December 2019

PR19 final determinations

Thames Water – Cost efficiency final determination appendix

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PR19 final determinations: Thames Water – cost efficiency final determination appendix

About this document

This document is a cost efficiency appendix to 'PR19 final determinations: Thames Water final determination'. This document provides further details of the company specific issues related to cost allowances and is structured as follows:

- Section 1 provides a summary of our decisions on the company's cost adjustment claims;
- Section 2 provides a summary of our decisions on the company's enhancement proposals, by enhancement area;
- Section 3 provides our decision on costs proposed by the company under the transition programme;
- Section 4 provides our decision on unit cost adjustments related to the WINEP uncertainty mechanism.

Further information on our assessment and our approach can be found in the 'Securing cost efficiency technical appendix' and the various excel feeder models that we have published.

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Amendment	Date
Page 10 – Amendments to text in section 4 to clarify the operation of WINEP uncertainty mechanism: Page 11 – Amendment to delete 'in our final determination' from Table 4 heading	18 May 2020

1. Cost adjustment claims

Table 1 summarises our consideration and allowances for the cost adjustment claims submitted by the company. For completion we include all claims that were part of our draft determination decisions, as well as additional or revised claims the company submitted in its representation to the draft determination. We give further details in our published cost adjustment claim feeder model for Thames Water.

Table 1: Cost adjustment claims and our allowed totex adjustments, 2020-25 (£ million of 2017-18)[1]

Description of Claim	Value of company claim	Our allowed adjustment	Rationale for decision
Incremental cost of water stress on balancing supply / demand – metering modelling claim	165.0	See rationale	The company argues that its unit cost for smart metering installation is materially higher than our modelled allowance due to regional circumstances. We assess all of the company's metering enhancement request within the metering enhancement model. We include further detail of our approach and assessment in 'Thames Water – cost efficiency additional information'.
Customer Relationship Management and billing system – legacy depreciation costs	43.8	0.0	Thames Water requests additional allowance related to depreciation costs on an investment in a customer relationship and management billing system, which it undertook within our PR14 allowance. Our residential retail econometric models provide the company an implicit allowance for efficient depreciation costs, after which the claim is immaterial. See 'Thames Water final determination' for further information.
Growth and quality investment for bioresources	38.7	0.0	The claim relates to environmental permitting regulation compliance costs. At draft determination we rejected the claim as it did not meet the materiality threshold for a bioresources cost adjustment claim. The company has not raised substantive issues in its representation and we retain our draft determination assessment.
Network maintenance – higher base costs incurred in central London	120.2	0.0	The claim relates to higher maintenance costs in the London area due to regional circumstances. The company presents evidence that that it is disproportionally impacted by soil condition, traffic loading and potentially other factors. We are not fully convinced by the evidence. However, the

[1] The value of the cost claims for the residential retail control ('population transience' and 'Customer Relationship Management and billing system') is in nominal terms.

			London water network's performance is significantly lower than industry norms. We make a separate conditional allowance for Thames Water to improve the performance of the water network. See 'Thames Water – cost efficiency additional information appendix'.
Population transience – impact on debt recovery and customer account management	63.0	0.0	The company argues that it incurs higher retail costs due to high transience in its region. Although we accept that transience may increase costs, at the draft determination we rejected the claim because our models already account for transience as a cost driver via the inclusion of a total migration variable in two of our residential retail cost models. The company has not raised substantive issues in its representation and we retain our draft determination assessment.

2. Enhancement assessments

Our approach to assessing enhancement expenditure is detailed in our publication 'Securing cost efficiency technical appendix'. We generally assess enhancement expenditure separately for each enhancement category, as defined by the individual enhancement cost lines in company business plan tables. We assess multiple lines together where there is a potential for costs to be apportioned differently by companies and where there is some synergy between programmes.

Our preferred method of assessment is benchmarking analysis. Where the investment area does not lend itself to statistical modelling we rely more on the evidence provided by companies in their business plans. We follow a risk-based process of having a lighter touch ('shallow dive') assessment for low materiality costs and a more thorough assessment of the evidence ('deep dive') of high materiality costs.

Tables 2 and 3 summarise our consideration and allowances for the enhancement expenditure cost lines submitted by the company. We give further details in our published enhancement feeder models for Thames Water.

Table 2: Assessments of water enhancement expenditure, 2020-25 (£ million of 2017-18)

Enhancement cost	Company view in August 2019 business plan (after reallocations)	Our final determination allowance	Rationale for decision
Meeting lead standards	79.7	66.7	We use a benchmark model to make allowances for these costs. Thames Water is less efficient than our benchmarks and we do not allow the full amount requested. We make a separate allowance in relation to the company's representation for the forecasted replacement of 5,000 customer pipes, including social homes and other establishments with vulnerable customers. Thames Water is engaging with the Drinking Water Inspectorate to take account of the proposals to revise the standard for lead, and we make a £3.2 million allowance based on the efficient cost per supply pipe in recognition of the aspiration to minimise lead at the customer taps.

Supply and demand side enhancements: Total	272.9	93.5	We do not allow enhancement costs for leakage reduction, because the company's stretching performance commitment level does not go beyond the forecast upper quartile threshold. We assess the internal interconnector component through a deep dive and apply an efficiency challenge because we find insufficient evidence to justify the scheme capacity, to demonstrate adequate optioneering and further that costs are efficient. See the 'Thames Water final determination' for further information.
Investment to address raw water deterioration	10.3	9.5	We assess this enhancement are using our shallow dive approach and apply the company shallow dive efficiency factor.
Metering (excluding new connections) for meters requested by optants, customers and businesses	332.6	203.3	We undertake a deep dive assessment of these costs by component, including comparison to our benchmark model allowance and the costs of other companies. Thames Water provides insufficient evidence to justify the total expenditure it requests, however, we make an allowance that is higher than the benchmark model output to reflect some company specific factors and the supporting infrastructure and activity requirements. See the 'Thames Water final determination' for further information.
Resilience	89.2	197.4	We use our deep dive approach and challenge the need, cost efficiency and/or optioneering of the proposed investments. See 'Thames Water final determination' and 'Thames Water – cost efficiency additional information appendix' for further information.
Security	121.2	14.4	We use our deep dive approach for security costs and challenge the need for some of this investment. See 'Thames Water's final determination' for further information.
Total clean water WINEP	176.5	145.9	We use our shallow dive approach to set allowances, applying the company shallow dive efficiency factor only, for eels (England and Wales) 2009 regulations, invasive non-native species and drinking water protected areas programmes. We use our deep dive approach to set allowances for the ecological improvements at abstractions and water framework directive measures programmes. We find insufficient evidence of solution optioneering for the Water Framework Directive (WFD) measures programme and apply our optioneering challenge. For both the WFD measures and ecological improvements programmes we apply the company deep dive efficiency factor due to lack of evidence that the proposed costs are efficient.
Aggregated free form lines	379.7	377.0	The aggregated free form lines relate to investment for supply interruptions, compliance risk index (water quality) improvement, and unplanned outages at water treatment works. We further include here a £300m conditional allowance for Thames Water to improve the performance of the London water supply network.

			We use our deep dive approach. For supply interruptions and compliance risk index improvements we make no allowance. We explain our decisions in 'Thames Water final determination'. For unplanned outages we allow £77m for Thames Water to improve its unplanned outage performance to ensure that the company provides resilience supplies to customers. We consider that this allowance, in addition to that within our base allowance, is sufficient for the efficient delivery of stretching performance targets. Our enhancement allowance for improving performance of its water network is conditional on Thames Water delivering an agreed scope of work that we will continue to scrutinise through a gated process. Further details on this can be found in 'Thames Water – Cost efficiency additional information'.
Total water enhancement	**1,462.0**	**1,107.7**	

Table 3: Assessments of wastewater enhancement expenditure, 2020-25 (£ million of 2017-18)

Enhancement cost	Company view in August 2019 business plan (after reallocations)	Our final determination allowance	Rationale for decision
First time sewerage (s101A)	8.8	3.3	We use a benchmark model to make allowances for these costs. Thames Water is less efficient than our benchmarks and we do not allow the full amount requested.
Odour	11.7	11.0	We assess this enhancement are using our shallow dive approach and apply the company shallow dive efficiency factor.
Resilience	19.4	13.2	We use our deep dive approach and challenge the cost efficiency and optioneering of the proposed investment. See 'Thames Water final determination' for further information.
Security	5.7	5.6	We assess this enhancement are using our shallow dive approach for low materiality items.
Total WINEP/NEP in the round allowance	386.8	328.1	We derive our allowance from the output of cost benchmarking models except where we conduct a shallow or deep dive. Our shallow dive assessments allow the costs in full for programmes relating to conservation drivers, chemical investigations and wastewater investigations. As we are not able to develop a robust cost benchmarking model for the sanitary parameters model we allow the costs in full. Further we determine our view of efficient costs at a programme level by summing all the allowances for the individual lines and making an adjustment to account for catch-up efficiency and frontier shift. The company's allowance is the lesser of this view and its requested investment.
Aggregated free form lines	64.6	0.0	We do not allow the requested investment to reduce pollution incidents as it relates to a common performance commitment. Achieving this performance commitments is funded under base allowances and outperformance of targets is funded under the outcome delivery incentive (ODI) framework, where appropriate.
Total wastewater enhancement	**497.0**	**361.2**	

3. Transition expenditure

Thames Water does not request any expenditure under the transition programme.

4. WINEP uncertainty mechanism

Our totex allowance for companies includes an allowance for environmental obligations set out in the Water Industry National Environment Programme (WINEP). Some of the requirements in WINEP are not expected to be confirmed until December 2021 at the earliest, which is after we make our final determinations in December 2019. Unconfirmed requirements in WINEP are known as 'amber' schemes. Where we make an allowance for amber schemes, we use a mechanism to adjust our totex for schemes which are later confirmed as not required. Conversely, we also use a similar mechanism to make adjustments if other amber schemes in WINEP for which no allowance has been made in our determination are subsequently confirmed as being required.[2]

Table 4 sets out the adjustments in both cases, ie: the adjustments we will make for each scheme in Thames Water's WINEP programme that is currently unconfirmed, if either[3]:

1) the scheme is included in our final determination but confirmed as not required for the period 2020-25; or[4]
2) the scheme is excluded from our final determination but confirmed as required for the period 2020-25.[5]

Our final determination makes an allowance for those amber schemes that Thames Water identifies in Table 14 in its document TW-CE-A8 as being included in its business plan for 2020-25. We have made no allowance for those amber schemes that Thames Water identifies in Table 14 in its document TW-CE-A8 as being excluded from its business plan.[6]

We will make the adjustments at the end of the control period. Our adjustments are based on the company's totex estimates (after reallocations) as adjusted by our company specific efficiency

[2] Amended to add new sentence: 'Conversely, we also use a similar mechanism to make adjustments if other amber schemes in WINEP but for which no allowance has been made in our determination are subsequently confirmed as being required.'
[3] Amended to read 'Table 4 sets out the adjustments in both cases, ie: the adjustments we will make for each scheme in Thames Water's WINEP programme that is currently unconfirmed, if either'
[4] Amended to read the scheme is included in our final determination but confirmed as not required for the period 2020-25; or
[5] Amended to add sentence 'the scheme is excluded from our final determination but confirmed as required for the period 2020-25'
[6] Amended to add paragraph 'Our final determination makes an allowance for those amber schemes that Thames Water identifies in Table 14 in its document TW-CE-A8 as being included in its business plan for 2020-25. We have made no allowance for those amber schemes that Thames Water identifies in Table 14 in its document TW-CE-A8 as being excluded from its business plan

factor or, in the case of wastewater schemes, by the ratio of our final totex allowance for the WINEP programme to the company's estimate (after reallocations).

Table 4: WINEP uncertainty mechanism – cost adjustments for unconfirmed WINEP schemes included [7](£ million in 2017-18 prices)

Unique ID	Scheme category / name	Company's totex unit rate	Our allowed totex unit rate
WINEP/NEP ~ Nutrients (P removal) at ASPs or filter bed STWs			
Permit >0.7mg/l annual average			
-	1-500 p.e.	£3,818 per p.e	£3,286 per p.e.
-	501-1,000 p.e.	£2,260 per p.e.	£1,945 per p.e.
-	1,001-2,000 p.e.	£922 per p.e.	£794 per p.e.
-	2,001-5,000 p.e.	£551 per p.e.	£474 per p.e.
-	5,001-15,000 p.e.	£262 per p.e.	£226 per p.e.
-	15,000-30,700 p.e.	£194 per p.e.	£167 per p.e.
-	30,701-80,000 p.e.	£91 per p.e.	£78 per p.e.
-	>80,000 p.e.	£22 per p.e.	£19 per p.e.
Permit >=0.40mg/l but <=0.7mg/l annual average			
-	1-500 p.e.	£3,176 per p.e.	£2,734 per p.e.
-	501-1,000 p.e.	£2,393 per p.e.	£2,060 per p.e.
-	1,001-2,000 p.e.	£1,592 per p.e.	£1,370 per p.e.
-	2,001-5,000 p.e.	£862 per p.e.	£742 per p.e.
-	5,001-15,000 p.e.	£398 per p.e.	£343 per p.e.
-	15,000-30,700 p.e.	£224 per p.e.	£193 per p.e.
Permit <0.4mg/l annual average			
-	1-500 p.e.	£7,539 per p.e.	£6,489 per p.e.
-	501-1,000 p.e.	£5,362 per p.e.	£4,615 per p.e.
-	1,001-2,000 p.e.	£3,967 per p.e.	£3,415 per p.e.
-	2,001-5,000 p.e.	£1,743 per p.e.	£1,500 per p.e.
-	5,001-15,000 p.e.	£876 per p.e.	£754 per p.e.
-	15,001-30,700 p.e.	£509 per p.e.	£438 per p.e.
-	30,701-80,000 p.e.	£171 per p.e.	£147 per p.e.
-	>80,000 p.e.	£64 per p.e.	£55 per p.e.
WINEP/NEP ~ Chemicals removal			
7TW300011	Buntingford STW (CIP2 T2)	£3.039m	£2.616m

[7] Amendment to delete 'in our final determination' from Table 4 heading

Unique ID	Scheme category / name	Company's totex unit rate	Our allowed totex unit rate
WINEP/NEP ~ Reduction of sanitary parameters			
7TW200698	KINGSTON BAGPUIZE STW	£2.951m	£2.540m
WINEP/NEP ~ Eels Regulations (measures at intakes)			
7TW200843	Investigation into the size of eel resource trapped inside 26 bunded reservoirs	£15,392 per reservoir	£14,433 per reservoir
WINEP/NEP ~ Water Framework Directive measures			
7TW100044, 7TW100064	Alleviation of low flows – Chess (inc. full revocation of abstraction licence at Hawridge)	£50.406m	£40.163m
7TW100021, 7TW100065	River and abstraction Augmentation to address Lower Lee abstraction impact	£14.041m	£11.188m
7TW100007, 7TW100008, 7TW100009, 7TW100081, 7TW300092	Bexley alleviation of low flows (Cray and Darent)	£39.418m	£31.408m

Note: p.e. in the above table is the estimated design population equivalent at 2031 as reported by Thames Water in its document TW-CE-A8, Table 14.

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

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