EXECUTIVE SUMMARY 1

This is Northumbrian Water's (NWL) submission post our main party hearing on 4 August (1) 2020 (NWL Hearing). We set out some points of clarification on the issues raised during the NWL Hearing. To the extent required, we also respond to points raised during the other main party hearings for Ofwat and the other Referring Companies. As requested by the CMA we have not sought to reiterate arguments made in previous submissions but have crossreferred to those as appropriate. The points made in this submission are summarised in Table 1 below.

Issue	Clarification							
Enhancement investm	Enhancement investment and resilience							
Sewer Flooding resilience	We continue to consider that our base and enhancement sewer flooding programmes are distinct. Any overlap is only consequential given that any intervention in our wastewater network is likely to have some marginal impact elsewhere. Nevertheless, in response to the CMA's questions regarding the potential for overlap, we have sought to quantify any marginal ancillary benefits arising from our enhancement programme which might prevent flooding in AMP7 and contribute to the common sewer flooding PC.							
	Taking an inclusive and conservative approach to what might constitute an overlap in relation to both activity and outcomes and from a historical and forward-looking perspective, we have valued that potential at a maximum of £7.2m (around 8%). To eliminate the risk of overlap for customers we propose that our enhancement programme allowance is reduced accordingly to £78.8m, with the outcomes of the two programmes remaining the same and the 'overlap' activity being absorbed within our base programme and base allowance (which remains unchallenged).							
	To further protect customers, we have built on earlier submissions and provided details of an alternative ODI which increases the penalty rate in the event of a failure to deliver the promised degree of risk reduction for the 7,400 properties.							
	See Section 2.1 for further details.							
Essex Resilience Scheme	Further to the CMA's request for a credible illustration of risk, we have considered some scenarios to assist the CMA in its review. These support our position that the Essex Resilience Scheme is a cost-effective mitigation to a broad range of resilience risks, including in particular low probability but high impact events occurring in combination.							
	See Section 2.2 for further details.							
WINEP – P-removal	We confirm that contrary to Ofwat's suggestion in its hearing that our costs are overstated, Ofwat's model understates our costs for P-removal.							
	See Section 2.3 for further details.							
Costs and outcomes								
information	 Analysis of the complete outturn data from AMP6 demonstrates that: a similar number of companies underperformed as outperformed on totex; a similar number of companies underperformed on RORE over AMP6 as outperformed; 2018/19 was not an atypical year, as wholesale totex only fell by 0.2% in real CPIH terms in 2019/20; and data from Ofgem's RIIO-2 process backs up our arguments that there has not been any systemic historical outperformance in the water sector. 							
	Overall, the PR14 control appears to have been well calibrated and Ofwat's central hypothesis that there has been an 'embarrassing amount of outperformance' is incorrect. See Section 3.1 and Annex 3 for further details.							
Real Price Effects (RPEs)	 In response to specific questions raised by the CMA on RPEs we show that: electricity prices do require an RPE despite being reflected in CPIH; falling renewable generation costs are consistent with rising electricity prices; 							

	 these increases are driven by a range of factors and low or falling oil prices do not undermine the requirement for an RPE adjustment; the methods we have already employed to manage these costs means that we have limited additional opportunity to control these costs beyond a normal frontier shift type assumption; and an extension of RPE adjustments beyond just labour would not move us closer to cost-plus style regulation. See Section 3.2 for further details. 					
Valuation of the 12- hour supply	We explain the calculation of the valuation and its purpose (to calibrate the ODI incentives), noting that a comparison to the cost of alternative supply is not valid.					
Interruption	See Section 3.3 for further details.					
Cost sharing rates	We confirm that contrary to Ofwat's suggestion in its hearing, companies do benefit from reducing the costs in their business plans below the efficient level of costs allowed by Ofwat. We also show that the level of stretch built into the PR19 business plans vastly exceeded that at PR14 and comparisons between companies historical spending and forecasts from PR14 and PR19 support our hypothesis that companies are incentivised to bid low.					
	See Section 3.4 for further details.					
Risk allocation	The level of 'stretch' on the building blocks, such as totex and ODIs is considerably larger than the risk transfer from the reconciliation mechanisms identified by Ofwat (i.e. debt indexation and tax reconciliation). There is quite evidently more risk in the PR19 package and greater downside skew than in PR14.					
	See Section 3.5 for further details.					
ODI RORE ranges	We explain why we consider that Ofwat's RoRE ranges are misleading and that placing too much weight on them can lead to wrong inferences. We highlighted this point in the hearing but did not have the opportunity to explain our reasoning. See Section 3.64.5 for further details.					
Allowed returns and fi	inanceability					
	Further to the discussion in the hearing, we provide some commentary on the					
	Oxera paper on aiming up in the context of setting the WACC. See Section 4.1 for further details.					
Retail margin adjustment (RMA)	We explain and show the range of potential outcomes from a RMA calculation. We show from the uncertainty in the underlying elements of the calculation that to make this adjustment implies a spurious level of accuracy in those elements. We consider that the RMA should not be applied (i.e. the RMA should be zero). The legacy nature of the adjustment is from a time where retail assets were in the RCV and the PwC range and our sensitivities support estimates close to zero and below 0.04%. See Section 4.2 for further details.					
Gearing Sharing Mechanism (GSM)	We expand on the CMA's suggestion of a 70% cap on gearing as a potential alternative to the GSM. We confirm our position that such a rigid mechanism linked solely to gearing is not justified. Financial resilience is about much more than gearing. Any specific concerns about financial resilience would be better addressed through targeted, company specific interventions.					
Defferences						
Rating agency methodologies	We dispute Ofwat's challenge to the perceived independence of rating agencies, and to rating agency methodologies.					
Data						
Debt – outperformance wedge	We highlight that Ofwat appears to have mischaracterised the 'outperformance' wedge' adjustment as relating to the efficiency of past debt issuance by water companies – we have previously shown that this is driven by rating and tenor.					
Debt - derivatives	vve respond to Otwat's statements which suggest that mark to market losses on derivatives represent costs which should not be borne by customers. We do not consider this to be a relevant indicator for cost efficiency and maintain our position that derivatives should be included in the cost of debt calculation. See Section 4.6 for further details.					

2 ENHANCEMENT INVESTMENT AND RESILIENCE

2.1 SEWER FLOODING RESILIENCE SCHEME

2.1.1 Reduction in risk to be delivered by the enhancement programme

- (2) An assessment of the increased risk from climate change and urban creep using hydraulic modelling shows that 16,324 properties which have not flooded previously are at increased risk in the most significant risk bands for a 1 in 20 year return period storm.¹ The Environment Agency (EA) use a similar approach for quantifying movement in flood risk.²
- (3) The proposed enhancement programme takes a catchment-based approach, focused on the reduction of the risk of flooding for 7,400 of those properties. In selecting which catchments to target we have used our risk analysis to identify the existing baseline risk probability of flooding (for example 1 in 20 year) for individual properties as a result of climate change and urban creep (shown as 'X's) and their new probability of risk post intervention (shown as 'O's). An extract demonstrating the change in risk profile is provided in **Figure 1** below.³

Figure 1: Example of change in risk profile for individual properties

Droportu Addross				Internal							xternal (Curtilag	;e)		
Property Address	1 in 5	1 in 10	1 in 15	1 in 20	1 in 30	1 in 40	>1 in 40	1 in 5	1 in 10	1 in 15	1 in 20	1 in 30	1 in 40	>1 in 40
[no.][street name] MIDDLESBROUGH, TS5	Х				0									
[no.][street name] MIDDLESBROUGH, TS5			0											
[no.][street name] MIDDLESBROUGH, TS5			0											
[no.][street name] MIDDLESBROUGH, TS5			0											
[no.][street name] MIDDLESBROUGH, TS5				0										
[no.][street name] MIDDLESBROUGH, TS5				0										
[no.][street name] MIDDLESBROUGH, TS5						0								
[no.][street name] MIDDLESBROUGH, TS5					0									
[no.][street name] MIDDLESBROUGH, TS5					0									
[no.][street name] MIDDLESBROUGH, TS5			х	0										
[no.][street name] MIDDLESBROUGH, TS5			х	0										
Source: NWL Bisk Tool														

2.1.2 Can this be funded through ODI outperformance rewards?⁴

- (4) Delivery of the full enhancement scheme programme would not result in a sufficient degree of outperformance against the common PC to provide the totality of the maximum reward (see Section 2.1.3 below which confirms that there is only a minimal benefit "overlap" from the enhancement programme with respect to the common PC).
- (5) Ofwat's assumption that the potential ODI revenue should match the requested level of enhancement expenditure (and that any mismatch points to something "*not quite right with the Northumbrian calculations*") assumes that customers support outperformance ODI rewards for internal flooding to exactly the same extent as they support resilience enhancement investment in flooding. Ofwat's assumption is flawed, abstract, and overlooks customer views regarding the two different regulatory mechanisms.
- (6) The majority of PCs measure aspects of service failure (i.e. sewer flooding). The concept of an ODI reward for a lesser level of service failure than might otherwise have been the case does not always meet with unanimous customer support. Some customers have the (perfectly valid) view that, especially for extreme service failures (i.e. sewer flooding), the concept of a reward for any level of failure is absurd. It is easy to see how this reduces the degree to which customers might be prepared to fund ODI rewards.

¹ SOC278 Wastewater Reduce Flooding Risk for Properties Enhancement Business Case, Section 6.3 and Table 6. Our approach is consistent with industry best practice and the hydraulic model used in our assessment has been independently verified to ensure our approach to the identification of risk is robust (REP031 JBA Consulting Technical Review of Sewer Flooding Modelling and Risk, 14 May 2020).

² The EA uses this to determine how much Flood and Coastal Risk Management Grant in Aid a project is eligible for, including allowance for future climate change. In late March 2020, the EA updated their partnership funding calculator which included an update to the 'average flood damage per property' to £35,300: https://www.gov.uk/government/publications/partnership-funding-supporting-documents. See sheet "policy assumption and formulae" cell X7.

³ The risk tool identifies the change in risk profile for individual properties. Individual property details have been redacted for the purpose of this extract.

⁴ Ofwat Hearing Day Two, p. 109 lines 3-13.

- (7) Conversely the concept of enhancement investment to prevent flooding occurring in the first place, funded by a modest sum added to customer bills (£1.81 per bill per year), is a very simple transaction for customers to grasp. It fits with customer views about intervening proactively before problems occur and investing for the future.
- (8) We note that in its response to RFI011A, Ofwat asserts that the £86m programme would be adequately funded via a combination of totex sharing (34.4%) and ODI reward payments. Ofwat's modelling suggests that ODI reward payments would amount to £53.6m over 20 years in NPV terms, against net effective costs of £56.4m, with the majority (£47.99m)⁵ arising from rewards on the Internal Sewer Flooding measure.
- (9) We consider Ofwat's modelling approach to be deeply flawed:
 - Ofwat's model assumes a reward for internal flooding of £7.37m in AMP7, £16.42m in AMP8, and so on amounting to £47.99m over 20 years. This completely overlooks the fact that rewards for internal flooding performance are capped at £4m for AMP7.⁶ It seems reasonable to assume that a form of caps and collars will continue thereafter;
 - even if the cap is ignored, from 2026 onwards Ofwat's model assumes 188 units (incidents) of outperformance for internal flooding.⁷ Our target level for the end of AMP7 (2025) is 177 flooding incidents per year. The expectation is that this target will tighten further from 2026 when reset as part of PR24. Even if our proposed enhancement completely eliminated all flooding risk at all properties in all degrees of storm (which clearly it does not), it is not mathematically possible to deliver 188 units of outperformance against a target of 177 or tighter; and
 - Ofwat's modelling assumptions overlook the key fact that our enhancement is aimed at mitigating increasing flooding risk due to climate change. This implies it is primarily about avoiding a deterioration in performance, not delivering an ODI reward revenue generating improvement in performance.⁸

2.1.3 Do the base and enhancement programmes have overlapping outcomes?

- (10) In the NWL Hearing the CMA raised a concern that delivery of the base and enhancement programmes will each serve to meet both the common and bespoke PCs, meaning it might be possible to "get over the line with respect to the PCs with not actually spending the full allowance".⁹ In those circumstances, the CMA asked "how can we be confident that there is additional expenditure actually being incurred when the outcomes of both types of expenditure, proactive and reactive, seem to go to both the two PCs".¹⁰
- (11) Climate change is now occurring at an increased rate.¹¹ We do not believe that Ofwat's base model accounts for this increased rate of climate change.¹² As such, an allowance to tackle this increase in the numbers of properties that will flood due to climate change is not provided for in the base cost model. We note that not only is flood prevention cheaper than flood remediation, it also avoids stress for customers and is something they clearly value.¹³

12 Reply, para. 122-124: Ofwat's base model is established upon a static statistical model using data more than seven years old from the Flood Estimation Handbook 2013 (FEH13).

⁵ Ofwat FD19 model, tab 'ODI Analysis', cell F63.

⁶ SOC189 Ofwat FD19: Outcomes Performance Commitment Appendix, p.33. ODI outperformance rewards for external sewer flooding are also capped at £7.7m 7 Ofwat FD19 model, tab 'ODI Analysis', row 31)

⁸ Whilst Ofwat's model assumes a reasonable delivery profile for our enhancement, it also assumes that for those properties protected the full risk reduction of 4.2% applies with immediate effect (Ofwat FD19 Model, tab 'ODI Analysis' rows 30 and 31). However the full risk reduction can only apply immediately if the elevated risk due to climate change is present immediately, whereas the reality is that the elevated risk is expected to build gradually over the 5 year period.

⁹ NWL Hearing, p. 102, lines 14-23.

¹⁰ NWL Hearing, p. 103, lines 22-25.

¹¹ Reply, Section 3.4.2.2; SOC278 Wastewater Reduce Flooding Risk for Properties Enhancement Business Case, Section 5.1.

¹³ SOC464 Establishing the Effectiveness of Property Flood Protection, p. 51.

- (12) The base PC looks at the number of sewer flooding incidents during AMP7. Our base programme focuses on addressing properties that have already flooded and are, therefore, a known risk for potential future flooding. Our enhancement programme is focused on reducing risk for properties that have never experienced flooding in the past, but which hydraulic modelling demonstrates will be at risk as a result of climate change and urban creep increases. The bespoke sewer flooding PC expressly focuses on the reduction of risk for the 7,400 properties identified as falling within those future risk categories.
- (13) Our enhancement case addresses the difference between Ofwat's perceived steady rate of increase of hydraulic flooding due to climate change and urban creep and the actual rate of increase as evidenced. This difference is illustrated in Figure 2 below. The orange line shows a divergence from the relative "steady rate" of climate change (shown in blue) and the difference (shown as the hatched area) is the additional areas where properties are at an increased risk. The dashed line shows the intended impact of the enhancement programme.

Figure 2: Graphical Representation of the difference between stationary statistical climate change and non stationary assessment



Source: NWL illustrative graphic

- (14) As noted above, our proposed enhancement programme predominantly comprises catchment-based schemes to enhance hydraulic capacity. Whilst the selection of catchments is focused on capturing the targeted 7,400 properties that have not experienced flooding in the past but which are at increased risk in the future, inevitably there is a possibility that the selected catchments might include some properties on the fringe that have experienced flooding in the past.
- (15) Looking across the catchments covered by the proactive risk reduction schemes that currently comprise our enhancement programme, these catchments also cover 37 properties that account for 110 incidents of historical internal sewer flooding and 45 properties that account for 200 incidents of historical external sewer flooding. This benefit is in addition to the reduction of future flooding risk for 7,400 properties that have not experienced any historic flooding and which are the target for enhancement schemes, so could constitute an 'overlap'.
- (16) The base PC measures the total number of sewer flooding incidents as opposed to the number of properties that have flooded (i.e. a property can flood on more than one occasion

and each instance may count as a separate incident under the PC). Comparing the number of historical flooding incidents at properties within these catchments (310) against the number of properties that are targeted by these schemes (7,400) suggests a potential benefit overlap of 4% (see Table 2).¹⁴ Applying the 4% to the total £86m cost values the overlap for known historical risk within our enhancement scheme catchments at £3.6m.

- (17) To quantify the potential benefit during AMP7 from preventing some of the 7,400 properties from flooding for the first time we have looked at how many of those historical flooding incidents have taken place within the last five years as a proxy for the future. Of the 110 internal flooding incidents, 51% occurred in the last five years, and out of the 200 external flooding incidents 48% occurred in the last five years. That would suggest that we could expect 152 incidents from those 7,400 properties during AMP7. Given that delivery of the enhancement schemes will be spread over years 2-5 of AMP7, the full benefit will only be felt at the end of the period. This means there is no guarantee that all of those 152 flooding incidents will be avoided by virtue of the enhancement programme.
- (18) We acknowledge the importance of ensuring that customers are adequately protected, and the CMA's concern that there is a potential benefit from the enhancement program for the base position in AMP8 and beyond. We therefore propose to double the 4% valuation of historical overlap as a prudent and conservative approach (i.e. £3.6m to reflect overlap from a historic perspective, and an additional £3.6m to reflect future overlap in risk).

	Total	Incidents last 5 years	% relative to 7,400	Historic valuation	Total valuation
Internal Incidents	110	56 (50.9%)	1.49%	£1,278,378.38	£2,556,756.76
External incidents	200	95 (47.5%)	2.70%	£2,324,324.32	£4,648,648.65
Internal properties	37		0.50%	£430,000.00	£860,000.00
External properties	45		0.61%	£522,972.97	£1,045,945.95
Internal and External incidents	310		4.18%	£3,602,702.70	£7,205,405.41
Internal and External properties	82		1.11%	£952,972.97	£1,905,945.95

Table 2: Calculation of benefit from potential overlap between base and enhancement schemes

Source: NWL analysis

(19) Whilst this calculation results in what is likely to be a significant over-estimate of the actual overlap, in order to maintain the outcomes for customers whilst giving them a greater level of protection, we offer that the funding for the enhancement programme be reduced by £7.2m to £78.8m.

2.1.4 Protecting the interests of our customers

- (20) In BP19 the penalty for failure to deliver on the target of reducing the sewer flooding risk banding for 7,400 properties was £100/property based on customer valuation evidence.
- (21) If the CMA is concerned about the level of protection this offers our customers, an alternative would be to mirror the approach used for our water enhancements (e.g. lead replacement and smart metering). In this scenario, we would adopt the methodology set out by Ofwat which splits the customer protection between an underperformance penalty and totex cost sharing rates.

¹⁴ As these are properties that have not flooded previously and they are being targeted proactively, 1 flooding incident per property is a reasonable proxy.

- (22) According to this method, if the enhancement results in no activity, then the full funding would be returned to the customers (£86m, or £78.8m as per our proposal above, would be returned to customers via the two streams). If we fail to deliver the target of risk reduction for 7,400 properties, the funding would be returned to customers via a unit rate per property (e.g. £11,622 for 1/7,400 of £86m).
- (23) Using Ofwat's methodology, we would apply the customer protection as per Table 3 below:

Enhancement	Funding	PC Target	Total unit customer return	Penalty per unit	Total Penalty £m	% of funding	Totex Sharing return per unit of underperformance	% of funding
Proactive risk reduction	£86m	7400	£11,621.62	=£11,621.62 x (1 – X%)	£86m x (1 – X%)	1-X%	=£11,621.62 x X%	X%

Table 3: Customer protection – bespoke ODI¹⁵

Source: NWL analysis

(24) Applying Ofwat's current totex sharing rates and methodology, customer funding would be returned as per the example below:

Table 4: Protecting customers - example of ODI penalty¹⁶

Enhancement	Funding	PC Target	Total unit customer return	Penalty per unit	Total Penalty £m	% of funding	Totex Sharing return per unit of underperformance	% of funding
Proactive risk					£29,240,			
reduction	£86m	7400	£11,621.62	£3,951.35	000	34%	£7,670.27	66%
Cauraa N								

Source: NWL analysis

- (25) Under this alternative scenario, if we do not undertake the enhancement scheme we would return the full cost allowance. A penalty of £29.24m would apply, with the balance of £56.76m returned via the totex sharing methodology outlined by Ofwat. If we underperform against the target, we would return the pro-rata value of customer funding based on our estimated unit costs. For each unit of underperformance, we therefore return £11,621.62 (or 1/7400th of the funding), via a penalty of £3,951.35 and a totex sharing return of £7,620.27. We propose that both the penalty and the totex sharing are applied against AMP7 performance as part of the PR24 reconciliation process.
- (26) If the enhancement claim is rejected, in order to address the problems with asymmetric cost sharing rates, the investment should not be reflected in the calculation of the cost sharing rates.¹⁷ Similarly the bespoke PC should be removed.
- (27) Finally, the outcomes appendix to our FD contains an **annual delivery profile** to be used for annual progress reporting purposes (noting that the financial ODI only applies to the total delivered at the end of the 5 year AMP period).¹⁸ For completeness **this should be amended to reflect the fact that if funded in the CMA's redetermination, delivery of the 7,400 will be split equally over 4 years (year 2 – year 5) as opposed to 5 years.**

2.1.5 Conclusions

(28) We have demonstrated that our sewer flooding enhancement scheme cannot be funded through ODI outperformance rewards. We have acknowledged the potential for a small degree of overlap between the requested enhancement funding and any potential ODI

¹⁵ In practice, the CMA should use the sharing rate as reassessed in their Determination. We have used X% to illustrate.

¹⁶ We have used the PR19 FD totex underperformance sharing rate of 66% for this table.

¹⁷ SoC, Section 7.5.4.

¹⁸ SOC189 Ofwat FD19: Outcomes Performance Commitment Appendix, p.78

revenue and adjusted our funding request accordingly to avoid any risk of customers paying twice.

- (29) In our revised position, as set out above, in order to protect customers we have adopted a very broad definition of the potential overlap between enhancement expenditure and base costs and service. We think this concept needs further thought and ought to be clarified in the methodology for PR24. Specifically, surely all enhancement schemes are expected to deliver some form of future benefit to customer service levels, be it a reduced risk of interruptions, improved water quality and so on? Indeed if an enhancement scheme was proposed which had no demonstrable link to future service levels, then one would have to strongly question the case for such a scheme.
- (30) The concept of using ODI rewards as an alternative for enhancement funding, which Ofwat has introduced, also needs careful consideration. Taken to its logical conclusion this might suggest that all activity could be funded by base allowance and ODI revenue with no need for additional enhancement allowances.

2.2 ESSEX RESILIENCE SCHEME

2.2.1 Risk assessment

- (31) In the hearing the CMA indicated that it would be keen to see a "*credible illustration of the combination of risks*"¹⁹ that would be reduced by the Essex Resilience Scheme. Ofwat also queried the lack of any modelling to support our enhancement case.²⁰
- (32) Unlike the WRMP framework for assessing the supply demand balance, there is no equivalent for the assessment of investment to secure long-term resilience.
- (33) Our Essex Resilience Scheme proposal was prompted by the events of 2016 and 2018 which clearly demonstrated a vulnerability in our system that, if left unaddressed, could at some point in the future result in a significant loss of service in our Essex region. In particular, that vulnerability arose from a variety of low probability/high impact events occurring in combination on two separate occasions. The Essex Resilience Scheme will address a multiplicity of risks to supply, at a cost of just 37p on customer bills, and has the clear support of those customers.
- (34) We did not undertake detailed scenario modelling to further support that enhancement case. In part this recognised the potential difficulties associated with quantitative risk assessment modelling for the identified vulnerability in the system:
 - it would require a significant degree of conjecture about which events might occur simultaneously, noting that not all events might even be capable of being predicted (e.g. the current pandemic and associated lockdown);²¹
 - full and robust quantitative risk assessment using, for example, Monte Carlo analysis requires there to be sufficient data for each risk in order to inform the process. In the case of some of the risks, and the combination thereof, that might potentially require mitigation through the Essex Resilience Scheme, sufficient data does not exist. For example, we use the Climate Projections 2018 (CP18) in our water resources planning quantitative assessments. However, similar data does not exist for the impacts of climate change on water quality parameters and yet it is likely to be adversely affected as climate change increases; and

¹⁹ NWL Hearing, p. 96, lines 15-16.

²⁰ Ofwat Hearing Day Two p. 116 lines 14-18.

²¹ NWL Hearing, p. 86, lines 3-13.

• in circumstances where investment is required to address problems, such as climate change, which build up over a long time horizon but might precipitate sudden costs, it has been recognised that "the standard cost/benefit test can be almost as myopic as ordinary citizens and cannot deal with some fundamental aspects of the problem".²²

(35) In order to assist with the CMA's redetermination we have included details and analysis of some of the scenarios that the Essex Resilience Scheme will mitigate.

- (36) Our Water Resources Management Plan 2019 (WRMP19) demonstrates that we are able to meet customer demand in our Essex Water Resource Zone with climate change and during a drought with a return period of 1 in 200 years.²³ Our drought resilience and climate change assessments were undertaken in line with EA guidelines and the WRMP19 was approved by Defra.
- (37) The supply and demand assessments in our WRMP19 were largely completed in 2017/18. Since then, as presented at our CMA Site Visit and subsequent hearing, further risks have emerged including:
 - a continued deterioration in the quality of the river water that supplies our Langham WTWs (nitrates and algae) and our Langford WTWs (nitrates and cryptosporidium);
 - what appears to be more rapid climate change leading to wet weather followed by intense periods of dry and hot weather with very high un-forecast customer demand (2018 and 2020); and
 - increased customer demand due to Covid-19.
- (38) For our reservoirs we identify emergency storage levels and dead storage levels:
 - emergency storage demarcates the point at which we must implement our emergency plan. We must never plan to use emergency storage;²⁴ and
 - dead storage is the water which we cannot use, partly because of physically not being able to access it (e.g. reservoir ponding), but mainly because the quality of the water will be very poor and untreatable in terms of algae and sediment.
- (39) In the context of Hanningfield reservoir, if it draws down to emergency storage level that means that there is 30 days of usable water left before it draws down to dead storage level. At that point Hanningfield WTW would no longer be able to produce water which would directly affect over 350,000 people (ranging from low pressure to nil supply) but indirectly affecting supplies of almost 1 million people. None of our drought plan or emergency plan actions would mitigate this (see Section 2.2.2 below).
- (40) It is also important to note that emergency storage reservoir level is based on our assessment of what Hanningfield reservoir's 'dead storage' is. An assessment of dead storage is site specific and can only be based on best available but limited water quality data (limited because we only know what the water quality is at slightly higher levels in a specific year) and expert judgement. Consequently, the dead storage level could be higher than we allow for in our WRMP19, which would mean that the emergency storage level could also be at a higher level than we have allowed for.
- (41) We have modelled two scenarios (one with three variants) to demonstrate the impact of these risks.

²² The Limits of Cost/Benefit Analysis When Disasters Loom, Susan Rose-Ackerman 6 June 2016 https://onlinelibrary.wiley.com/doi/full/10.1111/1758-5899.12279 23 SOC515 E&S Water Resources Management Plan 2019

²⁴ In identifying base water available for use the deployable output is defined as, inter alia, "supply without storage entering the emergency storage zone": Water Resources Planning Guideline, version 3.0 February 2003.

Scenario	Detail of scenario	Commentary			
no.					
Scenario 1 (see Figure 3).	 Dry year with Covid-19 demand: without Essex Resilience Scheme (see the green line); and with Essex Resilience Scheme (see the orange 	Without the Essex Resilience Scheme, Hanningfield reservoir storage draws down to the emergency storage level.			
	line). We have uplifted demand by 9% between April and September reflecting the increase we have seen	The hot and dry weather may last longer than the assumptions made in our scenario.			
	this year following Covid-19 lockdown. From September onwards, we have uplifted demand by 4% to reflect children returning to school and that many of our customers who normally commute into London are likely to continue to work from home. Consequently, their daytime water demand will be met by us and not Thames Water.	Whilst the modelled Hanningfield storage levels do not drop below the emergency storage levels in the scenarios without the Essex Resilience Scheme, the 'do nothing' option is unacceptable from a resilience perspective, particularly when seen in the context of the EA guidance around use of that emergency storage.			
Scenario 2 (see Figure 4)	2018 Demand with 2016 Water Quality Outage plus Covid-19 Demand Scenario 2a (see the green line): Hanningfield	All three versions of Scenario 2 demonstrate that even with Layer DAF operating, levels in Hanningfield reservoir would still			
	 2016 demand and river flows; Layer WTWs operating at its full deployable output with the proposed Layer DAF operating; 2016 outage at all other WTWs (i.e. Algal WQ outage removed for Layer WTWs). 	have dropped. Notably, in scenario 2c, the levels would drop below the emergency storage level. This demonstrates that small increases in demond (less then			
	Scenario 2b (see the orange line): Hanningfield reservoir storage with:	10%), in this case due to the combination of Covid-19 and dry			
	 2016 demand uplifted to a dry year (2018); Layer WTWs operating at its full deployable output with the proposed Layer DAF operating; 2016 outage at all other WTWs (i.e. Algal WQ outage removed for Layer WTWs). 	weather, can have a significant impact on reservoir storage.			
	Scenario 2c (see the dark blue line): Hanningfield reservoir storage with:				
	 2016 demand uplifted to a dry year (2018) and uplifted again to take account of the increased demand we are seeing due to Covid-19; Layer WTWs operating at its deployable output on the assumption that the Layer DAF plant is operational; 2016 outage at all other WTWs 				

Table 5: Essex Resilience Scenarios

Figure 3: Scenario 1 - Dry Year (2018) with Covid-19 Demand (with and without the Essex Resilience Scheme)



Source: NWL analysis





(42) There are other operational risks that have not been allowed for in these scenarios but which will be mitigated by this scheme. These are presented in Annex 1: Water Supply Risks.²⁵

2.2.2 Bringing in water from elsewhere

- (43) At the hearing the CMA questioned whether there might be alternative options to mitigate the vulnerabilities in this region, including considerations about potentially bringing in water from elsewhere.
- (44) None of our drought plan or emergency plan actions would mitigate this as the numbers involved are simply too high. Road tankering would not be feasible from a practical or logistical perspective given the volumes involved. Equally we would be unable to supply bottled water to more than 75,000 people. Consequently, this could lead to a major public health incident.
- (45) Various alternative supply options were considered, but discounted, as potential resource management mitigation in the Essex Water Resource Zone in the context of the planning process for Abberton reservoir. These included desalination, tankering options and temporary bulk transfers. In that planning context, options that could be developed, if remotely practical, but which are unlikely to be realised at present due to technical complexity, environmental concern and/or high cost and/or problems of promotion are referred to as 'esoteric options'. Further details of options that might be looked at as alternatives to the Essex Resilience Scheme are set out in Annex 2: Alternative Supply Options and illustrate the practical and financial implications of utilising these alternative water sources.

2.2.3 Conclusions

- (46) We strongly believe that the Essex Resilience Scheme is required to mitigate against the low likelihood but high consequence risks that we covered in our hearing, but also against what now seems like higher likelihood events such as increased demand due to Covid-19.
- (47) We believe that in line with Ofwat's own approach to resilience that we should plan on the basis that multiple risks could coincide. We show through the use of scenario modelling, under plausible scenarios, that Hanningfield Reservoir can be drawn down into emergency storage which could result in the loss of mains water to supply to our customers. Supplies could be affected for days or even weeks. This would be a significant failure not only in terms of water quantity, but also water quality, a view firmly held by our regulator, the DWI. Safe and resilient water supplies are always of upmost importance for public health and even more so now with hygiene being critical in the fight against Covid-19.

2.3 WINEP – P-REMOVAL

(48) In its hearing Ofwat made various comments with respect to our forecast costs associated with P-removal implying that they are "overestimated" when looked at relative to Ofwat's benchmark costs.²⁶ The disconnect between our forecast costs and Ofwat's benchmark costs is not an indicator of inefficiency in our costs, but instead arises from the flaws in Ofwat's models which fail to account for key drivers of our costs (e.g. the number of sites requiring first time P-removal interventions; the limited number of sites with a no deterioration driver, etc.) and its failure to utilise the third model in its assessment of our costs despite the strong similarities of our circumstances with those of Yorkshire Water.²⁷

²⁵ For the avoidance of doubt, whilst Annex 1 mirrors the approach of a risk register, this is not an extract from our official company risk register.

²⁶ Ofwat Hearing Day One, p. 106 lines 2-6; p. 118 lines 12-14.

²⁷ See SoC Section 5.7.3; Reply Section 4.7.2.3;

3 COSTS AND OUTCOMES

3.1 AMP 6 OUTTURN INFORMATION

- (49) Ofwat has consistently asserted that there is systemic outperformance in the water sector.²⁸ In its hearing, Ofwat suggested that PR14 has "*resulted in frankly an embarrassing set of outperformance results*". ²⁹ The CMA's questions also indicated a perception of outperformance during PR14.³⁰
- (50) Complete outturn data is now available for AMP6.³¹ The CMA's comments on totex outperformance reflect Ofwat's early analysis of AMP6 based on the partial set of data available at the time. Ofwat itself recognised that "when we did the IAP we had three out of five years of data, at final determination we had four out of five years data. We have received the fifth one today. So it certainly was not possible to have the five years of data at the time we made our initial assessments."³² Ofwat had to base its assessment of outperformance on incomplete data. Analysis of the full AMP 6 data set demonstrates that the assertion of systemic outperformance is factually incorrect.
- (51) Analysis of the AMP6 outturn data confirms that the **PR14 control was well calibrated, with overall returns very close to base levels and an equal number of companies underperforming to outperforming** (see Annex 3: AMP6 Outturn Information):³³
 - the industry, as a whole, overspent its PR14 wholesale totex by 1.1% (see Table 6);³⁴
 - a similar number of companies underperformed on RORE over AMP6 as outperformed (see Annex 3 Section 1.2);³⁵ and
 - data for 2019/20 further shows that 2018/19 was not an atypical year, with wholesale totex falling by 0.2% compared to 2018/19.³⁶

RFI011 Q24 Wholesale (12/13p)	2015-20	2015-20	2015-20	2015-20
Industry	£m	£m	£m	%
	Actual	Allowed	Difference	Difference
Water cumulative	20,966	19,443	1,523	7.8%
Wastewater cumulative	18,962	20,043	-1,081	-5.4%
Total Wholesale	39,929	39,486	443	1.1%

Table 6: Analysis of 2015-20 industry wholesale overspend relative to FD14

Source: Ofwat Response to RFI011 Q.24 Spreadsheet

(52) As part of its recent draft determinations for transmission and gas distribution, Ofgem has also considered the issue of historical outperformance. It collected data on recent price controls and found markedly divergent evidence for energy networks and water.³⁷ For the energy networks sectors its finds outperformance on totex of between 7% and 18%

²⁸ In its referral to the CMA Ofwat stated: "We know that most companies are outperforming the PR14 settlement, indicating that the level of catch-up challenge is achievable". (Ofwat - Reference of the FD19: Cross-cutting issues, March 2020, SOC243, para. 3.5 p. 7.)

²⁹ Ofwat Hearing Day One, p. 34 lines 9-10.

³⁰ Ofwat Hearing Day One, p. 45 lines 19-21.

³¹ NWL Hearing, p. 138, lines 1-9.

³² Ofwat Hearing Day One, p. 128 lines 21-24

³³ In our SoC we submitted that Economic Insight analysed evidence on outperformance in the water sector and found no evidence of "substantial, systematic and persistent historical outperformance" (Economic Insight, Top-down analysis of the financeability of the notionally efficient firm: A follow on report for Anglian Water; Northumbrian Water and Yorkshire Water, "Economic Insight 2020", 20 March 2020, SOC413, p.6). Our Reply reiterated that the scale of Ofwat's adjustments towards a 'step change' is unjustified and that, analysis of the RoCE, which we demonstrate to be the most appropriate metric, shows that returns have been in line with allowances, meaning that there is no evidence of persistent historical outperformance in the sector (Reply Section 4.3).

³⁴ This was confirmed by Ofwat in its response to RFI011 (question 24)

³⁵ This evidence contradicts the assertion by Ofwat in its hearing that "Companies are earning about 25 per cent more than the allowed return on equity at both PR14 and PR09, so there is a consistent outperformance on that" (Ofwat Hearing Day Two, p. 153 line 25 – p. 154 line 2.

³⁶ Ofwat response to RFI011 (Q.24) adjusted to CPIH real terms (it is a 1% fall in RPI real terms terms).

³⁷ Ofgem, Draft Determination – AR ER database, https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_technical_annexes_part_one.zip

depending on which sector is examined. By contrast, for water the equivalent figure is 3% historical totex outperformance when considering data from PR99 to PR14 (i.e. 4 separate AMPs). However, the results are heavily driven by PR09 (where the factors driving outperformance have been addressed) – when this period is excluded, the data shows and average underperformance of totex allowances by 2%. This confirms our own analysis of there being no systemic outperformance.

- (53) There is thus no evidence that a further step change from the PR14 approach is required. This is particularly apposite given that the PR19 debt indexation mechanism removes the main source of individual company outperformance over the PR14 control. In addition, Covid-19 is resulting in a very severe recession and pressures on productivity further amplifying the lack of justification for a change in approach. If a similar challenge were applied at PR19 to PR14 then there is clearly less chance that companies would be able to meet it.
- (54) In justifying moving beyond upper quartile targets in FD19, Ofwat described the 2018-19 year as a "high cost year".³⁸ However, with modelled base costs increasing by 1.8% in 2019/20, it is clear that 2018/19 is not in fact atypical as it is consistent with other data at the end of AMP6. If anything, 2015/16 was the atypical year in AMP6 with low levels of expenditure compared to the rest of the period.
- (55) Figure 5 and Figure 6 below update the analysis presented in our Reply that plotted base modelled costs for the sector over the period modelled by Ofwat. When the final year of AMP6 data is added it further emphasises that 2018/19 was not abnormal. This reinforces our arguments that the tightening of the efficiency challenge beyond the upper quartile at FD19 was not justified and that the gap between company forecasts and the modelled allowances narrowed only because of a poor incentive to underrepresent costs driven by asymmetric cost sharing rates.





Source: Ofwat FD feeder model and data from 2019/20 Annual Performance Reports

³⁸ SOC417 PR19 FD Securing Cost Efficiency Technical Appendix, p.31.



Figure 6: Base plus modelled costs (£m, 2017/18 prices) – wholesale wastewater

Source: Ofwat FD feeder model and data from 2019/20 Annual Performance Reports

(56) To the extent, therefore, Ofwat has justified its FD19 interventions which increase the stretch in the overall package by reference to the assumption of systemic outperformance, this premise is flawed and should be reconsidered by the CMA. Instead, we consider that the evidence clearly shows that the PR14 control was well calibrated with balanced performance across the sector and so there is no reasonable justification whatsoever for more stretch - this just puts a strain on financeability and results in that duty not being met. The CMA should go back to the approach adopted in the PR14 control and consistent with our original business plan, for example adopting an upper quartile challenge, a comparable frontier shift estimate applied to modelled costs only and allowing reasonable RPEs based on the inflation change (RPI to CPIH) between the two controls.

3.2 REAL PRICE EFFECTS AND FRONTIER SHIFT

- (57) In the NWL Hearing the CMA raised various questions in relation to the treatment of electricity costs. These are addressed below, alongside one question arising from Yorkshire Water's hearing.
- (58) Our overall view remains that the CMA needs to start afresh on both RPEs and frontier shift, particularly given the impacts of Covid-19. The impact of the lockdown and ongoing restrictions on working practices has negatively affected achievable levels of productivity. The current FD assumption of 1.1% throughout the AMP6 period now appears to challenging while the Covid-19 restrictions are in place.
- (59) In addition, the impact across the economy has not been uniform with some sectors being significantly affected. The water sector has actually seen demand increase whereas many sectors have seen demand and output fall dramatically. This has had knock on impacts for wages and we are concerned that the ASHE manufacturing wage index chosen by Ofwat for the labour RPE reconciliation is not longer fit for purpose. Figure 7 below shows the most recent information available from the ONS on average weekly earnings.

Figure 7: Annual growth in Great Britain nominal average weekly earnings excluding bonuses by sector, seasonally adjusted



Source: Office for National Statistics - Monthly Wages and Salaries Survey³⁹

(60) This data shows manufacturing wages falling by 2% in nominal terms in the 12 months to June 2020. The pressures leading to that fall have not been replicated in the water sector and it would not be reasonable to assume that we can match changes in wages seen in manufacturing during this period. As set out above, we think the CMA needs to start afresh in this area as historical relationships and trends in the data are not applicable to the current period affected by Covid-19.

3.2.1 Since electricity costs are reflected in CPIH, do they require an RPE?⁴⁰

- (61) Yes. We indicated in our SoC that: i) electricity prices are expected to rise significantly more rapidly than CPIH; and ii) because electricity costs represent a disproportionate quantum of our total cost base, the contribution of electricity price inflation to our cost base (6%) can expected to be significantly greater than its contribution to CPIH (1.5%, based on the latest weights applied by the ONS to electricity when calculating CPIH).⁴¹
- (62) Europe Economics made an erroneous comparison in its FD19 report instead of comparing electricity between totex and CPIH, it compared electricity costs in totex with the energy share of CPIH (which includes gas, other fuels and lubricants) which were 5.2% of CPIH (using 2018 weights).⁴² This comparison is misleading for two main reasons:
 - there is no strong relationship between the price of oil (which is linked to the gas price and other fuel costs) and electricity costs since 2010.⁴³ These additional items in the CPIH basket therefore do not represent an additional set of costs that are another way of capturing electricity price changes; and
 - electricity prices are different to these other fuel prices. Electricity prices include the costs of decarbonising the electricity system whereas other fuel costs do not. The key driver of increasing electricity prices is therefore not reflected in these other fuel prices.

 $^{39\} https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/averageweek/yearningsingreatbritain/august2020$

⁴⁰ NWL Hearing, p. 54, lines 8-19.

⁴¹ SOC, section 5.5.3.3 and 5.5.4.].

⁴² SOC396 Real Price Effects and Frontier Shift, p.37.

⁴³ Reply, Section 4.5.2.3

3.2.2 Are falling renewable generation costs consistent with rising electricity prices?⁴⁴

- (63) The levelised costs of building new renewable generation have fallen over the last decade but this does not mean that we would expect the impact to be a fall in electricity prices.
- (64) The electricity bill is made of three main components: the commodity charge (wholesale price of electricity), the government policy costs and charges to promote and facilitate decarbonisation; and network transportation and system operation costs. These charges make up roughly a third of the bill each for a business customer.⁴⁵
- (65) The main driver of increases in electricity bills over the last 10 years has been in the two noncommodity charge components. The decarbonisation of the electricity system and increased renewables penetration increases bills to users through two main routes a) the resulting increase in government policy costs and charges, and b) indirect costs borne by users (increased network and system operation charges).
- (66) Government policy charges cover the costs of support to renewable generators (renewables obligations certificates, feed in tariffs and contracts for difference) and taxation to promote decarbonation (climate change levy). These have increased significantly, e.g. "the government has increased its tax levies ten-fold since 2008 from 0.456p/kWh to 4.332p/kWh in 2020".⁴⁶ We see no reason to expect these increases to stop as the government will need to encourage further renewable generation onto the system in order to deliver net zero. At 4.3p/kWh (43/MWh) this is roughly equivalent to typical wholesale prices we have seen in recent years and demonstrates how these costs have grown and have dominated changes in the wholesale price that have been occurred since 2010.
- (67) There are also significant additional indirect costs of managing the further integration of increased renewable generation onto the electricity system due to their intermittency and location. These costs were assessed by the the Committee on Climate Change (CCC) in its 2019 report on net zero.⁴⁷ In particular it identified additional costs from:
 - **peak demand requirements**: costs of ensuring there is sufficient firm capacity to meet periods of high demand when renewables make a limited contribution;
 - **using available generation**: high penetrations of intermittent renewables will often provide output in excess of demand or system capabilities resulting in wasted output or constraint costs which must be paid by users;
 - **balancing requirements**: to balance the system and maintain grid frequency there will need to be additional reserve and response services procured to ensure reliable system operation; and
 - **networks**: network upgrades will be required to ensure the bulk transfer of power from renewable generation in new locations (offshore wind) to demand. Network reinforcements to facilitate this will be paid by users of the system.
- (68) The CCC concluded that "The available evidence suggests integration costs could be around $\pounds 10-25/MWh$ for annual penetrations of up to 50-65% renewables, but could increase further at higher penetrations."⁴⁸
- (69) Through a combination of these direct costs of renewables (e.g. increased CfD costs) and indirect costs of their integration we expect continued upward pressures on electricity prices.

46 Ibid

⁴⁴ NWL Hearing, p.56 line 18 to p.57 line 8.

⁴⁵ UK Business Electricity Bill Breakdown, https://www.businesselectricityprices.org.uk/breakdown-electricity-bill/

⁴⁷ CCC (2019), "Net Zero - Technical Annex: Integrating variable renewables into the UK electricity system", page 4 48 lbid, p.8

3.2.3 Why are electricity prices forecast to increase despite low or falling oil prices (implied by the cut to BP's dividend)?⁴⁹

- (70) The wholesale price of electricity now plays a much smaller role in determining final electricity prices to businesses due to the factors set out above. Correlation analysis which shows the increasing impact of non-commodity costs on electricity prices confirms this.⁵⁰
- (71) We recognise that wholesale prices have fallen recently following demand falls triggered by Covid-19. The future however remains uncertain and electricity prices can change rapidly. For example, between August and November 2016 the wholesale price of electricity increased from £37/MWh to £68/MWh.⁵¹ We therefore to not think it would be appropriate to take a short term view based on the current spot price.
- (72) BEIS's electricity price forecasts, which show above CPIH increases, take into account the government's policy framework and reinforce our concerns that there will be upward pressures in future and we continue to believe an RPE adjustment is appropriate.⁵² Recognising future uncertainty about electricity prices, however, a reconciliation mechanism based on the BEIS industrial electricity price index or equivalent would ensure the cost pressures we face are reflected in the allowances we receive and customers are protected.

3.2.4 Is it reasonable to assume that NWL could mitigate the impact of any increase in electricity prices that might materialise?⁵³

- (73) The main routes we have at our disposal to manage out energy costs are through time of use electricity management and through greater treatment of sludge to produce energy. We do not think there are further gains to be made on either of these fronts:
 - we already employ the Aquadapt system to manage our time of use energy costs at our largest sites but the savings from this system are likely to reduce due to the changes to the transmission charging methodology where the demand residual will no longer be levied on consumption as peak.⁵⁴ This makes our electricity costs less controllable in the future than they were in the past; and
 - we already treat 100% of our sludge.⁵⁵ We therefore have no further gains we can make on this front (unlike the rest of the industry).
- (74) These factors combined mean that we are exposed to changes in electricity costs and have limited opportunity to control them beyond a normal frontier shift type assumption.

3.2.5 If RPE adjustments were extended beyond just labour, might this move us closer to cost-plus style regulation?⁵⁶

(75) Building on the response provided by Yorkshire Water in its hearing, we do not consider that the extension of RPE adjustments would lead to cost-plus style regulation. As long as the indexation or allowance is specified ex ante (i.e. it is not a cost pass through of actual spend), water companies have the same incentives to manage costs efficiently. Just because energy or chemicals might be indexed by something other than CPI does not change any of the

⁴⁹ NWL Hearing, p. 55 line 18 to p. 56 line 17.

⁵⁰ July Reply, Section 2.2.3

⁵¹ https://www.ofgem.gov.uk/data-portal/electricity-prices-day-ahead-baseload-contracts-monthly-average-gb

⁵² SOC, section 5.5.3.1.

⁵³ NWL Hearing, p. 54, lines 8-11.

⁵⁴ See Reply para 267

⁵⁵ Reply, 4.5.2.2].

⁵⁶ Yorkshire Water Hearing, p. 56 lines 8-10.

incentive properties or mark a shift towards cost plus, as water companies would not be able to recover whatever they had spent plus a margin.

3.3 VALUATION OF 12-HOUR SUPPLY INTERRUPTION

- (76) In the context of the Essex Resilience Scheme the CMA noted that the estimated value of a 12-hour supply interruption at £6,599 by customers might "appear unreasonably high" when set against the potential cost of running bulk water tankers to supply customers.⁵⁷
- (77) The purpose for which this valuation was derived informs how it should be used. Seen in its proper context, it is clear that a comparison to the cost of alternative supply is not valid:
 - as a starting point, the valuation is not a proxy for: the financial impact of such an interruption on customers; compensation paid to individual customers; or the cost of providing an alternative supply during that period;
 - this valuation was calculated to calibrate performance incentives to both penalise the company for failure to meet a PC and to incentivise outperformance. Any incentives that are thus triggered are applied to average bills for all customers;
 - on this basis, customers were asked to what extent they would support (by way of bill increases/reduced bill reductions) progress from current service levels on this metric to a leading position (a reduction of 437 incidents per annum). Customers on average indicated support which equated to £1.48 on the bill, which equates to £0.003 per customer bill per incident, or £6,599 per incident across all customers;
 - a significantly smaller incentive would lack sufficient strength for the intended purpose (i.e. any resulting penalty would not be sufficiently punitive to dis-incentivise under performance); and
 - the figure quoted is consistent with those used to incentivise other aspects of performance in previous periods, for example an £11k valuation attached to taste and odour complaints in the AMP6 period.

3.4 COST SHARING RATE

- (78) In the NWL Hearing we explained that Ofwat's approach to cost sharing incentivises companies to unduly reduce their cost submissions and that therefore comparisons to these cost levels are misleading.⁵⁸ Conversely, in its hearing Ofwat stated that there is no benefit to companies in submitting business plans that reduce costs below "*the efficient level of costs which Ofwat allows*".⁵⁹ This is not the case.⁶⁰ Instead, **the data clearly demonstrates that companies do get an improved outperformance cost sharing rate if they submit a business plan forecast at 80% of Ofwat's assessment**. This is because cost allowances are set relative to a historical industry benchmark, rather than an individual company's own submitted level of forecast costs.
- (79) To further demonstrate our argument that the approach to cost sharing has unduly influenced business plan submissions we have conducted analysis of the level of stretch included in the PR14 and PR19 business plans compared to actual expenditure in the previous AMP. This is now possible with the final year of AMP6 data becoming available. The findings are set out in Table 7 below.

⁵⁷ NWL Hearing, p.94, lines 20-23.

⁵⁸ NWL Hearing, p.42 line 1 to p.45 line 20.

⁵⁹ Ofwat Hearing Day One, p. 41 lines 14-22.

⁶⁰ See SoC Section 6.4.2 and Figure 37; Reply Sections 4.4.2.2 and 5.3.2.1.

Table 7: Stretch in PR14 and PR19 final business plans vs expenditure in the previous AMP (base costs)

		PR14	PR19
	Actual expenditure in the previous AMP	35,522 (AMP5)	40,083 (AMP6)
Water & wastewater base costs (£m,	Final BP base costs forecasts	36,866	37,568
2017/18 prices)	Stretch (%)	-4%	6%

Source: Ofwat's RFI011 Q18 response, PR14 feeder models, APR data for 2010/11 and 2019-20, Ofwat FD19 Securing cost efficiency technical appendix

(80) This shows a dramatic change in the level of stretch that companies included in their PR14 vs PR19 business plans. At PR14 companies were forecasting to spend 4% more than in AMP5, whereas at PR19 companies were forecasting a 6% fall in base spend from AMP6 levels. Given the stretch in performance commitments and growth in networks it is questionable how credible this is. This is a 10 percentage point swing between PR14 and PR19 which we consider to be consistent with the cost sharing mechanism promoting the submission of forecasts that go beyond the efficient/feasible level.

3.5 RISK ALLOCATION

- (81) At the hearing we were asked about risk allocation and whether the risk transfer was derived from future debt indexation or tax reconciliation that was offsetting any risk increase from the challenge from totex and ODIs.⁶¹ We note that Ofwat also referred to potential benefits to companies from transfers of risk such as "the cost of interest mechanism, the costs passthrough mechanisms for water extraction charges".⁶²
- (82) The level of 'stretch' on the building blocks, such as totex and ODIs is considerably larger than the likely impact from the reconciliation mechanisms identified by Ofwat, e.g. on the cost of new debt:
 - using Ofwat's cost of new debt reconciliation model, if interest rates increased by 0.2% each year until 2025 (i.e. by 1% by the end of AMP7) relative to the forecasted allowed cost of new debt, this would imply a true-up of c.£6.5m. Using Ofwat's tax reconciliation model, specifically assuming a 19% tax rate instead of the current assumed 17% tax rate⁶³, implies a true-up of c.£11m. In comparison, the impact of the stretch on totex and ODIs in our SoC, implied additional costs of c.£190m on totex⁶⁴ and £11m £22m on ODIs;⁶⁵ and
 - this is illustrated by our RoRE ranges,⁶⁶ the P10 and P90 levels for financing (of 0.03% and 0.01% respectively), are considerably lower than the equivalent combined numbers for totex and ODIs of -3.85% and 2.13%.⁶⁷ In addition, the cost of debt reconciliation mechanism is symmetric and would not affect the overall asymmetry of the package.
- (83) Ofwat has introduced a pass-through mechanism on the cost of new debt, a factor which is largely outside of management control. It argues that such risk transfers provide potential benefits to companies. While items that are outside of management control should have a pass-through mechanism, Ofwat, however, needs to assess the overall impact of all changes

- 64 SoC, Table 34. (£42.3m for water and £148.4m for wastewater).
- 65 Reply to Ofwat, para.513, Table 26.

⁶¹ NWL Hearing, p. 136 line 17 to p. 137 line 5.

⁶² Ofwat, Day 2, page 7, line 17 - 25

⁶³ See SoC, para. 913 – further cuts to corporation tax would not take place, and the government would retain the 19% tax rate.

⁶⁶ https://www.ofwat.gov.uk/wp-content/uploads/2019/12/PR19-final-determinations-Northumbrian-Water-final-determination.pdf, Table 5.1, page 72.

⁶⁷ We have already made several arguments why the totex reconciliation mechanism would not be an effective mitigant for addressing financeability concerns (NWL SoC, para. 1127)

to the price control (including the stretch on ODIs and totex) in order to ensure that package as a whole works and is reasonable.

(84) Additionally, Moody's credit opinion which placed us on review for downgrade largely took into account factors underpinning FD19 such as the significant cut in allowed returns, and challenges to totex and performance targets.⁶⁸

3.6 ODI RORE RANGES

- (85) During the NWL Hearing, it was suggested that we would be given the opportunity to discuss RORE ranges but, unfortunately, that opportunity didn't arise.⁶⁹ We have therefore summarised our position on this issue below.
- (86) The Ofwat ODI RORE ranges presented are misleading and should not be given weight by the CMA. Ofwat's analysis indicates the RORE range on ODIs for example is symmetrical, despite there being significant asymmetry in the calibration of caps and collars and penalty and reward rates. The approach used by Ofwat to adjust the company specific P10 and P90 ODI values on RORE is judgement based, arbitrary and does not reflect a robust estimate of the potential outcomes across ODIs.⁷⁰ Specifically, Ofwat applies a 70% scaling factor to the company P10 ODI value and 90% to the company P90 ODI value - effectively the upside and downside of the ranges are reduced but the downside is reduced much more than the upside - which overall makes the ODI range look more symmetric. Ofwat argues that the P90 scaling factor should be higher to correct for the likely pessimism in company estimates, but this is not supported by any risk analysis or modelling and the values used are arbitrary. The adjustment for P90 company 'pessimism' also appears to ignore the step change in performance implied by PR19.⁷¹
- (87) The P50 assumes no out- or under-performance, i.e. no penalty or reward. However the targets set by Ofwat are very challenging(e.g. on leakage and unplanned outages)⁷² and the implied level of stretch suggests that the target is not likely to be met. As a result the P50 is not a true reflection of the outcome in the base case.
- (88) Overall, the downside risk resulting from the calibration of the package would not result in an outcome that is a 'fair bet', as it would result in companies not being able to achieve the required rate of return.

4 ALLOWED RETURNS AND FINANCEABILITY

4.1 AIMING UP

(89) In our hearing accessed asked asked asked for an interpretation of an Oxera paper on 'aiming up' (the Oxera Paper).⁷³ As a noted he had not seen this paper but was aware of similar analysis from UKRN (the UKRN Paper).⁷⁴ Having now reviewed the Oxera Paper, the comments below clarify our response to the questions raised at the hearing.

⁶⁸ Reply to Ofwat, para. 664

⁶⁹ NWL Hearing, page 67, line 9.

⁷⁰ NWL SoC, para. 1066 - 1069

⁷¹ See NWL SOC, para, 1067-1069 for a more detailed explanation and additional arguments.

⁷² SoC, section 10.6.1

⁷³ NWL Hearing, p. 28 line 23 – p. 29 line 4. The Oxera paper referenced is Oxera: Is aiming up on the WACC beneficial to customers, 17 April 2020 and was submitted to the CMA by Heathrow Airport Limited (HAL) as part of its submission on 11 May 2020.

⁷⁴ Estimating the cost of capital for implementation of price controls by UK Regulators: An update on Mason, Miles and Wright (2003), Stephen Wright, Birkbeck, University of London Phil Burns, Frontier Economics, Robin Mason, University of Birmingham Derry Pickford, Aon Hewitt (**UKRN Paper**), Appendix 1 https://www.ukrn.org.uk/wp-content/uploads/2018/06/2018-CoE-Study.pdf

(90) The Oxera Paper adds a subtle change of assumption concerning how a firm's investment will change in response to a regulatory WACC (x) set below the (unobservable) true WACC (y). Otherwise, it covers the same ground as the UKRN Paper.

4.1.1 Areas of commonality

- (91) The assumption in both is that the regulatory objective is to maximise consumer welfare, measured by 'consumer surplus'. In a world of perfect certainty, under the assumptions of both Oxera and UKRN, this is achieved by setting the allowed rate of return (x) exactly equal to the true WACC (y). In other words, if there is no doubt about the exact y, there is no case for aiming up.
- (92) The problem both analyses seek to address is what to do when we don't know the true WACC. Suppose what we have instead of y is a range estimate, from an upper value y^u to a lower value, y^l, with a mid-point/central value⁷⁵ of y^m.
- (93) The 'natural' assumption is that x should be set at y^m. However, this assumes that the damage to consumer welfare (measured by the welfare function W in both analyses) is symmetric for x set above or below this value y^m. To examine whether this is likely to be the case, we need to know how consumers react to price changes (price elasticity) and how firms react to an allowed return (x) set below true y. We also need to know how allowed return impacts the price both analyses assume a simple linear impact (i.e. an increase in allowed return increases prices 1:1).

4.1.2 UKRN assumptions

- (94) In the UKRN Paper Robin Mason looks at three alternative measures of price elasticity.⁷⁶ Consumers lose out if x>y, but all necessary investment takes place. The loss of consumer surplus is W(y) W(x). However, if x<y, no investment takes place, so the welfare loss to consumers is all of the benefit that would have occurred from that investment, W(y). Mason then shows that unless demand is highly elastic, around 8 or more⁷⁷, x should be set above y^m. Indeed, given any price elasticity less than unity, x needs to be set at above the 90th percentile in the y^u to y^l range hence the term 'aiming up'.
- (95) As Mason describes residential water elasticity as having a likely range of 0.4 to 0.6 (or 0.25 in dry spells), reading values off figure 1.3, Appendix I, would suggest the 98th percentile was an appropriate point.

4.1.3 Oxera assumptions

(96) Oxera models the demand for air travel, which is likely to have a considerably higher price elasticity than water. But instead of assuming all investment is lost if x<y, it examines a range of values from 10% to 100% being lost. Nonetheless, even if only 10% of investment is lost, the conclusion from Figure 2.1 is that with a demand elasticity of 0.6, the 92nd percentile in the y^{u} to y^{l} range would be the appropriate estimate.

4.1.4 Other observations

(97) UKRN note that the analysis relates to new investment, not sunk investment. Oxera query this, pointing out (as has KPMG)⁷⁸ that this ignores the impact that multi-round price setting will have on the allowed return.

⁷⁵ In keeping with typical CC/CMA approaches I am deliberately avoiding the use of mean/average values here.

⁷⁶ UKRN Paper, Appendix 1.

⁷⁷ That is to say, a 1% increase in price leads to an 8% fall in demand.

⁷⁸ SOC416 KPMG - Estimating the cost of capital for PR19, para. 7.3.3, footnote 185

- (98) What is clear from both analyses is that unless no new investment is required, in the context of utility industries the allowed return, x, must be strictly greater than y^m. It is perhaps misleading to describe this as 'aiming up'. Rather, it is where the regulator should pitch her estimate of x in a range of uncertainty stretching between the lower and upper y^u to y^l values.
- (99) Both analyses exclude the modelling of an 'information wedge' in the allowed rate of return. This is made explicit in the UKRN Paper. An information wedge adjustment to the allowed rate of return is entirely inappropriate as to the extent that such an effect is present, the correct approach is to treat it as a cashflow item, not a WACC item. For clarity our view is that the WACC should exclude any informational wedge adjustment, and that any such effects would be appropriately dealt with through the totex or ODI mechanisms.
- (100) Ofwat argues that 'aiming up' is not necessary for PR19 on the basis that: i) MAR based cross-checks on the cost of equity remove the uncertainty around WACC; ii) other incentives matter more to investment than aiming up on the WACC; and iii) aiming up implies a deadweight loss.⁷⁹
- (101) It is unclear to us why there should be any greater certainty around the 'true' WACC at PR19 than for any other price control based on an MAR cross check. There are numerous factors that drive observed MAR data of which the WACC is just one. Our preferences responses set out in details our concerns around placing undue weight on MARs as evidence for determining the WACC. In its most recent submission Ofwat extends its reliance on MARs to assert that because current MARs are above the historical average the range of uncertainty around the WACC collapses to zero. We are not aware of any corporate finance theory or evidence-based study to support this assertion.
- (102) In its second point Ofwat seems to be suggesting that by setting an asymmetric totex cost sharing rate along with strong service level incentives it has created a disincentive to underinvestment which offsets the risk of setting a too low WACC. An approach that relies on companies investing to avoid penalties rather than to earn returns seems very short-sighted and does little to encourage long term investment and commitment to the sector by investors. Indeed it would seem most likely to have a negative effect on investor confidence, encourage conservative totex plans and exacerbate the problem in the medium to long term contributing to concerns about dynamic efficiency in the sector.
- (103) Ofwat's final point on aiming up on new and sunk investment is already discussed above.

4.2 RETAIL MARGIN ADJUSTMENT

- (104) The retail margin adjustment (**RMA**) is a legacy adjustment from PR14. The aim of the RMA is to avoid a double count of the allowed return for the retail part of the business. The reason why there has been a double count in the past, is as follows:
 - the WACC is set at the appointee level i.e. for an integrated wholesale and retail provider. The WACC is then applied to the RCV;
 - however, the reasonable return for the retail side of the business is set based on a cost plus 'fair margin' approach, as opposed to a return on capital employed (ROCE) approach (i.e. RCV*WACC). A margin approach is adopted because of the asset-light nature of retail activities, which renders a ROCE approach less suitable;⁸⁰
 - the reasonable return for the wholesale side of the business is set based on a ROCE approach i.e. the WACC is applied to the RCV; and

⁷⁹ Ofwat, Risk and return - additional submission following our hearing on 22 July.

⁸⁰ PwC Report for Ofwat on the Water retail net margins, February 2014, p. 4 para. 3 (PwC Report). https://www.ofwat.gov.uk/wp-content/uploads/2014/01/rpt_com20140214pwcnetmargins.pdf

- up until PR19, there have been retail assets in the RCV. Therefore, if the RMA was not applied, companies would be compensated for an allowed return on retail twice; i) the allowed retail margin and ii) WACC*RCV, where the RCV included retail assets.
- (105) In PR14 and PR19, Ofwat has avoided this double count by removing the full amount of the allowed return on retail from the appointee WACC. Across the sector, the retail margin is £93m and the combined RCV is £84bn. If we assume that there is 100% double count i.e. that retail capital employed multiplied by WACC is equivalent to £93m and retail assets are included in the RCV, then the adjustment is a deduction from the appointee WACC of 0.11% (£93m/£84bn ~ 0.11%).⁸¹ 0.11% is therefore an upper bound to the RMA.⁸²
- (106) However, the RCV is now "essentially free" of retail assets.⁸³ There is not, therefore, a clear concern with respect to double counting retail returns. It follows that there is a good case for saying that the RMA is simply a legacy adjustment from PR14 and the adjustment is no longer required. This is consistent with PwC's findings (as advisers to Ofwat) which indicated that there should be no adjustment applied by 2020 "over the longer-term, as legacy retail assets contained in the RCV fall, the Single Margin Rule will not be required".⁸⁴
- (107) Nevertheless, Ofwat retained a RMA of 0.04% in the FD, on the basis that the retail margin not only compensated investors for the return on capital needed to provide retail services (allowed for at appointee costs of financing) but also the higher systematic risk of retail. Ofwat therefore decomposed the £93m retail net margin as illustrated in Table 8, £19m for the return on fixed assets, £40m for the return on working capital and the balance of £34m (£93m – £19m - £40m) as compensation for the higher systematic risk in retail.
- (108) Notwithstanding the legacy nature of the RMA and the case for it being zero, **Ofwat's 0.04% figure represents spurious accuracy and fails to take into account a number of considerations**, including:
 - Ofwat's analysis takes the book value of fixed assets on the balance sheet. As recognised by the CMA in its profitability guidelines and in recent market enquiries, ⁸⁵ book value may not reflect the economic value of capital employed⁸⁶ e.g. assets may be heavily depreciated on the balance sheet or intangible in nature;⁸⁷
 - Ofwat's assumption for the working capital financing rate (of 3.06%, nominal) is based on a simple average of the working capital rates set out in company business plans.⁸⁸ An analysis of these rates shows considerable variation across companies.⁸⁹ Moreover, there are sound theoretical arguments which support an application of the WACC to all capital employed, rather than applying different financing rates to different assets.⁹⁰
 - Ofwat applies its own estimate of the appointee WACC to fixed assets. Our position is that Ofwat's WACC underestimates the market WACC and the figures in the KPMG

⁸¹ A downward adjustment to the WACC equivalent to the double counted retail margin #RCV removes the double count because mathematically deducting 93m ÷ capital employed from the WACC results in an equivalent adjustment to the allowed return as deducting 93m from WACC*capital employed. For example, with an RCV of 84bn and pre-tax nominal WACC of 6% the total allowed return = 84bn*6%=5,040m. Stripping out retail returns of 93m would leave a wholesale return of 5,040-93m= 4,947m. Similarly, taking 93m as a proportion of capital employed 93m/84bn~11bp and deducting this from WACC gives you 6%-0.11%-5.89%. Multiplying this adjusted WACC by capital employed = 5.89%*84bn=4,947 i.e. the same result.

⁸² On the assumption that Ofwat has set the retail margin adequately.

⁸³ Ofwat FD, Allowed return on capital appendix, page 14.

⁸⁴ https://www.ofwat.gov.uk/wp-content/uploads/2014/01/rpt_com20140214pwcnetmargins.pdf, p.21

⁸⁵ See for example the profitability analysis of energy retail, undertaken as part of the CMA's Energy Market Inquiry

⁸⁶ More specifically the Modern Equivalent Asset Value (MEAV)

⁸⁷ https://assets.publishing.service.gov.uk/media/56ebdf12e5274a14d7000006/appendix-3-4-analysis-of-retail-supply-profitability-roce.pdf, A3.4-5

⁸⁸ Excluding the highest and lowest figures. We understand these to be 0% and 7%.

⁸⁹ Rates ranging from 0.21% to 5% (this excludes the lowest and highest numbers of 0% and 7%, where 0% is for three companies that did not report any working capital financing rate).

⁹⁰ For a brief discussion of the theoretical merits of applying the WACC, rather than a working capital specific financing rate, see p17 of the PwC Report

Expert Report should be used instead.⁹¹ The retail margin allowance is pre-tax so strictly a pre-tax, rather than vanilla, WACC should be applied;⁹² and

- as evidenced by the CMA's recent RFI012 (Q.15) to Ofwat, there is uncertainty associated with estimating the net working capital employed across the sector. Working capital should strictly be net working capital and include all short-term debtors and creditors.^{93 94}
- (109) Only once a robust analysis of each of the above components has been undertaken could firm conclusions be drawn with respect to the size of the RMA (assuming the arguments with respect to the legacy nature of the RMA are not accepted). However, what we would expect to find is a relatively large range of ROCE estimates and outturn RMAs, due to the inherent difficulties of applying a ROCE analysis to asset-light industries. We note that the ROCE cross-check adopted by PwC in its report for Ofwat on the retail margin allowance, is insightful in this regard. PwC's ROCE cross-check derived a margin range of 0.59% to 1.1%.⁹⁵ The RMA range implied by this cross-check would be 0 to 4.5bps.⁹⁶ PwC's range highlights that Ofwat's 0.04% figure in FD19 is at the upper end of the range; and the spurious accuracy in Ofwat's approach, which uses a single point estimate of ROCE and RMA.
- (110) We have not undertaken a comprehensive ROCE analysis for retail, which is what is required in order to robustly estimate a reasonable RMA range. Table 8 below illustrates the sensitivity of the RMA to flexing various input assumptions. A critical assumption, which is not reflected below is the revaluation of retail assets to their MEAV. The below results could therefore be seen as an underestimate of the RMA, as we would expect an MEAV assessment to increase the capital employed, compared to the use of book values for fixed assets.

Component	Calculation	Ofwat	KPMG low end pre tax WACC, FD working capital	KPMG low end pre tax WACC, Net working capital	KPMG high end pre tax WACC, Net working capital
Fixed asset balance - retail (2020-25 average)	A	£386m	£386m	£386m	£386m
Cost of financing fixed assets	В	5.02%	5.91%	5.91%	6.25%
1) Req. revenue for return on retail fixed assets	C = A x B	£19m	£23m	£23m	£24m
Working capital	F = (D / 365) x E	£1,314m	£1,314m	£903m	£903m ⁹⁷
Working capital financing rate	G	3.06%	5.91%	5.91%	6.25%
2) Req. revenue for return on working capital	H = F x G	£40m	£78m	£53m	£56m
Total retail-specific capital costs	I = C + H	£60m	£100m	£78m	£82m
Retail margin allowed revenue apportioned to HH	J	£93m	£93m	£93m	£93m
3) Req. return for additional systematic risk	K = lower of J – I and zero	£34m	£0m	£17m	£12m
Average RCV	М	£84,125m	£84,125m	£84,125	£84,125m
Retail margin adjustment	N = L / M	0.04%	0.00%	0.02%	0.01%

Table 8: Ofwat retail margin adjustment calculation

⁹¹ SOC416 KPMG - Estimating the cost of capital for PR19. Note: Expert report provides a vanilla WACC. This is then converted to a pre-tax WACC assuming a long-run RPI inflation assumption of 2.9%..

⁹² This equally applies to the working capital financing rate, albeit it is not clear on what basis the different working capital figures are presented. Given the range of figures provided by firms, we suspect the figures represent a range of tax and inflation assumptions.

⁹³ Based on the data provided by Ofwat to the CMA's RFI request. The working capital should include: Debtor balance and Measured income accrual balance in current assets; and Creditor balance, Advance receipts unmeasured balance, and Advance receipts measured balance for current liabilities.

⁹⁴ This should be net working capital exc. financing and tax related debtors and creditors but balances of this nature do not appear in the retail Balance Sheet data 95 Page 9 of the PwC Report

^{96 1.1%} ROCE cross check would imply that zero RMA adjustment is required, whereas 0.59% would imply(0.59%-1%)*11bp i.e. 4.5bp

⁹⁷ Calculated using data from Ofwat's response to RFI011 on the retail margin adjustment.

Source: Ofwat (2019), Allowed return on capital appendix, Table 4.1; and NWL analysis.

(111) In its response to RFI011 Ofwat has agreed with the Citizens Advice position that additional current liabilities should be included in net working capital. We address the calculation of net working capital above. The resulting RMA of 0.09% does not pass a sanity check. The implication of a 0.09% RMA is that 81% of the retail margin is compensation for additional systematic risk in retail, with just 19% being return on capital at the appointee cost of capital rate(s). This implies that the retail WACC is c.32%, which is implausibly high (see Table 9).

Table 9: Implied retail WACC under different RMAs

	Ofwat FD	Ofwat RFI
RMA	0.04%	0.09%
Retail margin £	93m	93m
Capital employed, Ofwat FD	1,694	289
Implied retail nominal WACC i.e. WACC which equates capital	5.5%	32%

employed*WACC with 93m Source: Ofwat (2019), Allowed return on capital appendix, Table 4.1; and NWL analysis.

- (112) **Table 9** highlights that Ofwat's approach of changing its working capital assumption, without properly considering each of the main RMA assumptions has led to an upwardly biased estimate of the RMA, adding to the downward bias implicit in Ofwat's approach to the WACC.
- (113) On the basis of the following, we consider that the RMA should not be applied:
 - the legacy nature of the adjustment is from a time where retail assets were in the RCV;
 - the inherent uncertainty in estimating ROCE for the retail business;
 - the PwC range and our sensitivities supporting estimates close to zero and below 0.04%;
 - RMA's materially above 0.04% (e.g. Ofwat's revised RMA of 0.09%) resulting in implausibly high implied retail WACCs.

4.3 GEARING SHARING MECHANISM

- (114) In the NWL Hearing the CMA queried whether a "70 per cent gearing cap" might be a better alternative to the gearing sharing mechanism (**GSM**) proposed by Ofwat.⁹⁸
- (115) **Ofwat already has a range of tools available to address financial resilience**. The licence provides protections under the regulatory ring fence to protect against downside risk. For example, cash lock-up (where the company is restricted from paying dividends) would be triggered where an appointee is at the lowest investment grade rating and is put on review for downgrade (negative outlook).⁹⁹ Companies must also include a statement in their annual reports to confirm that they are financially viable over the longer term. In addition, Ofwat has a financial monitoring framework in place which enables it to effectively monitor the financial position of the companies it regulates.¹⁰⁰
- (116) As to what the GSM, or a gearing cap, would add to that tool box:
 - in competitive infrastructure market segments, such as Direct Procurement for Customers and Offshore Transmission Operators, we observe gearing levels at around 80% or higher.¹⁰¹ In the water sector itself 70% remains just below the average. This reflects the difficulty of setting a cap at an appropriate level that doesn't disincentivise efficient financing structures;

⁹⁸ NWL Hearing, p. 13, lines 1-4.

⁹⁹ https://www.ofwat.gov.uk/wp-content/uploads/2019/07/Decision-document-on-strengthening-the-regulatory-ring-fencing-framework....pdf, para. 3.2 – 3.16 100 https://www.ofwat.gov.uk/wp-content/uploads/2019/07/Decision-document-on-strengthening-the-regulatory-ring-fencing-framework....pdf

¹⁰¹ KPMG (2018), 'Commentary on the Ofwat Consultation on Putting the sector back in balance', May. Section 3.2 https://www.ofwat.gov.uk/wpcontent/uploads/2018/04/Kelda-Project-Stoddart-KPMG-Report-Final-160518-clean-final.pdf

- there is limited evidence to suggest that companies maintaining gearing levels within a reasonable range, such as OFTOs geared at c.80%, will face financial resilience issues;
- while Moody's maximum guidance for RCV gearing for Baa1 is an RCV gearing of less than 72%¹⁰² companies with securitised debt structures (such as Anglian and Thames) are leveraged at higher levels of gearing and have still achieved a rating of Baa1 gearing is not the only factor in a robust assessment of financial resilience. The securitisations act as a 'disciplining device, which ensures structured and 'tight' case management. These protections limit the risk borne by lenders by placing security provisions in place to ensure that debt is serviced;¹⁰³ and
- financial resilience is driven by factors other than just gearing (e.g. actual cost of debt, the magnitude of risks faced, debt structure, the level of creditor protection and the level of liquidity). A company with a high cost of debt but low gearing could be less financially resilient than one with an efficient cost of debt but higher gearing. Incentivising degearing could exacerbate this where companies raise less new debt and are proportionally more exposed to a higher cost of debt from earlier debt issuances at higher market rates, potentially increasing the total cost of debt.
- (117) Issues resulting from excessive gearing levels can be dealt with on a companyspecific basis. The benefit of this approach over the GSM or a gearing cap is that it will allow Ofwat to tailor any financial resilience issues to the company –these issues could go beyond gearing and may be down to company specific circumstances. Moreover, under this approach, Ofwat would not in any way be endorsing company's actual financing structures.

4.4 RATING AGENCY METHODOLOGIES AS AN INPUT TO FINANCEABILITY TESTS

- (118) In its hearing Ofwat challenged the perceived independence of rating agencies: "we are very conscious that rating agencies have mixed incentives. So, they earn revenue from bonds being issued";¹⁰⁴ and "… rating agencies do not always get things right. And indeed, there is an incentive problem that although rating agencies are paid by bondholders, there is a question about them benefitting from the gearing-up process".¹⁰⁵
- (119) This is inconsistent with Ofwat's position in other contexts that rating agencies provide "*a widely recognised and independent, forward-looking view of an Appointee's financial strength and resilience.*"¹⁰⁶
- (120) We do not recognise the characterisation of the rating agencies as incentivised to over-state credit quality, and there is no evidence to suggest this is the case. Analysis of the global financial crisis suggests if anything the opposite conflict of interest and that rating agencies have in the past been more prone to over-rating financial products. This characterisation of rating agencies is designed to support divergence between the market test for credit quality which rating agency assessments represent and the tests applied by the regulator. An approach which effectively ignores the views of the independent and well-evidenced rating agencies is not justified.
- (121) Ofwat misrepresents how rating methodologies are applied in practice, for example relying on the rating scorecard¹⁰⁷ to comment on the significance of AICR even though in practice the AICR metric constrains the overall rating. Ofwat also misconstrues the financeability

107 Ofwat Day Two, page 78, lines 1 - 2.

¹⁰² SOC358 Regulator's proposals undermine the stability and predictability of the regime. Exhibit 5, p.5

¹⁰³ KPMG (2018), 'Commentary on the Ofwat Consultation on Putting the sector back in balance', May. p.33 https://www.ofwat.gov.uk/wpcontent/uploads/2018/04/Kelda-Project-Stoddart-KPMG-Report-Final-160518-clean-final.pdf

¹⁰⁴ Ofwat Day Two, page 19, lines 23 – 24.

¹⁰⁵ Ofwat Day Two, page 20, lines 17 – 21

¹⁰⁶ https://www.ofwat.gov.uk/wp-content/uploads/2019/07/Decision-document-on-strengthening-the-regulatory-ring-fencing-framework....pdf, p.7

constraints faced by the notional company as cashflow or liquidity issues,¹⁰⁸ notwithstanding that rating agencies consider underlying returns rather than cashflows *per se* to represent the primary driver of financial headroom and flexibility. **This conflation of financeability and liquidity risks a disconnect between how the regulator sets the cost of capital and the rating achieved by the notional company.**

4.5 DEBT – OUTPERFORMANCE WEDGE

- (122) Ofwat appears to have mischaracterised the 'outperformance wedge' adjustment as relating to the efficiency of past debt issuance by water companies: "*if the sector is more effective or more efficient at debt raising than we might have expected when we set a price review, that we look at that at future price reviews and take that performance into account.*"¹⁰⁹
- (123) Ofwat has adjusted the iBoxx 10Y+ A/BBB benchmark to reflect the difference between the yield at issue on water company bonds and the corresponding iBoxx. The variance between water company bond issuances and iBoxx is not driven by efficiency, but by rating and tenor. It is wrong for Ofwat (and its advisors) to represent that the source of outperformance is not relevant in one forum¹¹⁰ and to indicate that it represents an adjustment for efficiency in another.

4.6 DEBT - DERIVATIVES

- (124) Ofwat appears to suggest that mark to market losses on derivatives represent costs which should not be borne by customers: "*The use of a notional structure means that we can have some confidence of the cost, say, of Yorkshire's* £2.6bn of derivative loss is not going to be borne by customers".¹¹¹
- (125) We consider that this is misleading as the notional company which has c.80% of its debt raised in market conditions when interest rates are higher would from an economic (rather than accounting) perspective also be exposed to a material fair value loss driven by the material variance between current and historical interest rates, and do not consider this to be a relevant indicator of cost efficiency. We maintain our position that **all efficiently incurred derivatives should be included when calculating the observed cost of debt across the sector under the balance sheet approach.**

¹⁰⁸ Ofwat Day Two, page 70, lines 8 - 11

¹⁰⁹ Ofwat Day Two, page 44, lines 10 - 13 110 CMA Roundtable on WACC, page 71, lines 8 - 18.

¹¹¹ Ofwat Day Two, page 44, lines 6 - 7