

July 2019

Trust in water

PR19 draft determinations

Southern Water – Cost efficiency draft determination appendix

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1. Wholesale water activities

1.1 Enhancement

The tables below summarise the adjustments we make to set the efficient level of enhancement totex for the water resources and network plus water price controls. Where appropriate, we reallocate enhancement expenditure between enhancement activities. In the table, we present the company requested cost for each activity where we made a material challenge, after any reallocation that we may have done. Our disallowances to company enhancement proposals include a challenge on the need to invest, on the efficiency of the proposals or on the classification of the expenditure as enhancement (in which case we consider that the expenditure is covered by our base allowance). For draft determinations we make an adjustment to the enhancement allowances to account for an implicit allowance for enhancement opex included within our base models. We set out our method of estimating the opex implicit allowance in 'Securing cost efficiency technical appendix'. Costs for new developments, new connections and addressing low pressure are now considered within wholesale water base ("botex plus") econometric models. We show details of specific areas of material disallowance or efficiency challenge in the table below and we provide details in our published feeder models.

Table 1: Material disallowances of and efficiency challenges to enhancement costs for the water resources price control 2020-25 (£ million of 2017-18)

Area of enhancement	Company requested totex	Ofwat view of requested totex after reallocations	Our allowance
All Enhancement totex	44.2	53.5	39.5
Material areas of disallowance and efficiency challenge in enhancement totex (£ million)	Ofwat view of requested totex after reallocations	Our allowance	
WINEP / NEP ~ Investigations	15.2	11.3	
Investment to address raw water deterioration	16.6	13.0	
Impounding reservoir enhancement (freeform)	9.3	6.9	
Supply and demand side enhancements: Total	9.4	7.2	

Note: Our enhancement totex allowance is net of an implicit allowance for enhancement opex. We have not netted off an implicit allowance for enhancement opex from our allowances for the individual enhancement lines.

Table 2: Material disallowances of and efficiency challenges to enhancement costs for the water network plus price control 2020-25 (£ million of 2017-18).

Area of enhancement	Company requested totex	Ofwat view of requested totex after reallocations	Our allowance
All Enhancement totex	319.8	310.5	241.3
Material areas of disallowance and efficiency challenge in enhancement totex (£ million)	Ofwat view of requested totex after reallocations	Our allowance	
Supply and demand side enhancements: Total	217.8	168.0	
Investment to address raw water deterioration	61.7	48.2	

Note: Our enhancement totex allowance is net of an implicit allowance for enhancement opex. We have not netted off an implicit allowance for enhancement opex from our allowances for the individual enhancement lines.

1.2 Transition expenditure

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

2. Wholesale wastewater activities

2.1 Enhancement

The tables below summarise the adjustments we make to set the efficient level of enhancement totex for the wastewater network plus and bioresources price controls. Where appropriate, we reallocate enhancement expenditure between enhancement activities. In the table, we present the company requested cost for each activity where we made a material challenge, after any reallocation that we may have done. Our disallowances to company enhancement proposals include a challenge on the need to invest, on the efficiency of the proposals or on the classification of the expenditure as enhancement (in which case we consider that the expenditure is covered by our base allowance). For draft determinations we make an adjustment to the enhancement allowances to account for an implicit allowance for enhancement opex included within our base models. We set out our method of estimating the opex implicit allowance in ‘Securing cost efficiency technical appendix’. Costs for new developments, new connections and addressing low pressure are now considered within wholesale water base (“botex plus”) econometric models. We show details of specific areas of material disallowance or efficiency challenge in the table below and we provide details in our published feeder models.

Table 3: Material disallowances of and efficiency challenges to enhancement costs for the wastewater network plus price control 2020-25 (£ million of 2017-18)

Area of enhancement	Company requested totex	Ofwat view of requested totex after reallocations	Our allowance
All Enhancement totex	649.1	649.1	554.0
Material areas of disallowance in enhancement totex (£ million)	Ofwat view of requested totex after reallocations	Our allowance	
WINEP – wastewater programme ¹	612.2	532.9	
Pollution resilience (free form)	10.7	0.0	

Note 1: Our current allowance for WINEP phosphorus removal schemes is derived our revised P-removal model. For Final Determination we will allow Southern Water the level of investment requested in April 2019 submission as it accepted our view costs as determined at IAP. Details are given in the relevant feeder model.

Note 2: In error we made an allowance for network storage scheme for conservation driver also within our CSO network storage model. This will be corrected at Final Determination and details are given in the relevant feeder models.

Note 3: Our enhancement totex allowance is net of an implicit allowance for enhancement opex. We have not netted off an implicit allowance for enhancement opex from our allowances for the individual enhancement lines.

Table 4: Material disallowances of and efficiency challenges to enhancement costs for the bioresources price control 2020-25 (£ million of 2017-18)

Area of enhancement	Company requested totex	Ofwat view of requested totex after reallocations	Our allowance
All Enhancement totex	6.4	6.4	5.1
Material areas of disallowance and efficiency challenge in enhancement totex (£ million)	Ofwat view of requested totex after reallocations	Our allowance	
Sludge quality and growth	6.4	5.1	

2.2 Transition expenditure

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

3. Cost adjustment claims

Table 5 summarises our consideration and allowances for the cost adjustment claims submitted by the company. We give further details in our published cost adjustment claim feeder model for Southern Water. In its April 2019 plan Southern Water withdrew one of its cost adjustment claim concerning growth at Whitfield which was in its September 2018 plan. The company retains two claims from its original plan, Thanet groundwater protection and bathing waters.

Table 5: 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
Thanet groundwater protection	32.9	30.0	Southern Water provides additional information in response to concerns we raised in the initial assessment of plans and we allow costs, applying an appropriate efficiency challenge. The company provides further detail on the efficiency of the claim and how the overall cost estimate breaks down between the different elements. However, we still consider that the deduction of an implicit allowance relating the base modelled allowance for rehabilitation of sewers in the Margate area is appropriate. Furthermore, the £4m of corporate overheads is significantly higher than the uplift applied in the case of the company's Bathing Water claim (12% of 'delivery cost') - which itself was viewed by Southern Water's independent assessor as being above the industry benchmark - and we therefore reduce the allowance to this level.
Improving bathing waters beyond statutory requirements	21.3	20.6	The company submits a reduced claim in response to feedback we provided in the initial assessment of plans. We partially accept the claim with a reduction in allowance relating to locating misconnections and the associated 12% uplift for corporate overheads. We consider the cost of remediating misconnections is more properly treated as base expenditure.

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, 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.

Table 6 sets out the adjustments we will make for each scheme in Southern Water’s WINEP programme that is currently unconfirmed, if the scheme is not confirmed as required for the period 2020-25. We will make the adjustments at the end of the control period or earlier. Our unit rates are based on the company’s totex estimates as adjusted by our company specific efficiency factor or, in the case of wastewater schemes, our programme wide efficiency challenge.

Table 6 also sets out the basis on which we will make adjustments should the enhancement programmes under 21 cost drivers for which no Southern Water schemes are individually identified in WINEP, eventually confirmed vary, either way, from the programme scopes assumed by the company in its business plan. For each of these 21 cost drivers the obligation is currently recorded in WINEP as being “Water Company Scale”. The relevant cost drivers are:

- Bathing water drivers: BW_IMP1, 2, 3, BW_ND
- Shellfish waters drivers: SW_IMP, SW_ND
- UWWTD drivers: U_IMP4, 5, 6
- Event duration monitoring drivers: BW_MON, SW_MON, U_MON3, 4
- Investigation drivers: BW_INV1, 2, 3, 4, BW_NDINV, SW_INV1, 2, INNS_INV, U_INV

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

Unique ID	Scheme category / name	Company's totex unit rate	Our allowed totex unit (or modelled) rate
7SO200191	Programme level	Not specified. Bespoke, deep dive approach proposed.	0.0013A + 3.0723 Where A is the cumulative volume of new or additional storage provided (in m3)
WINEP/NEP ~ Schemes to increase flow to full treatment (usually under U_IMP5 driver)			
7SO300448	Programme level (excluding Budds Farm)	Not specified. Southern Water proposes using Ofwat's 'Flow to Full Treatment' model to adjust costs in the event of scheme addition or removal.	4.1034 + 0.3702A + 0.01365B + $e^{(1.025+0.6688 \times \ln(A)+0.1372 \times \ln(B))}$ where: A is no. of STWs being enhanced, and B is the cumulative shortfall in capacity being addressed (in l/s)
	Budds Farm STW	Not specified. Bespoke, deep dive approach proposed.	
WINEP/NEP ~ Storage schemes at STWS to increase storm tank capacity (usually under U_IMP6 driver)			
7SO300449	Programme level	94,142 x A ^{0.5308} where: A is the cumulative volume of new or additional storage provided (in m ³)	204.492 x ($e^{(0.8712 \times \ln(A)-5.2075)}$ + $e^{(0.7872 \times \ln(A)+0.1914 \times \ln(B)-5.054)}$) where: A is the cumulative volume of new or additional storage provided (in m3) and

			B is the no. of STWs being enhanced
WINEP/NEP ~ UV disinfection (typically under the SW_IMP and SW_ND drivers)			
7SO200202, 7SO200206	Programme level	Not specified. Southern Water proposes using Ofwat's 'UV disinfection' model to adjust costs.	Since we have no unit or regression cost model for these schemes, we use a bespoke, deep dive approach
WINEP/NEP ~ Nutrients (P removal) at ASPs or filter bed STWs			
N/A	Programme level	Not specified. Southern Water proposes using Ofwat's 'P removal' model to adjust costs.	$22.485 + 0.07482A + 0.6332B + 1.2387C$ where A is the population equivalent served (in '000) B is the no. of STWs being enhanced, and C is the no. of STWs being enhanced where the proposed P consent limit is <0.5mg/l
WINEP/NEP ~ Chemicals removal schemes			
7SO300016	Cuckfield WWTW (CIP2 T2)	Not specified. Southern Water proposes using Ofwat's 'P removal' model to adjust costs.	2.229
WINEP/NEP ~ Investigations (wastewater)			

7SO200256	Investigation to determine the costs and technical feasibility of reaching or maintaining revised CSMG water quality targets for the Lymington River SSSI.	Not specified. Bespoke, deep dive approach proposed.	0.113
7SO200195, 7SO200196, 7SO200197, 7SO200198, 7SO200201, 7SO200203, 7SO200204, 7SO200190	Southern Water PR19 bathing water / shellfish waters / frequently spilling overflow requirements	Not specified. Bespoke, deep dive approach proposed.	Since we have no unit or regression cost model for these schemes, we use a bespoke, deep dive approach
WINEP/NEP ~ Reduction of sanitary parameters			
7SO200340	Buriton WWTW	Not specified. Southern Water proposes using bespoke approach.	1.049
7SO200409	Chiddingfold WWTW		0.447
WINEP/NEP ~ Investigations (water)			
7SO200246	ANDOVER (ANTON AND PILLHILL BROOK RSA)	Not specified. Bespoke, deep dive approach proposed.	0.116 per scheme
7SO1000193	CARISBROOKE (PLAISH MEADOWS AND LUKELY BROOK RSA)		
7SO1000194	BOWCOMBE (PLAISH MEADOWS AND LUKELY BROOK RSA)		
7SO200272	River Itchen Wetlands	Not specified. Bespoke, deep dive approach proposed.	0.131 per scheme
7SO200274	River Itchen Southern Damselfly investigation/options appraisal		

7SO200025	Bewl-Darwell Transfer - Southern Water	Not specified. Bespoke, deep dive approach proposed.	0.087 per scheme
WINEP/NEP ~ Event duration monitoring (under BW_MON, SW_MON, U_MON3, U_MON4 drivers)			
7SO200199, 7SO200205, 7SO200450, 7SO200451	Southern Water PR19 bathing water / shellfish water / flow requirements	Not specified. Southern Water proposes using Ofwat's 'EDM' model to adjust costs.	0.0128A + 0.0015B where: A is the number of EDMs installed and B is the number of permit activities carried out
WINEP/NEP ~ Bathing water requirements not covered by any of above mechanisms (under BW_IMP1, 2, 3, ND drivers)			
7SO200192, 7SO200193, 7SO200194, 7SO200200	Southern Water PR19 bathing water requirements	Not specified. Bespoke, deep dive approach proposed.	Since we have no unit or regression cost model for these schemes, we use a bespoke, deep dive approach

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales. Our vision is to be a trusted and respected regulator, working at the leading edge, challenging ourselves and others to build trust and confidence in water.

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