

December 2019

PR19 final determinations

**Severn Trent Water – Cost efficiency
final determination appendix**

PR19 final determinations: Severn Trent Water – Cost efficiency final determination appendix

About this document

This document is a cost efficiency appendix to 'PR19 final determinations: Severn Trent 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.

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 Severn Trent Water.

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

Description of Claim	Value of company claim	Our allowed adjustment	Rationale for decision
Enhancement expenditure for Water Industry National Environmental Programme	398.6	0.0	The claim relates to the delivery of specific environmental improvement requirements as set out in WINEP3. At the draft determination we made an allowance for this under our assessment of enhancement. No further adjustment was made as a cost adjustment claim as the company did not evidence any unique factors to support its claim. The company has not raised substantive issues in its representation and we retain our draft determination assessment.
Environmental investigations and mitigations for supply demand balance	84.1	0.0	The claim relates to additional expenditure for supply demand balance required by environmental legislation. At the draft determination we made an allowance for this under our assessment of enhancement. No further adjustment was made as a cost adjustment claim as the company did not evidence any unique factors to support its claim. The company has not raised substantive issues in its representation and we retain our draft determination assessment.
Energy price increases	185.0	0.0	The company argues that increases in energy prices in the next regulatory period are not properly accounted for in our base econometric models. At draft determination we rejected this claim as it failed to provide evidence that the CPIH indexation is not sufficient to cover for future energy inflation or that the company is uniquely impacted by such inflation. The company has not raised substantive issues in its representation and we retain our draft determination assessment.
New supply schemes for supply demand balance	218.2	0.0	The claim relates to additional expenditure for supply demand balance required by environmental legislation. At draft determination we made an allowance for this under our assessment of enhancement. No further adjustment was made as a cost adjustment claim as the company did not evidence any unique factors to support its claim. The company has not raised substantive issues in its representation and we retain our draft determination assessment.

Water resilience	135.4	0.0	The company claims additional expenditure to improve resilience to protect customers. At draft determination we made an allowance for this under our assessment of enhancement. No further adjustment was made as a cost adjustment claim as the company did not evidence any unique factors to support its claim. The company has not raised substantive issues in its representation and we retain our draft determination assessment.
Water security	67.0	0.0	The company claims additional expenditure driven by new security legislation. At the draft determination we assessed this expenditure as an enhancement cost. No adjustment was made as a cost adjustment claim as the company did not evidence any unique factors to support an adjustment to our assessment of enhancement. Severn Trent Water is bound by the same legislation as all companies. The company has not raised substantive issues in its representation and we retain our draft determination assessment.
Water treatment works (WTWs) economies of scale	0.0	0.0	The cost of this claim in the business plan tables is zero. We therefore did not make an allowance at the draft determination. The makes no further representation and we retain our draft determination assessment.
Developer services costs	258.0	0.0	Severn Trent Water argues that its atypical costs for a new connection are not properly reflected in our cost models. At draft determination we did not accept this claim as the company did not sufficiently evidence that its costs were different from other companies. The company has not raised substantive issues in its representation and we retain our draft determination assessment. Our final determination approach to modelling developer services costs introduces a new mechanism to true-up for variances in the number of new properties. See 'Severn Trent Water final determination' for further information.
Sewage treatment works (STWs) economies of scale	72.0	0.0	The company argues it incurs higher costs at sewage treatment works (STWs) because it cannot achieve the same economies of scale as other companies. At draft determination we rejected this claim as we account for economies of scale in our base cost models with several cost drivers. The claim did not present evidence of cost drivers that are more robust than those we use. The company has not raised substantive issues in its representation and we retain our draft determination assessment.
Waste water treatment complexity	55.0	0.0	The company claims additional expenditure for having the tightest consent in the industry at its STWs. We rejected this claim at draft determination as our base cost models account for wastewater treatment complexity, and the alternative models the company presents did not prove to be as robust as our 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 its 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 Severn Trent 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)	Company view in August 2019 business plan (after rebasing enhancement opex)¹	Our final determination allowance	Rationale for decision
Improving taste / odour / colour	22.4	11.3	11.3	We use our shallow dive approach to set allowances. We make a full allowance for this expenditure, once we remove £11.1 million of enhancement opex costs related to investment in 2015-20.
Meeting lead standards	16.8	16.4	6.3	We use a benchmark model to make allowances for these costs. The company is less efficient than our benchmarks and has one of the highest unit cost per communication lead pipe replaced in the industry. We therefore do not allow the full amount requested.
Supply and demand side enhancements: Total	151.6	151.6	95.6	We do not allow enhancement costs for leakage reduction, because the company's stretching performance commitment level does not go beyond the

¹ We remove from the company's view of enhancement costs the opex that is related to enhancement investment in 2015-20.

				forecast upper quartile threshold. We apply an efficient industry unit cost for short term supply-demand balance enhancements which is lower than the company unit cost. See 'Severn Trent Water final determination' for further details.
Investment to address raw water deterioration	60.8	60.8	37.1	We find no scheme level cost estimates or information as to treatment works flows in the business plan submission. We make no allowance for the schemes where we find no evidence of DWI support. We apply a cost challenge to other scheme capex costs due to lack of information and cost build up. We do not make allowance to operate the enhanced treatment works processes on this enhancement line. In response to representations by other companies we revise our forecast of water treatment complexity in the modelling of these operational costs. See 'Severn Trent Water final determination' for further information.
Metering (excluding new connections) for meters requested by optants, customers and businesses	66.6	66.6	66.6	Severn Trent Water requests £66.6 million to install new meters, including a reallocation of £1.6 million from supply-demand balance enhancement expenditure. We use a unit cost model to make allowances for these costs. Severn Trent Water is more efficient than our benchmark and we allow the requested costs. For final determination, we make no change in our allowance from draft determination and we allow the company request in full.

Resilience	147.4	137.0	107.2	We use our deep dive approach and challenge the need, cost efficiency and/or optioneering of the proposed investments. See 'Severn Trent Water final determination' for further information.
Security	67.0	65.3	0.0	The company's PR19 security costs are material. We disallowed these costs in our initial assessment of business plans decision as the company forecasts above average expenditure during 2011-20 (as a proportion of its 2020-25 botex). The company does not present sufficient evidence to justify this additional expenditure at the draft determination stage nor within its August 2019 representation, therefore we maintain our decision to disallow these costs.
Total clean water WINEP	87.4	86.1	72.7	<p>We use our shallow dive approach to set allowances, applying the company shallow dive efficiency factor only, for ecological improvements at abstractions, eels regulations and invasive non-native species programmes. The shallow dive efficiency factor for Severn Trent Water is zero and we allow the full requested cost. We allow requested investments for investigations based on the low materiality of the programme as determined at the initial assessment of business plans.</p> <p>We use our deep dive approach to set allowances for water framework directive measures. We find insufficient evidence of solution costing and</p>

				procurement/delivery opportunities and apply a 20% challenge plus the company deep dive efficiency factor.
Improvement to river flows	15.2	15.2	15.2	We use our shallow dive approach to set allowances, and we do not apply the company shallow dive efficiency factor.
Total water enhancement	635.3	610.3	411.9	

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

Enhancement cost	Company view in August 2019 business plan (after reallocations)	Company view in August 2019 business plan (after rebasing enhancement opex)	Our final determination allowance	Rationale for decision
First time sewerage (s101A)	17.4	16.9	12.7	We use a benchmark model to make allowances for these costs. The company is less efficient than our benchmarks and we do not allow the full amount requested.
Sludge quality and growth	29.3	26.3	0.0	We continue to make no allowance due to discrepancies in sludge production data, lack of evidence of optioneering and lack of evidence on the breakdown of costs.
Odour	0.7	0.0	0.0	After rebasing enhancement opex expenditure is zero.
Total WINEP/NEP in the round allowance	426.2	398.6	398.6	The company is allowed its requested costs after reallocations and opex rebasing. We consider these costs are efficient as they are less than our modelled allowance after adjustment for a catch-up efficiency and frontier shift.
Aggregated free form lines	61.4	58.8	40.8	The company requests £47.7 million to manage legacy non-operational wastewater assets under the Reservoirs Act, which based on our guidance would not be

				<p>transferred to the new Bioresources price control. We use our deep dive approach to set an allowance. We estimate an implicit allowance of £1 million assuming six-monthly inspections and some resultant maintenance actions. We have further applied a 15% efficiency challenge to the proposed costs as studies are still ongoing and as there has been a level of historical expenditure to comply with environmental regulations.</p> <p>The company requests £10 million to conduct investigations on all high frequency spilling combined sewer overflows above those listed in WINEP3. We do not make an allowance as customer support and protection is not evident to go beyond those in WINEP3.</p> <p>The company requests £1 million (operational enhancement expenditure rebased) for customer education which we allow through shallow dive analysis.</p>
Total wastewater enhancement	535.0	500.6	452.1	

3. Transition expenditure

Severn Trent 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 but for which no allowance has been made in our determination are subsequently confirmed as being required.

Our adjustments are based on the company’s totex estimates (after reallocations) as adjusted by our company specific efficiency factor or, in the case of wastewater schemes, by the ratio of our final totex allowance for the WINEP.

The tables below set out the unit costs on which such adjustments will be made at the end of the control period for each type of scheme. Table 6 sets out the adjustments we will make for each unconfirmed scheme in Severn Trent Water’s WINEP programme, if the scheme is subsequently confirmed as not required for the period 2020-25. Table 7 sets out the adjustments we will make for each unconfirmed scheme excluded from the programme, if the scheme is subsequently confirmed as being required in the period 2020-25.

Table 6: WINEP uncertainty mechanism – cost adjustments for unconfirmed WINEP schemes included in our final determination (£ million in 2017-18 prices)

Scheme type	No. of ‘Amber’ schemes included in business plan	Company’s totex estimate (£m)	Benefit points	Company’s proposed unit cost (totex / point) (£m)	Our allowed unit cost (totex / point) (£m)
WINEP Wastewater schemes					
Storage schemes in the network to reduce spill frequency at CSOs	23	15.540	7	n/a	2.220
Chemicals removal schemes	2	4.094	2	n/a	2.047
Nutrients (P removal at activated sludge STWs)	78	74.773	28.3	n/a	1.406

Scheme type	No. of 'Amber' schemes included in business plan	Company's totex estimate (£m)	Benefit points	Company's proposed unit cost (totex / point) (£m)	Our allowed unit cost (totex / point) (£m)
Nutrients (P removal at filter bed STWs)		78.503	80.8	n/a	
Reduction of sanitary parameters	18	33.014	17	n/a	1.942
WINEP Water schemes					
Making ecological improvements at abstractions	1	3.295	0	-	1.910
WFD measures	53	19.657	0	-	
Improvements to river flows	87	14.229	17	0.8	

Table 7: WINEP uncertainty mechanism – cost adjustments for unconfirmed WINEP schemes excluded from our final determination (£ million in 2017-18 prices)

Scheme type	No. of 'Amber' schemes included in business plan	Company's totex estimate (£m)	Benefit points	Company's proposed unit cost (capex / point) (£m)	Our allowed unit cost (totex / point) (£m)
WINEP Wastewater schemes					
Storage schemes in the network to reduce spill frequency at CSOs	18	13.320	3	1.4	4.440
Chemicals removal schemes	2	0.403	2		0.202
Nutrients (P removal at activated sludge STWs)	57	43.445	19		1.284
Nutrients (P removal at filter bed STWs)		58.006	60		
Reduction of sanitary parameters	3	6.009	1		6.009

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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