year period; and

77 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p 53 lines 12-22, p. 54 lines 10-14 and opening presentation from Ofwat Chair
78 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.10 lines 16-22
79 NWL Response to PFs, para, 325..
80 CMA PFs, para. 3.
81 See: Ofwat PR09 Final Determination document, Table 45, p.127 (https://www.ofwat.gov.uk/wp-content/uploads/2015/11/det_pr09_finalfull.pdf)
82 See FN 75. Note: The guidance clearly shows that Ofwat 'aimed-up' on virtually every parameter estimate.

- the asset health metrics are not currently effective as we and Ofwat have separately both highlighted.[83]

(127) This makes both the consumer detriment from under-investment and the risk of that detriment greater than many other regulated utility networks. In fact, the factors driving the case for aiming-up are stronger in the water sector not weaker. As such there is a strong case for 'aiming up'.

(128) In the short term we need to set a package that is financeable, and which can meet a solid investment grade credit rating. This enables us to borrow money more efficiently which will benefit customers. If we fail to do that then in addition to the loss of financial resilience borrowing costs will go up. The package is already very tight. Whilst the CMA PFs deliver a 1.53x AICR, if the £83m cost gap we have highlighted drives an overspend with an assumed RoRE penalty from the asymmetry in the ODIs, the PFs already fail to meet the 1.5x AICR.[84] As we explained to the CMA in our presentation the PFs are barely financeable and we could easily see a drop in our credit rating.

(129) There is also a real risk of underinvestment. Where the return is set too low investors will seek to drive greater cost outperformance. In a capital-intensive sector, where asset lives are very long it can be difficult to spot the difference between efficiency and deferment. This risk is compounded by the poor-quality asset health metrics in place.

(130) The impact on consumers is highly likely to be asymmetrical - with greater costs from underinvestment compared to the cost of higher prices. If the WACC is set too high, customers will pay the difference between the allowed WACC and the actual WACC (*RCV). The impact on customers (i.e. the welfare loss) will be a linear function of the 'WACC-wedge'. However, the welfare loss from underinvestment is likely to be much wider and include intangible quality related 'costs' including, for example, network failures such as sewer flooding, reduced drought resilience, etc.

(131) The Scottish Water Regulator, WICS, has recognised that Scottish Water will need to invest significantly more in the future to meet net zero and to ensure that it is undertaking enough asset maintenance and resilience investment.[85] The investment challenges facing Scottish Water are entirely consistent with our own.

(132) Indeed, in the PwC work that was undertaken for Ofwat and provided with its response to the PFs, we can see that following the PR99 review (which resulted in a settlement that was too challenging and had to be significantly reopened) there was a significant level of capital underinvestment consistent with a tight allowed return as illustrated by the financing cost wedge. [86]

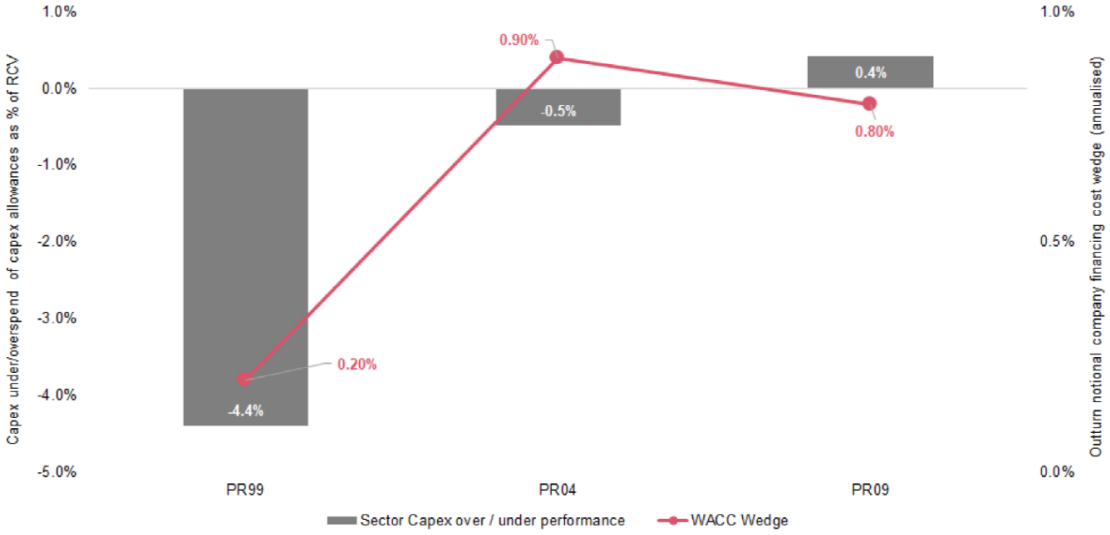
83 SoC Section 7.7; Ofwat: Time to act, together: Ofwat's strategy October 2019 (https://www.ofwat.gov.uk/wp-content/uploads/2019/10/Time-to-act-together-Ofwats-strategy-1.pdf); Ofwat: Asset resilience project kick off meeting, 4 November 2020 (https://www.ofwat.gov.uk/wp-content/uploads/2020/11/Asset-resilience-presentation.pdf).

84 NWL Response to PFs, Table 20.

85 Water Industry Commission for Scotland (WICS) Strategic Review of Charges 2021-27, Final Determination https://www.watercommission.co.uk/UserFiles/Documents/WICS%20Final%20Determination%20Report%20-%20Final%20Screen%20ready%20for%20website_1.pdf

86 PWC, Review of the relationship between financing allowances and water company performance, October 2020

Figure 5: Capex under/overspend (5yr) as a percentage of RCV and the difference between ex-ante WACC and ex-post WACC



Source: Taken from PwC, October 2020, Review of the relationship between financing allowances and water company performance, Figure 4.4

(133) This also confirms that Ofwat is wrong to suggest that other incentives are enough to meet any gap (e.g. through totex sharing rates or ODIs). These incentives were not enough to stop the underinvestment that occurred following PR99.

(134) Contrary to what Ofwat suggests, companies do have flexibility over their capex during the AMP and they will review this on a periodic basis - it is not a 'command and control' regime. Whilst the asset health metrics and statutory obligations help to mitigate the risk of underinvestment, they are imperfect, particularly at capturing the impact on the long-term resilience of the network.

4.1.3 Ofwat's arguments rely on anecdotal market sentiment which is insufficient and partial

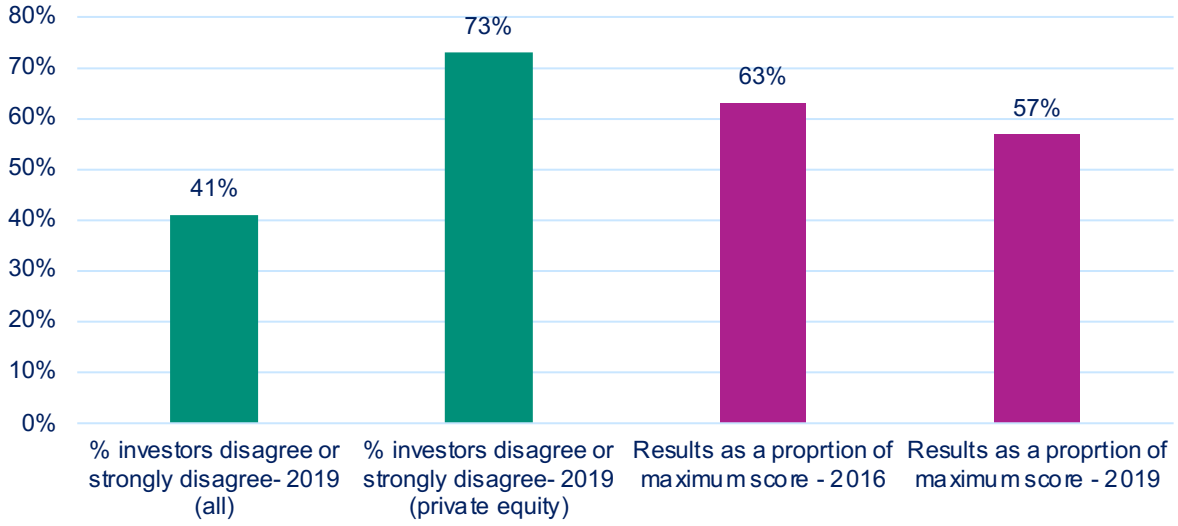
(135) Many of Ofwat's arguments rely on anecdotal examples of market sentiment. The CMA is asked to rely on the judgement of the Ofwat Chair based on his experience of the market for global infrastructure investment.[87] We do not consider that these anecdotal examples can reasonably be preferred to the robust analysis of each of the parameters of the WACC that have been debated and the CMA has considered so carefully during this redetermination exercise.

(136) Moreover, we find Ofwat's evidence to be quite partial. There is, for example, evidence that the sentiment of investors has and is falling in the sector:

- following Ofwat's 'back in balance' consultation, Moody's downgraded the stability and predictability of the UK Water regulatory regime, with clear negative impacts on the cost of borrowing in the sector for customers going forward;[88] and
- Ofwat's own investor surveys clearly show a decline in investor support over the time it has been collecting this data.[89] In 2019 41% of investors didn't consider that Ofwat was listening to them and this number increased to 73% of Private Equity investors.[90] Overall there has been a 5% drop from 2016-19.

87 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.11 line 20 – p.12 line 9.
88 SOC358 Regulator's Proposals Undermine the Stability and Predictability of the Regime
89 Ofwat's Investor Surveys for 2017, 2018 and 2019 are available at https://www.ofwat.gov.uk/investor/investors-annual-publications/
90 https://www.ofwat.gov.uk/wp-content/uploads/2020/03/Investors'-survey-2019-–-summary-of-results.pdf Figure 2 (overall) and Section 2.3 (PE).

Figure 6: Ofwat investor survey: Is Ofwat listening to investors?



Source: Ofwat Investor Survey, March 2020

4.2 MAR EVIDENCE AND LISTED COMPANY INTERIM PERFORMANCE

(137) During the hearings the CMA and Ofwat referred to the MAR evidence based on listed comparator company share price data. We have updated the MARs analysis presented in May 2020[91] to reflect the latest market evidence. The results of this analysis are presented below and in Appendix 4).

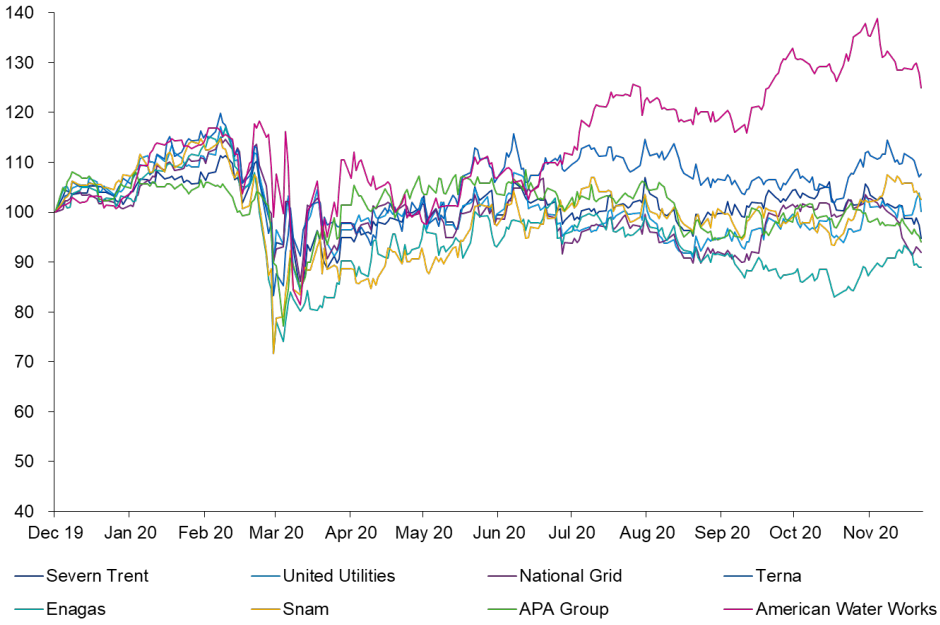
4.2.1 Share prices are affected by a myriad of factors

(138) We maintain our position that there are a myriad of factors affecting share prices at any given point in time, which cannot be fully controlled for.

(139) In Figure 7 below, we have updated our analysis which illustrates the movements in share prices since FD19 (re-based to 13th December 2019) for Severn Trent and United Utilities against comparable companies. These include companies in similar sectors (e.g. Water Utilities, Gas Utilities, and Transmission and Distribution companies) in other countries. Figure 7 shows that Severn Trent's and UU's share price has performed similarly to that of the comparator companies even leading up to November 2020 (with the exception of American Water Works and Terna). This suggests that there could be additional factors, other than Ofwat's FD19, that may be driving share prices.

91 NWL Reply, Section 6.3.

Figure 7 Share price performance – rebased to 100 at 13th December 2019

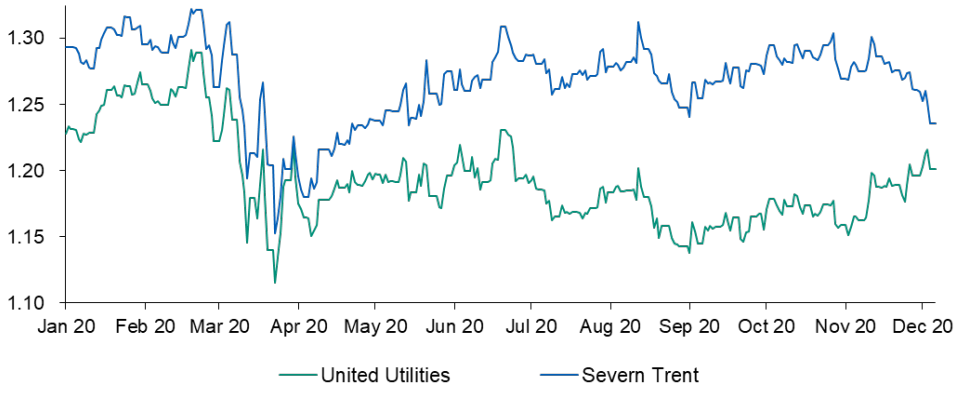


Source: Analysis of data from Thomson Reuters Eikon

4.2.2 Decomposition of MARs

(140) As previously stated, any decomposition of a premium on MARs would require adjustments for forecasted performance on costs, incentives and the value from non-regulated businesses. We have previously set out why we consider this process to be inherently uncertain, and therefore why MARs are not suitable for assessing expectations on the cost of capital.[92] Our analysis assessed the average MAR between February and March 2020. This is updated in Figure 8 to reflect the period January to December 2020.

Figure 8 MARs – January to December 2020



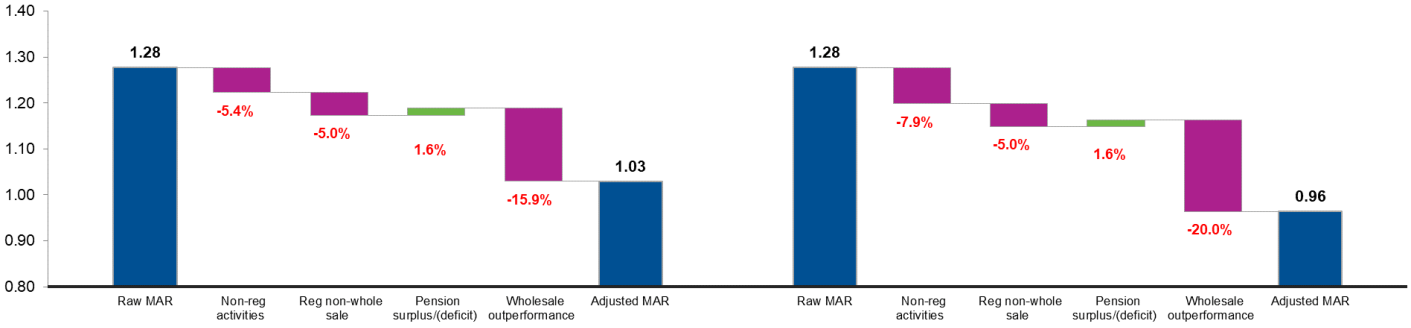
Source: Analysis of data from Thomson Reuters Eikon

(141) We have updated the decomposition analysis to reflect the latest data from analyst reports and market data on MARs (i.e. the average MAR over November). The results as shown in Figure 9 and Figure 10 are consistent with our previous findings that there is a wide range on the MARs (below and above 1) once outperformance has been taken into account. It is

92 *NWL Reply, para. 425*

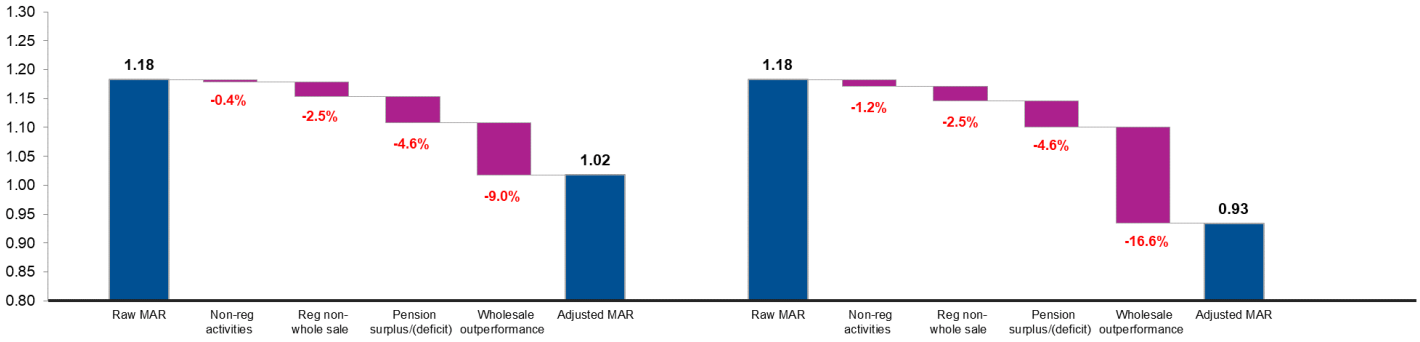
therefore far from clear that there is a premium on MARs even after outperformance has been adjusted for. Our analysis considered evidence from multiple analyst reports.

Figure 9 Decomposition of premium on MAR for SVT



Source: Appendix 4

Figure 10 Decomposition of premium on MAR for UU



Source: 0

(142) Fundamentally, we do not consider that the CMA can take much from the experience of these companies, which are some of the best comparative performers across the sector. Overall, as observed from the figures above, updating our MARs analysis to reflect the period May – November 2020 implies a MAR range for SVT and UU of 0.93 – 1.03, which is broadly similar to the range we presented in our response to Ofwat (of 0.93 – 1.08).

4.2.3 Listed company interim performance is weaker than the same period in AMP 6

(143) Ofwat asserts that the interim results provided by UU, Severn Trent and South West Water provide evidence of the achievability of the PR19 FD.[93] We would not draw the same conclusions from these results and the illustrations of these results are in some cases incorrect.

(144) Operational performance in these three companies can reflect both cost and ODI performance. On both metrics results are mixed:

- on costs, one company (SWW) reports significant totex outperformance (2.2% RoRE) whilst the other two companies report no totex outperformance and spending in line with allowances. UU's reporting may suggest that they are expecting some cost overruns across the AMP to be funded by ODI rewards; and
- on ODIs two of the companies report expected ODI rewards for 2020-21, c.£25m for SVT and c.£10m for UU. SWW reports penalties for ODIs in 2021 (-0.2% RoRE).

93 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p. 64 lines 11-24; Ofwat PFs Response, Risk & Return, para, A2.24.

(145) However, comparisons can also be made with the same year in AMP 6. This approach reflects the fact that often year 1 represents the largest reported totex outperformance as companies begin to ramp-up their capital expenditure and year 5 of the AMP is the point when the outturn position can be observed.

Table 8: Totex comparisons with Year 1 & 5 years of AMP6: 2015-16

2015-16 Totex (Year 1)	SVT	SWT	UU	Industry
Actual	964	271	1179	7,435
FD	983	343	1019	7,949
Underspend	19	71	-160	515
Percentage under/(over)	2%	21%	-16%	6%

2015-20 Totex (AMP 6)	SVT	SWT	UU	Industry
Actual	5475	1421	5640	39,960
FD	5505	1686	5288	39,486
Underspend	29	265	-353	-474
Percentage under/(over)	1%	16%	-7%	-1%

(146) From the above analysis we can see that:

- the SWT 2020-21 forecast totex underspend of 16% is consistent with its year 1 (15-16) performance and its overall AMP6 totex efficiencies, but is much lower than the same year in the previous AMP; and
- UU and SVT have not specified totex efficiencies for 2020-21 and instead referred to advancement of investment. This suggests their totex may be close to their equivalent AMP6 positions of matching or exceeding the FD.

(147) It is worth noting that, for the industry during AMP 6, year 1 (15-16) outperformance was 6%, but this reversed to an overall cumulative overspend by 2019-20. We do not consider that this analysis allows us to conclude that the PR19 FD was appropriately challenging. A subset of some of the best performing companies in the sector are forecasting materially less outperformance than the same period during the previous AMP. If anything, this confirms our concerns about the overall PR19 package.

4.3 COST OF DEBT

(148) Ofwat's responses to the CMA's questions on the cost of debt allowances contain inaccurate and significantly misleading assertions. For example, Ofwat repeatedly quotes the average tenor of debt in the sector as 13 years: this figure reflects the weighted average years to maturity and the average tenor at issue is closer to 20 years.[94] Ofwat also seems to suggest that a 15 year trailing average plus a five year look ahead for new debt is similar to taking a 20 year trailing average: this does not seem to us to be a reasonable position to take as it does not capture market conditions across the 20Y investment horizon.[95] In Appendix 5 we provide an interpretation of Ofwat's statements in which we attempt to clarify what we think Ofwat was referring to and provide some commentary on those answers.

(149) In addition to our separate submission on the trailing average period for the cost of debt and the cross-check[96] there are two specific issues arising from Ofwat's hearing that we wish to address.

94 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.21 lines 10-11.
95 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.20 lines 12-16.
96 NWL Post PFs Hearings Submission: Cost of Debt, December 2020.

(150) Firstly, we find Ofwat's policy position in relation to the setting of the cost of embedded debt to be confused. The CMA Panel spent a significant amount of time questioning Ofwat during its hearing about its policy objectives and what it was trying to achieve with its methodology. During this questioning Ofwat's answers appeared to us to clarify that it neither wants to use an independent benchmark-led index approach to maximise incentives to raise debt efficiency nor set an allowance based on companies' actual cost of debt. **Effectively Ofwat's policy removes the positive incentive properties of the notional index by applying a binding cross-check ex post based on its novel APR approach.** Moreover, there is a real risk that this hybrid approach could be applied on (1) an unstable and unpredictable basis across price controls; and (2) an asymmetric basis over time with greater emphasis on benchmarks in a rising interest rate environment and on actual costs where rates fall.

(151) Based on Ofwat's proposals the allowed cost of debt would be set more on the basis of the industry average than the notional benchmark. This would clearly remove the incentive properties of the index. **If the CMA still believes that the notional index is the best approach then it should retain a focus on this approach. Any cross check should only be applied in a way that fundamentally retains the incentive properties of the notional index and does not blur the distinction between the notional benchmark and actual company financing choices and risk positions.** This could be undertaken by the CMA placing weight on the balance sheet cross check used by Ofwat in FD19 and using the same dataset (which still represents the most appropriate dataset available) and appropriately including costs associated with swaps and derivatives. This provides a figure of 4.95% consistent with the CMA's PFs.

(152) Secondly, we note that Ofwat goes to significant lengths to emphasise that customers should not be required to pay for companies increasing leverage above the notional and that the focus of the policy should be on ensuring that companies with leverage below the notional gearing should be able to recover their debt costs.[97] However, in our own hearing the CMA queried departures from Ofwat's notional benchmark such as altering the mix of debt in the notional company and tenor on an ex post basis.

(153) The notional company is a fixed and stable construct that has evolved slowly over multiple price controls. It is made up of a collection of notional assumptions on financing and capital structure that go well beyond gearing to consider the composition of the debt, tenor under the IBoxx index and other parameters. **Just as Ofwat suggests that companies with gearing close to the notional level should be able to recover their costs of embedded debt**, **the same should be true in a consistent fashion for other aspects of the notional benchmark, including the mix of fixed and index-linked debt (and the absence of for example floating debt).** This example is particularly true for companies like us with a mix and tenor of debt that is very consistent with the notional benchmark. If interest rates had *increased* over time and companies were more exposed to changes in rates as a result of holding floating rate debt, it is unlikely that Ofwat would increase its allowance ex post to reflect the different risk positions adopted by companies relative to the benchmark.

(154) **If the CMA agrees with Ofwat's assertions that the allowance for embedded debt should focus on ensuring that companies with gearing close to the notional level can recover their costs**, **then the same should be true for the mix and the tenor of that debt.**

97 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.25 lines 8-10.

Table 9: NWLs debt composition is very close to the notional company

Parameter	PR19 Notional company	NWL
Gearing	60%	67%
ILD	33%	38%
Fixed debt	67%	61%
Floating debt	0%	1%
Average tenor	c.20 years	c.25 years

Source: NWL analysis of its debt portfolio and Ofwat FD 19, Aligning Risk and Return Technical Appendix, Table 6.2
Note: The mix of ILD and Fixed debt has been approximately 2/3 and 1/3 for at least the last three price controls

4.4 ASYMMETRY AND OUTPERFORMANCE

(155) We note that the CMA raised the issue of asymmetry and downside risk in the PR19 package in Ofwat's hearing.[98] Ofwat has explicitly criticised our analysis in this area in its submissions.[99] In its hearing Ofwat asserted inter alia that:

- there is no asymmetry in the package, highlighting updated new analysis that it has undertaken;[100]
- the PR19 package offers more significant scope for outperformance rewards than ever before;[101] and
- some aspects of the package are more symmetrical, noting that the C-Mex measure is now symmetrical for the first time.[102]

(156) We assume that the new analysis Ofwat is referring to relates to Annex 4 of its Reply to Responses to the CMA's PFs[103] but note that Ofwat also challenges the CMA's asymmetry analysis in its PF response. In these submissions it raises a number of arguments but its more significant response is that the assumption that performance outcomes are distributed symmetrically is not correct. Ofwat states that it provided evidence to show a positive skew in performance distribution and that in doing so it applied the P10, mean and P90 performance from the 2015-2020 distribution to disputing companies' PR19 ODI packages to estimate the level of ODI returns that companies could earn in PR19.

(157) Ofwat states that its analysis suggests that the positive skew means that the expected PR19 ODI returns are positive for each company, ranging from 0.05% - 0.37% of RoRE and that its analysis corrects for the fact that the PC levels for some PCs was more challenging in PR19. Ofwat states that it corrects for the step-change in PCs by assuming that the P50=PCL for the PR14 common PCs. It then applies the resulting distribution to the PR19 ODI package based on the outturn positions of PR14.

(158) We do not consider that this analysis really adds anything new to the debate as it does not adequately consider that performance targets in PR19 are considerably more stretching (compared to PR14). Even if the CMA were to accept that there is some pessimism bias in company forecasts of our outturn performance this does not change that fact that: a) the incentives are materially asymmetrical; and b) as we have already demonstrated the step-change in PC targets at PR19 is also material.[104] The approach taken by Ofwat does not address the targets issue at all: it assumes the companies would be able to meet the challenging targets set at PR19 at the P50 level. This is the fundamental problem with the PC targets and a key driver of the asymmetry.

98 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p. 62 lines 5-8.
99 Ofwat PFs Response, Risk & Return Section A.2; Ofwat Reply to PFs Responses, Risk & Return.
100 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p. 62 lines 9-13
101 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p. 62 lines 14-16
102 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p. 62 lines 16-19.
103 Ofwat Reply to PF Responses, Risk & Return, Section A4.
104 SoC Section 5.2.3; NWL Reply, Section 4.3.

(159) We find Ofwat's other statements selectively highlight different factors in the package and ignore the overall package in the round. Whilst it is true to say that the PR19 control does offer the potential for greater upside ODI rewards than in previous controls, as we have all shown the CMA (and Ofwat's own analysis confirms) there are also much greater penalties and in aggregate the net position is one of greater penalty even before the enormous stretch in the PCs is added.[105] Similarly, whilst Ofwat is correct that the C-Mex metric is symmetrical in that it theoretically does allow similar maximum rewards and penalties and this was not the case with its predecessor (the Service Incentive Mechanism) the way that the incentive has been designed largely makes the achievement of the maximum rewards impossible. This is because it requires (amongst other tests) that the company is at or above a cross-sector threshold of customer satisfaction performance based on the all-sector upper quartile (ASUQ) of the UK Customer Satisfaction Index (UKCSI). No water company has ever achieved this and there is considerable distance for the sector to travel to do so.[106] This is a good illustration of Ofwat's evidence and argument on this issue: partially presented and failing to reflect the realities of the enormous stretch embedded in the service targets.

(160) Ofwat also presents several misleading statements about companies' historical performance.[107] The data for the out-turn position on AMP 6 (PR14) is available and published on Ofwat's website and this provides no ambiguity- following the PR14 control in AMP 6 we have not seen evidence of any systematic outperformance by the companies. Instead the evidence points to the PR14 control being well calibrated, challenging for the sector to achieve but possible for some high-performing companies. Overall:

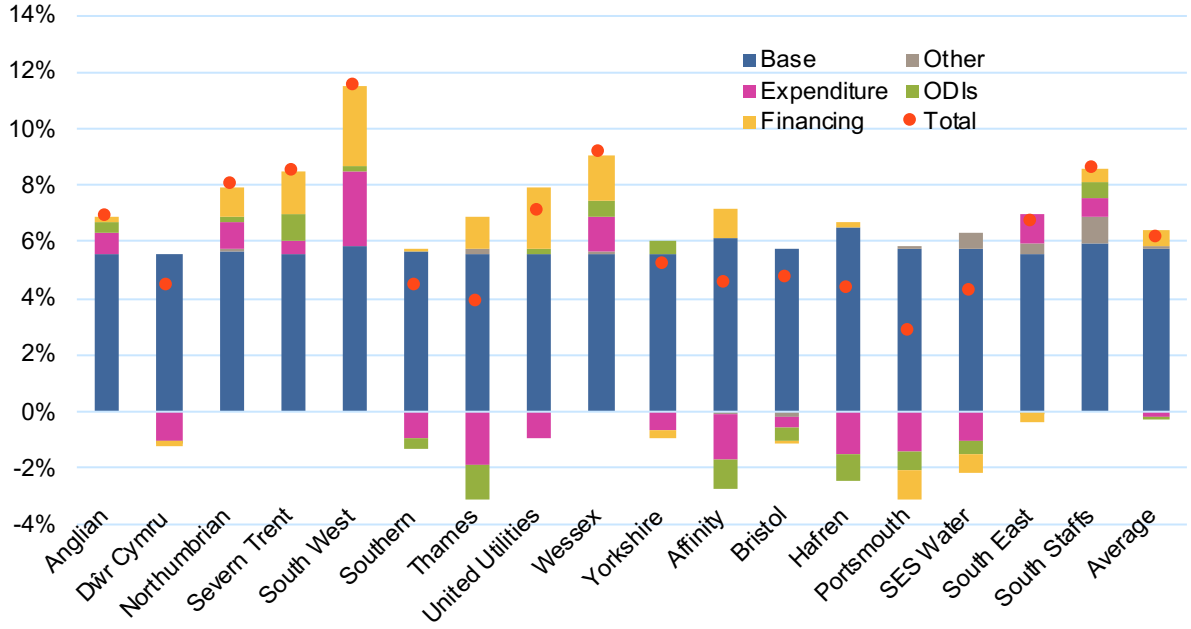
- most companies failed to earn their base return;
- on average the sector overspent against their PR14 allowed totex (-0.2% RoRE);
- on average the sector experienced net penalties in relation to service performance albeit this was largely driven by one company (-0.09%);
- the average RoRE at a sector level was 6.1% against a base return of 5.8%; and
- financing outperformance accounted for 0.6% on average.

105 SoC Figures 49 and 50; SOC188 Ofwat FD19: Aligning Risk and Return Technical Appendix, Figure 3.6.

106 Note the Ofwat CMex decision document reflects the core financial incentives as asymmetrical and exactly consistent with the SIM (see Ofwat, Final Determinations 2019, Customer measure of experience (C-Mex) and developer services measure of experience (D-Mex) policy appendix p.10): "Those companies that score above the median company score will receive standard outperformance payments for that year of up to 6% of that year's annual allowed residential retail revenue and those that score below the median company score will incur underperformance payments of up to 12%." The document goes on to explain a theoretical possibility that a company can gain a further 6% of reward. To achieve these rewards above the maximum previously available under the SIM Ofwat required companies to meet a range of tests, including achieving an UQ target on the UKCSI index. No company has ever achieved these requirements and this is also true of the current CMex shadow year reporting. It is highly questionable whether it is feasible for any company to do so.

107 See, for example: Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.78 lines 11-14 and 24-25 where Ofwat states there is 0.8% outperformance on average in the sector over the last four AMPs. Analysis shows, however, that the sector did not outperform on totex in three of the previous four AMPs, with PR09 as the one exception (NWL Post Hearing Submission, para. 52) Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.63 lines 19-22: this statement implies that companies outperformed PR14 but in fact they didn't – they overspent on totex and they got net penalties on ODIs. Ofwat refers to the companies being 'pessimistic' rather than acknowledging what the actual outturn was. Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.65 line 6 – p.66 line 2: These statements dramatically understate the step change in the PCs and ODIs for AMP 7. Given that the AMP 7 requirements are of an order of magnitude beyond what people have achieved in the past, the comparison drawn by Ofwat to past controls is not reasonable.

Figure 11: Sector performance against base returns 2015-20 (RoRE by source)



Source: Ofwat monitoring financial resilience report, 2019-20.[108]

(161) We would further highlight that this performance occurred in the context of:

- an RPI rather than a CPIH-linked control period where efficiency targets were softer than at PR19. The PR19 control will require significantly greater levels of efficiency to be achieved and on average allows c.100bps less cost inflation for most cost categories;
- a control period where, as we and others have shown, the service level targets were materially lower than those that have been set at PR19. PR19 will require much more stretching service targets than have ever been achieved;
- a control period without indexation for new debt which was a source of significant financing outperformance that has rightly been removed and is not in dispute; and
- a control period without a true-up for tax differences which was also a source of outperformance that has also rightly been removed and is not in dispute.

(162) Put simply, the CMA Panel is correct when it asks whether the Ofwat 'reset' is actually tougher than any historical performance would support.[109] There is simply no way that the challenge inherent in the package is not driving asymmetric outcomes. This point should not be in dispute. That asymmetry has been addressed effectively in the allowed return set by the CMA in its PFs and the financeability cross-checks that have been undertaken and should similarly be reflected in the CMA's final decisions.

4.5 GOSM

(163) During the post-PF hearings, the CMA Panel has revisited the Gearing Outperformance Sharing Mechanism (**GOSM**) and the issue of higher leverage in the water sector. We set out our views clearly in the hearing[110] as well as in past submissions[111] so we do not repeat them here in detail.

(164) We do not support the inclusion of the GOSM or similar regulatory price control incentives to reduce leverage below a certain level. As the CMA has noted, as a business with gearing

108 https://www.ofwat.gov.uk/wp-content/uploads/2020/12/Monitoring-financial-resilience-report-2019-20.pdf
109 Ofwat Post PFs Hearing (1) 30.11.20 Transcript, p.63 lines 8-17.
110 NWL Post PFs Hearing 3.12.20 Transcript p.91 line 13 – p.96 line 6.
111 SoC Section 8.14; NWL Reply, Section 6.9; NWL Response to PFs Section 7.8.

below the GOSM benchmark we are well placed to comment on the relative merits of Ofwat's proposals without the risk of self-interest as we are unaffected by the mechanism given our current levels of gearing.

(165) The CMA Panel specifically raised the possibility of alternatives to the GOSM and asked explicitly about licence modifications. We would make the following observations:

- the CMA Panel is right to note that some companies have recognised the difficulties associated with higher leverage and made commitments to reduce leverage.[112] Indeed average gearing across the sector fell by 3% from 2016-19[113] and notional gearing at PR19 was reduced to 60% compared to 62.5% at PR14. It is entirely possible that if Ofwat does nothing gearing at a sector level may reduce in any event, further highlighting the marginal nature of the issue;
- as the CMA has rightly noted the issue of high leverage is specific to a sub-set of companies across the sector and reducing leverage is a complex and company specific matter affected by the circumstances of each one;[114]
- there is no obvious reason why any control for this perceived risk needs to form part of the price control redetermination at a sector level. Given the specific nature of the issue to some companies if a case can be made for such a control (and we do not feel that it can for the reasons set out) then it would be more appropriate for that mechanism to be set out for individual companies. This allows flexibility regarding how arrangements are applied and minimises any negative unintended consequences that an arbitrary cap would likely drive; and
- moreover, the licence modification process requires the consent of all those affected (with Ofwat retaining the power to refer the matter to the CMA if a company unreasonably refuses to give such consent). This better reflects the appropriate governance for a change like this and will rightly encourage Ofwat to focus its arguments on those companies directly affected rather than a blanket sector wide approach. Indeed, we believe that Ofwat chose the price control route because it considered it would be easier to gain agreement as part of an industry wide process than in a process of 'de novo' appeals.

(166) We do not consider that there is an issue here to be addressed. If Ofwat identifies that this is a risk, then it can only be the case for a subset of companies across the sector and we still believe that the best approach would be for Ofwat to use its soft regulatory powers to encourage those companies to sign up to a plan to reduce leverage over time. This is entirely within its gift, avoids all the problems of the GOSM mechanism, allows company specific tailoring to their circumstances and probably addresses the issue in the most effective and targeted way in any event. If companies refuse to respond to Ofwat's concerns, then it could seek to bind individual companies into specific plans for them via a licence condition that required their agreement.

5 CUSTOMER ENGAGEMENT AND THE ROLE OF CCGS

(167) In its hearing, Ofwat made various comments with respect to customer engagement in general and the role of the CCG's in particular. This included reference to the risk that the CCGs might "*lose their independence*"[115] during the price control process and anecdotal evidence from the Ofwat Chair that Ofwat non-executive board members are concerned about the degree of "*capture*" within the CCGs.[116]

112 Ofwat Post PFs Hearing (1) 30.11.20 Transcript, p.100 lines 2-8. See also Ofwat FD19, , Aligning Risk and Return Technical Appendix, p.105
113 Ofwat 2018-19 Monitoring financial resilience report charts and underlying data: https://www.ofwat.gov.uk/publication/financial-monitoring-report-2018-19-charts-and-underlying-data/ 'S6. Gearing'
114 CMA PFs paras. 9.587-9.590.
115 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.68 lines 10-11.
116 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.69 lines 2-6.

(168) We are deeply concerned, and expect that the CCGs would be too, by these comments. As the CMA has been told directly by the CCG representatives they are fiercely proud of their independence and the role they play in challenging companies to deliver for customers and other stakeholders. Loose allegations that even some of the CCGs might be 'captured' are serious and damaging to the credibility of the price control process.

(169) This further underlines the importance of the CMA passing some comment on these arrangements for future price reviews. Our concern is that whilst we are clear how the CCGs have challenged us to set out a strong plan, which for example offered the largest bill reductions across the sector, Ofwat has not enjoyed the challenge to its work that they have provided. We are concerned that Ofwat is seeking to downplay the role of CCGs in the future which we do not believe would be in the customer interest.

APPENDIX 1: INCLUDING 19-20 BASE MODELLED COSTS

A1.1. Overview

1. We have analysed the scale and source of the 18-19 to 19-20 water base totex increase. We have analysed it in four steps, focused entirely on water costs (wastewater costs are clearly not atypical being lower in aggregate than previous years):
    - Stage 1: Identifying the key cost times from water base modelled costs- identifying the key cost lines in the data;
    - Stage 2: Identify the material increases in cost items in Water Base modelled Costs- using those cost lines identify which are growing materially;
    - Stage 3: Associate the Water common PCs with the material cost changes- linking the cost lines to service level improvements (PCs); and
    - Stage 4: Investigate whether companies that have spent more in 19/20 on the key cost lines have linked this to delivery of ODIs- this includes examining which companies have seen relevant cost lines grow and what those companies have reported in their APRs.
2. Our conclusion is that the water base cost increases could be for many reasons, not just companies advancing AMP7 expenditure to meet stretching PCs and ODIs. This does not support the view that the 2019-20 year is having any kind of distortive effect on the base cost allowances.

A1.2. Analysis of water cost increases from 18-19 to 19-20

Stage 1: Identify key cost items in Water Base modelled Costs

3. There are 15 cost lines in total in the base cost model for water but 99% of the 19-20 costs are made up by 7 lines. 8 lines are small, each one making up less than 1% of costs. We have extracted the 7 lines per below and shown the difference in each of the lines between 18-19 and 19-20.

Table 10: Water base cost lines and changes 18-19 to 19-20

		18-19 to 19-20	
Water key cost lines	**19-20 £m**	**Change £m**	**% Change**
Power	377	-5	-1.4%
Renewals expensed in year (Infrastructure)	432	23	5.5%
Other operating expenditure excluding renewals	1,373	-38	-2.7%
Maintaining long term capability of the assets – infra	399	3	0.8%
Maintaining long term capability of the assets - non-infra	1,173	151	14.7%
New developments	203	5	2.3%
New connections	107	3	3.1%
		141	

Source: FM_WW1 NES analysis for CMA Dec response Databook

Stage 2: Identify the material increases in cost items in Water Base modelled Costs

4. The material 18-19 to 19-20 cost increases relate to 'Renewals expensed in year (Infrastructure)' and 'Maintaining long term capability of the assets - non-infra'. It is noticeable that operating expenditure fell from 18-19 to 19-20 and it is capex/renewals that drive the increase.

Stage 3: Associate the Water common PCs with the material cost changes

5. We have also sought to align those cost categories that are rising against the various water PCs as per the table below.

Table 11: Key cost lines related to water PCs where investment could be aligned to seeking service improvement

Water PCs	Cost line - material changes
Supply interruptions	Renewals expensed in year (Infrastructure)
Leakage	Renewals expensed in year (Infrastructure)
Compliance risk index	Maintaining long term capability of the assets - non-infra
Mains repairs	Renewals expensed in year (Infrastructure)
Unplanned outage	Maintaining long term capability of the assets - non-infra

Source: FM_WW1 NES analysis for CMA Dec response Databook

6. The water pressure and drought measures are deemed not to be linked to these costs. Water pressure has its own cost line that was not material.

Stage 4: Investigate whether companies that have spent more in 19/20 on the key cost lines have linked this to delivery of ODIs

Table 12: Water PCs, their related cost lines and companies reporting increases

Water PCs	Cost line - material changes	Company
Supply interruptions	Renewals expensed in year (Infrastructure)	WSH, TMS
Leakage	Renewals expensed in year (Infrastructure)	WSH, TMS
Compliance risk index	Maintaining long term capability of the assets - non-infra	NWT, SVT, AFW
Mains repairs	Renewals expensed in year (Infrastructure)	WSH, TMS
Unplanned outage	Maintaining long term capability of the assets - non-infra	NWT, SVT, AFW

Source: FM_WW1 NES analysis for CMA Dec response Databook

7. Analysing the two key cost categories by company, 80% of the increase can be attributed to a small number of 'material companies' who spent materially more on infrastructure renewals (WSH, TMS) with three (NWT, SVT, AFW) spending more on non-infra maintenance.

Table 13: Analysis of increases in relevant PC cost lines by companies reporting increases and others

Water Cost	Increase	Material companies	Others
Renewals expensed in year (Infrastructure)	23	21	2
Maintaining the long-term capability of the assets - non-infra	151	117	33
	173	138	35
% of total	100%	80%	20%

Source: FM_WW1 NES analysis for CMA Dec response Databook

8. We have reviewed their APRs to consider whether this was due to expenditure to meet AMP7 performance commitments. There is some evidence that **Thames Water** spent more on leakage in 2019/20. However, 88% of this would relate to meeting the 19/20 leakage target rather than early delivery on an AMP7 target. Thames confirms in its APR that: *Reducing leakage was one of our most important priorities for 2019/20, and we've made very good progress. At 595Ml/d, our annual leakage is at its lowest level for over 30 years, and we met our target for the first time in four years, with a 95Ml/d year-on year reduction in reported leakage… our increased focus and productivity, coupled with the dedication and sheer determination of our people and the contractors supporting us, meant we were able to go beyond our 2019/20 target of 606 Ml/d.* [117]

9. **Welsh Water** confirms that it did not meet its target for supply interruptions and will be investing in AMP7 to do so: *We did not meet our 5-year target for reductions in pollution incidents,*

117 Thames Water APR *2019/20, p. 4* https://www.thameswater.co.uk/about-us/investors/our-results

however, nor our targets for customer acceptability for quality of water and reliability of supply (number of minutes lost)… We know that we have to work harder in these areas and ***will be investing further to improve our performance in AMP7 (2020-25).***[118]

10. **United Utilities** spent £16m more on non-infra maintenance than in 18/19. This may be linked to its statement: *During 2019/20 we have been able to accelerate a further £50m of work that was due for the 2020-2025 period.*[119]

11. **Severn Trent** Whilst Severn Trent confirms a focus on leakage, its reference to the right trajectory for AMP7 does not necessarily mean expenditure was brought forwards and could just as easily be a reference to maintaining its existing leakage outperformance from 18/19. *Last year we reported our detailed approach to ensure we delivered our leakage commitments following the impacts of the freeze/thaw and hot weather conditions of 2018. We deliberately continued many of these activities as we began 2018/19 to ensure we continued to build the momentum and stay on the right trajectory as we enter in to AMP7.*[120]

12. **Affinity Water** has confirmed that their increase in non-infra maintenance was due to the HS2 diversion costs for raw water abstraction, so there is no evidence of investment brought forward to meet performance commitments.[121]

13. Overall, we do not consider that this supports the view that the majority of the additional investment has been to get ahead of AMP 7 service improvements. Our analysis shows that the water base cost increases are explained by a variety of reasons. For example, Thames Water appears to have spent more to simply meet its 2019/20 leakage ODI, whilst Affinity Water spent more due to a large diversion cost related to HS2. Furthermore, the largest increase in costs is for above ground assets, which does not suggest that companies were investing in leakage (which are below ground).

A1.3. Investment to deliver future service improvements happens every year and is not usual or atypical

14. We note that, in 2019/20, the Ofwat service delivery report confirmed that in 2019-20, companies met 64% of performance commitments, compared to 63% in 2018-19. The total ODI penalties in 19-20 were greater than in 18-19, suggesting that, if companies like Severn Trent are investing in advance of AMP7, it is for capital equipment that generate service improvements in future years rather than immediate service improvements.

15. This is not unusual for the water industry; most large capital maintenance schemes are designed to generate improved service levels in future years. This approach applies for all years, not just the final year of an AMP. This is why this expenditure was not classed as 'brought forward from AMP7' by companies in the official transition expenditure tables or the APR.

16. For further illustration, capital maintenance expenditure in 2010-11 (the year before the cost modelling period begins) was used to deliver 2011-15 service improvements, in the same way. For example, in 2010-11 we invested in water assets to improve serviceability for 2011-15.

A1.4. Reported Transition Expenditure only relates to 1.4% of industry totex in 2019/20

17. Ofwat notes its view that the APR commentary "*suggests significant investments were brought forward*" from AMP 7 to meet future performance commitments and implies that this might invalidate the use of the 2019/20 data. We do not think such a position is sustainable.

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118 Welsh Water APR 2019/20, p. 111 https://corporate.dwrcymru.com/en/library/annual-performance-reports
119 United Utilities APR 2019/20 p.21 https://www.unitedutilities.com/corporate/about-us/performance/annual-performance-reports-2015-20
120 Severn Trent APR 2019/20 p.34 https://www.stwater.co.uk/regulatory-library/regulatory-library-documents/
121 Affinity Water APR 2019/20 https://www.affinitywater.co.uk/corporate/investors/library

18. The total brought forward transition totex for 2019/20 was £129m. This was only 1.4% of industry totex in 2019/20 and was much less than the £407m (17/18 prices) of transition totex allowed in PR14 for 14/15.[122]

19. Confirming this level of brought forward totex, the industry 2019-20 APRs include a line for **actual transitional expenditure in 19-20**. Table 4B line 6 Transitional Expenditure shows a **total value in 19-20 of £55m**, split £9m water, £46m wastewater. Nine companies have zero values for transitional expenditure. If we ignore the negative Anglian totex £15m deferment, **the water transitional spending is £24m.**

20. This £24m is the 'AMP7 early start' water totex companies reported as spending in 2019-20. We have set out extracts from the relevant APRs for some companies. We can see that the most material amount, £15m by United Utilities, relates to a resilience scheme. There is thus little or no evidence of companies bringing forwards AMP7 expenditure to deliver AMP7 common performance commitments in their financial reporting tables.

122 SOC417 PR19 FD Securing Cost Efficiency Technical Appendix, p.149. Ofwat FD14 Policy Chapter A4 – reconciling 2010-15 performance, p.74 https://www.ofwat.gov.uk/wp-content/uploads/2015/10/det_pr20141212legacy.pdf

APPENDIX 2: EFFICIENCY RANKINGS INCLUDING 19-20 COSTS

Table 14: Water Efficiency Rankings (inc. 19-20 costs)

WATER Forward looking efficiency challenge	WW4: Includes 19-20 costs			
Company	**Business plan (April 19)**	**Our view (average)**	**Efficiency score - business plan**	**Ranking**
ANH	1,667	1,355	1.23	
NES	1,093	1,237	0.88	5
NWT	1,729	2,135	0.81	
SRN	806	755	1.07	
SVH	2,274	2,540	0.90	
SWB	586	689	0.85	
TMS	3,591	3,679	0.98	
WSH	971	1,137	0.85	
WSX	465	520	0.89	
YKY	1,405	1,494	0.94	
AFW	1,006	1,089	0.92	
BRL	383	367	1.04	
PRT	127	171	0.74	
SES	181	171	1.06	
SEW	645	641	1.01	
SSC	425	446	0.95	

Data source: RFI019 Tables WW4

Table 15: Wastewater Efficiency Rankings (inc. 19-20 costs)

Wastewater	WWW4: includes 19-20 costs			
Company	**Business plan**	**Our view (average)**	**Efficiency score - business plan**	**Ranking**
ANH	2,498	2,128	1.17	
NES	880	895	0.98	3
NWT	2,190	2,185	1.00	
SRN	1,655	1,584	1.04	
SVH	2,304	2,625	0.88	
SWB	770	750	1.03	
TMS	3,987	3,766	1.06	
WSH	1,131	1,165	0.97	
WSX	1,002	1,017	0.99	
YKY	1,909	1,624	1.18	

Data source: RFI019 Tables WWW4

Source: ONS, https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/ukhousebuildingpermanentdwellingsstartedandcompleted

APPENDIX 3: ADDITIONAL BESPOKE SEWER FLOODING PC

Occurrence of Sewer Flooding at Properties where Risk has been Reduced

Purpose: This performance commitment complements PR19NES_BES10 (Sewer Flooding Risk Reduction - which returns funding to customers if the company reduces flood risk at fewer properties than set out in the associated enhancement). This additional commitment returns funding to customers if, after a risk reduction has been delivered at a property, it subsequently floods due to rainfall severity which it should have been protected against.

Benefits: This protects customers in the event that the company delivers a flood risk reduction which ultimately proves ineffective. The cost associated with the ineffective flood risk reduction would be returned to customers.

Performance Commitment definition and parameters

<table>
<tr><th>Unique Reference</th><th>PR19NES_BES33</th></tr>
<tr><td>Detailed definition of performance measure</td><td>Number of properties where we have delivered a sewer flooding risk reduction (as set out in PR19NES_BES10) which subsequently flood due to hydraulic incapacity during rainfall severity which they should have been protected against.</td></tr>
<tr><td>Additional detail on measurement units</td><td>Consistent with PR19NES_BES10, properties will be tagged when proactive risk reduction activity associated with the corresponding enhancement scheme reduces the risk of flooding at that property by at least one level between the following bands:
<table><tr><th colspan="7">Internal or External Flooding Risk Levels</th></tr><tr><td>1 in 5</td><td>1 in 10</td><td>1 in 15</td><td>1 in 20</td><td>1 in 30</td><td>1 in 40</td><td>>1 in 40</td></tr></table>
If a tagged property subsequently floods, during rainfall severity it should have been protected against, it will count towards this PC. It will similarly also count towards the base PC.

Worked example: Risk reduction investment moves a given property from being at risk of internal flooding in a 1:5 year storm, to only being at risk of flooding during a 1:30 year storm. If the property subsequently floods due to hydraulic incapacity in a 1:5, 1:10, 1:15 or 1:20 year storm, it will count against this PC. If it floods in a 1:30 year storm or greater it will not count.</td></tr>
<tr><td>Specific exclusions</td><td>Flooding due to other causes (i.e. blockages) is excluded. A maximum of one unit of underperformance payment will apply per property. i.e. if a protected property floods multiple times, only one unit of funding – equivalent to the amount paid by customers for the risk reduction at that property - will be returned.</td></tr>
<tr><td>Reporting and assurance</td><td>No specific additional requirements.</td></tr>
<tr><td>Measurement unit and decimal places</td><td>Cumulative number of properties to zero decimal places.</td></tr>
<tr><td>Measurement timing</td><td>Reporting year</td></tr>
<tr><td>Incentive form</td><td>Revenue</td></tr>
<tr><td>Incentive type</td><td>Underperformance payments, for 2024-25 and 2029-30 only. (with the 2029-30 underperformance payment equal to the number of properties in 2029-30 minus the number already attributed to the penalty in 2024-25).</td></tr>
<tr><td>Timing of underperformance</td><td>End of period in 2024-25 and 2029-30</td></tr>
</table>

and outperformance payments	
Price control allocation	100% wastewater network plus
Frequency of reporting	Annual
Any other relevant information	None
Links to relevant external documents	None

Performance Commitment levels

	2021 -22	2022 -23	2023 -24	2024 -25	2025 -26	2026 -27	2027 -28	2028 -29	2029-30
Performance commitment level	0	0	0	0	0	0	0	0	0
Enhanced underperformance collar	NA	NA	NA	NA	NA	NA	NA	NA	NA
Standard underperformance collar	NA	NA	NA	NA	NA	NA	NA	NA	NA
Underperformance deadband	NA	NA	NA	NA	NA	NA	NA	NA	NA
Outperformance deadband	NA	NA	NA	NA	NA	NA	NA	NA	NA
Standard outperformance cap	NA	NA	NA	NA	NA	NA	NA	NA	NA
Enhanced outperformance cap	NA	NA	NA	NA	NA	NA	NA	NA	NA

Incentive rates

Incentive type	Incentive rate (£m / unit)
Underperformance payment – standard	£0.010648
Underperformance payment – enhanced	NA
Outperformance payment – standard	NA
Outperformance payment – enhanced	NA

APPENDIX 4: MAR ANALYSIS

The data obtained from analyst reports summarised below. This includes analyst estimates on outperformance and the proportion non-regulated and non-wholesale businesses.

Table 16: Analyst estimates of outperformance

Analyst report	Date of report	Severn Trent	United Utilities
Morgan Stanley	26 November 2020	20%	
Morgan Stanley	03 November 2020	20%	17%
Credit Suisse	23 July 2020	16%	
Credit Suisse	23 June 2020	16%	
Credit Suisse	16 June 2020		9%
Range of estimates		**16 – 20%**	**9 – 17%**

Source: Analyst reports: Morgan Stanley (26 November 2020), Morgan Staley (03 November 2020), Credit Suisse (23 July 2020), Credit Suisse (23 June 2020), Credit Suisse (16 June 2020)

Table 17: Analyst estimates of the value of non-regulated and non-wholesale activities

Analyst report	Date	Severn Trent		United Utilities	
		Non-regulated	Non-wholesale	Non-regulated	Non-wholesale
Morgan Stanley	26 Nov2020	5.4%	5.0%		
Morgan Stanley	03 Nov2020	5.4%	5.0%	0.4%	2.5%
Credit Suisse	23 July 2020	7.9%			
Credit Suisse	23 June 2020	7.9%			
Credit Suisse	16 June 2020			1.2%	
Range of estimates		**5.0 – 7.9%**		**0.4 – 2.5%**	

Source: Analyst reports: Morgan Stanley (26 November 2020), Morgan Stanley (03 November 2020), Credit Suisse (23 July 2020), Credit Suisse (23 June 2020), Credit Suisse (16 June 2020)

Table 18: Analyst estimates of Pension deficits

Analyst report	Date of report	Severn Trent	United Utilities
Morgan Stanley	26 November 2020	-1.6%	
Morgan Stanley	03 November 2020	-1.6%	
Credit Suisse	23 July 2020	-1.6%	
Credit Suisse	23 June 2020	-1.6%	
Credit Suisse	16 June 2020		4.6%
Range of estimates		**-1.6%**	**4.6%**

Source: Analyst reports: Morgan Stanley (26 November 2020), Morgan Staley (03 November 2020), Credit Suisse (23 July 2020), Credit Suisse (23 June 2020), Credit Suisse (16 June 2020)

APPENDIX 5 COST OF DEBT: COMMENTARY ON OFWAT HEARING

Ofwat: *We do not put a lot of weight on the actual asset life.*[123]

1. This is not consistent with past statements from Ofwat which recognise the importance of long term financing in line with asset lives.

2. Ofwat's guidance in the early 2000s was for companies to issue long-term debt to ensure that they were efficiently financed considering the long lives of system assets. For example in a 2001 speech, Philip Fletcher[124] commented on Ofwat's statutory duty to ensure that efficient companies could finance the proper discharging of their functions:

   > *"The key here is how efficient the company has been in structuring and managing its finances…Given the* ***exceptionally long lives of system assets, this would suggest the need for a relatively long average duration*** *and an interest rate structure aimed at maintaining a* ***broadly stable real interest cost over time****".*[125]

Ofwat: *But if we extend to 20 years, there are a number of companies that issue debt at shorter term as well. So, if you have a subset of companies that have a shorter maturity profile and, at some point in the future, the cost of debt may start to increase, there is a question about how that backs in for those companies.* [126]

What we do not have in mind is a particular profile and life of debt, and that is up to company treasury functions and they will all take different approaches and strategies in regard to that. [127]

3. There is a real risk that market rates will increase, and that companies which issue shorter tenor or variable rate debt will be more exposed to market movements than companies which have raised long term finance under this scenario.

4. Ofwat suggests (as a result of its 'industry average' policy) that if interest rates increased it might need to increase allowances beyond the increase that would be implied by a 20Y trailing average to protect companies which have issued shorter term debt. This recognises that Ofwat's policy of shortening its trailing average has transferred refinancing/interest rate risk to customers over time.

5. The absence of a clear benchmark and stable regulatory policy has: (1) exposed companies which have issued long term financing in line with the selected benchmark to losses; and (2) transferred risks from companies to customers over time.

Ofwat: *The way we did that is used the notional structure, and so we used the notional level of debt. What we should be trying to do is ensure that a company that raised debt at a notional finance level would have a reasonable prospect of recovering that over time.* [128]

6. We agree that Ofwat should be trying to ensure that a company that raised debt in line with the notional finance structure would have a reasonable prospect of recovering that over time.

7. Ofwat's position appears to recognise the importance of the notional structure in relation to gearing (60%), but not that this concept applies to tenor (20Y) and debt mix (33% index linked, 67% fixed) for the notional company.

123 *Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.20 lines 9-10.*
124 *Ofwat Director General from 2000-2006*
125 *Oxera (2002), Ofwat – Capital structure of Water Companies*
126 *Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.21 line 25 – p. 22 line 4*
127 *Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.23 lines 1-3.*
128 *Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.25 lines 7-10.*

8. Consistency between the tenor assumed for the notional company (e.g. as reflected in the market benchmark selected) and the trailing average period ensures that a company issuing 20Y debt on a continuous basis can expect to recover costs equal to the yield at issuance across the maturity period of each instrument. This is not achieved by Ofwat's 15Y approach, which does not allow for recovery of costs across the maturity period of water company debt raised before 2005.

> Ofwat: *A number of those small water-only companies took a very long time profile on their term of debt, so, back 20 years ago are taking out 30 and 40 tenor of debt - a very high proportion of their debt on very long-term financing. Nothing wrong with that in itself but, obviously, in hindsight, it turns out to be rather expensive.* [129]

9. Different financing strategies *ex post* look more or less successful depending on how market rates have moved and cannot be considered a good indicator of *ex ante* efficiency

10. It is not appropriate for the regulator retrospectively and with the benefit of hindsight to deem long term debt issuance as inefficient depending on how markets have moved through changes to the notional finance structure assumed (in particular tenor).

11. The CMA noted at PR14 that:

> *"an important part of this analysis is the application of a consistent approach to setting the assumptions which form the basis of the calculation of the cost of capital. Both debt and equity investors make long-term financing decisions, including debt financing of up to 30 years' maturity. This reflects investors' expectations not just in respect of the immediate regulatory period, but of a consistent approach over the longer term.*
>
> *This is reflected in the estimated scale of returns for regulated networks, which are relatively low in comparison to many commercial businesses. We understand, for example, drawing on statements from credit rating agencies, that this reflects the stable regulatory environment."*[130]

> Ofwat: *I think is something for both Ofwat and Ofgem to reflect on further, that, actually, despite the move to use of iBoxx trailing averages, we still, both of us in different ways, place quite a high dependence on the sector actual cost of debt.* [131]

12. Ofwat suggests that it is not in practice adopting a benchmark-led approach but setting allowances based on actual costs.

13. This is problematic because: (1) it suggests that Ofwat did not implement its stated policy objective to adopt a benchmark-led approach; (2) there is no ex ante financing strategy which would allow companies to effectively hedge the regulatory regime as Ofwat does not apply a benchmark-led approach consistently over time; (3) this approach is likely to create perverse incentives such as firms trying to match other firm's financing activities; and (4) Ofwat's exclusion of swaps from its analysis of industry costs under its balance sheet approach presents a misleading view of actual borrowing costs and under-states industry costs.

14. Ofwat's mechanism rewards and penalises companies for factors that companies do not control (future market movements, regulatory discretion, other companies' financing policies) rather than factors they do control (i.e. whether the debt was efficiently issued against benchmarks at the time of issuance).

15. A policy based on industry average rather than notional benchmarks implies that, even when water companies issue debt at the most efficient cost available to them in the market at a given

129 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.38 lines 17-21.
130 SOC336 Bristol Water PR14 CMA Decision, paras. 10.6-10.7.
131 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.37 lines 21-24.

point in time, they are still exposed to significant risks of a mismatch between their (efficient) costs and regulatory allowances in the future.

16. This risk arises from the fact that companies receive the cost of debt allowance that changes from one price control to next depending on: (1) changes in market conditions; and (2) discretion in regulatory policy when setting the allowed cost of debt.

> Ofwat: *The level of the terms of the companies' average tenor of debts vary between about 13 - 17 years over recent time periods… As we say, when we look at the sector average life of debt, it is 13 years at the moment.* [132]

17. Ofwat cites *recent* debt issuance rather than all outstanding debt over the long term, consistent with its stated policy objective of recognising and remunerating long term finance.

18. The 13Y average life referred to by Ofwat reflects the *weighted average years to maturity*. As this is a forward looking measure (i.e. time to maturity across the portfolio) at a point in time it is not reflective of tenor at issue or when debt was raised across the sector:
    - the average *tenor at issue* of debt across the sector is 20Y based on fixed rate bonds and 25Y based on all public debt issuance including index linked debt, materially higher than the 13Y weighted average years to maturity cited by Ofwat; and
    - the CC noted in 2010 that "*one of the main factors affecting the cost of fixed-rate debt is the time it was taken out, and interest rates fluctuate over time*".[133] This is also not captured by the weighted average years to maturity.

> Ofwat: *So, effectively, our 15-year backward look plus the 5-year forward look, you are looking at cost of debt over a 20-year time period.* [134]

19. Interest rates have declined materially over time and as a result the trailing average period is very sensitive to when debt is assumed to have been raised and how many years pre financial crisis

20. Ofwat suggests that in practice it has implemented a policy that is consistent with the economic life of assets in the sector (20Y) as its trailing average covers a period of 20Y. However as the 15Y trailing average only takes into account market conditions up to 15Y before the start of AMP7 (i.e. 2005 to 2020) market conditions before 2005 when: (1) market rates were higher prior to the financial crisis; and (2) companies raised long term 20Y debt in line with the average asset life in the sector is not taken into account by the Ofwat trailing average period.

> Ofwat: *The KPMG analysis, for example… focuses on a subset of data which amounts to £35 billion but, actually, we have £60 billion of debt in the sector.* [135]

21. KPMG's analysis of the timing of debt issuance across the sector is based on public debt as water companies have predominantly issued investment grade bonds in line with the target rating and capital structure assumed for the notional company. In addition, this is the most complete and robust publicly available dataset for outstanding water company debt issuance.

22. This approach is also consistent with Ofwat's approach to the calibration of the index throughout PR19 (for example in its Draft Determinations), which was based on the same dataset.

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132 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.20 line 19 – p.21 line 11.
133 Competition Commission (2010): Bristol Water plc A reference under section 12(3)(a) of the Water Industry Act 1991 – Appendices, para. 47(a).
134 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.20 lines 14-16.
135 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.34 lines 3-5.

23. Ofwat calibrated its trailing average period based on the same public debt issuance (Refinitiv data) across the sector and noted in its Draft Determination that "*in contrast to this, the 15-year trailing average has the merit of providing greater coverage of years when the water sector was actively issuing debt – around 80% of outstanding listed bonds in our sample were issued in the period 2004-2018*."[136]

Ofwat: *We do not get a figure of 4.95 per cent. You will have seen in our final determination the analysis that we did which supported the number that we allowed, which was more like 4.47 per cent, from memory.* [137]

24. The cost of debt implied by Ofwat's balance sheet cross check (4.45% based on the median cost for WaSCs and large WoCs) excludes costs associated with swaps.

25. Ofwat has not published data which estimates the cost of debt associated with swaps across the industry based on 2018 data. Europe Economics analysis in 2017 estimated the impact of derivatives at c.50bps; including these costs in the balance sheet cross check implies an all in cost of debt of 4.95%.

26. Swaps should be included as *inter alia*:
    - swaps are inextricably linked to underling issuances (to diversify funding sources and achieve efficient debt issuance). Excluding hedging derivatives would ignore legitimate costs that companies have incurred in securing low costs and managing risks; and
    - delineation between pure debt and swaps introduces a false distinction for the allocation of risk. There is no difference in practice in the nature of risk exposure between these two positions, and it is not clear why for example index linked debt (which hedges inflation risk) should be considered a risk borne by customers and an inflation swap which achieves the same outcome should be not be taken into account.

136 Ofwat (July 2019), PR19 draft determinations: cost of capital technical appendix
137 Ofwat Post PFs Hearing (1) 30.11.20 Transcript p.36 lines 7-9.