

Chapter 14

Wholesale Cost Efficiency

Summary

We recognise that we need to deliver a step change in the efficiency of our wholesale business. To address this, we are taking ambitious steps to transform our business to ensure it can deliver our customers' priorities efficiently and innovatively.

We have built significant efficiency savings into our wholesale plan, based on detailed understanding of our own costs and how these compare with other companies, both within our sector and beyond. Our efficiency plan is ambitious and stretching, but we are confident it is deliverable. It builds in the benefits of innovation and technology, corporate transformation and increasing use of partners and collaborative delivery¹.

The scale of our ambition on cost reduction and improved service delivery means there is limited scope for outperformance on costs in AMP7. Our Board is committed to the need to invest in our asset base to deliver more resilient and more sustainable services to our customers, and to address some of the compliance and system resilience issues which have emerged in the current period.

(The details of our efficient retail costs, including doubtful debt costs, are covered in Chapter 13 – Retail Controls).

Chapter headlines at a glance

- We have a clear understanding of our relative efficiency, having used a range of analyses to benchmark ourselves against other water companies and other industries
- While in some areas, such as Opex costs and bioresource efficiency, we are performing relatively well, we recognise we need to make significant efficiency savings in other areas before and during AMP7 to deliver our target of at least upper quartile cost performance
- We have already begun our business transformation programme to reduce costs and provide more resilient and sustainable services to customers
- Our Board has challenged and reviewed the levels of efficiency in our plan and believes that, while we have set stretching and ambitious targets, they are deliverable within the parameters we have set out in our plan as a whole
- Having reviewed our AMP7 cost drivers, we have identified three Cost Adjustment Claims (CACs) which we think are prudent and appropriate

14.1 We designed a challenging process to review our efficiency targets

In this chapter we describe how we have developed our plan and ensured the costs included in it are efficient. Figure 1 below illustrates the process we followed in developing the costs included in our business plan and how we satisfied ourselves that these costs are efficient.

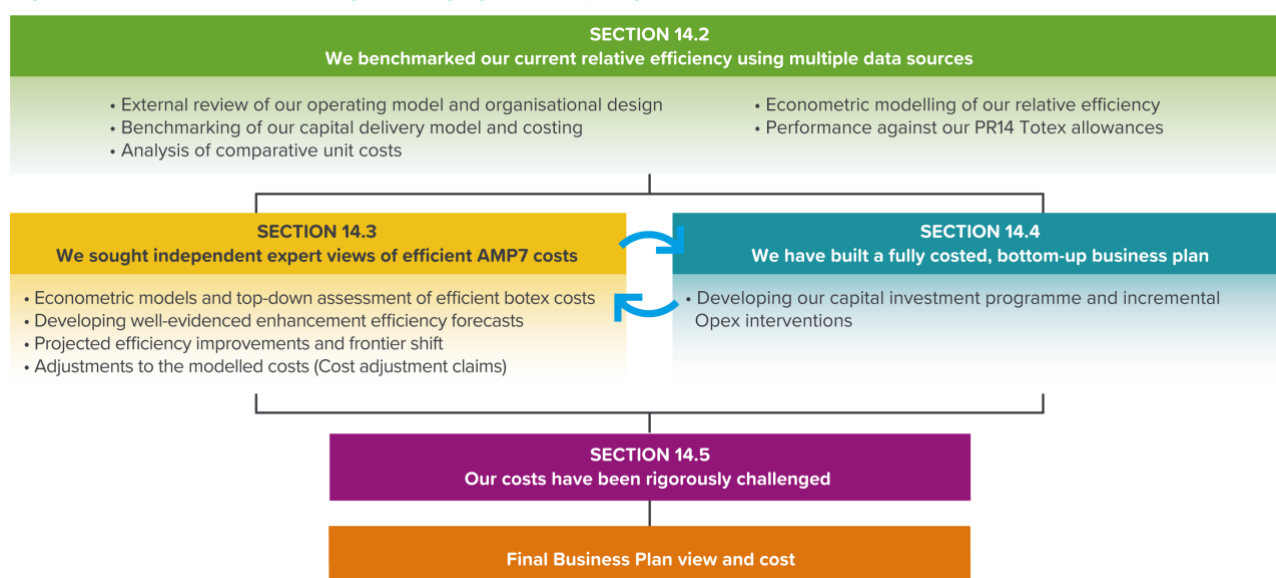
We started the process by ensuring we had a good understanding of our current level of efficiency. In 14.2 we describe how we did this, using a variety of tools and methods of analyses, including business process design, cost benchmarking and econometrics.

To enable the Board to clearly understand whether our plan was efficient it was important that they had a clear view of the efficient level of costs for our AMP7 plan. To do this, we developed econometric models and our view of efficient enhancement costs, which when combined with an independent view of the likely scope for continuing efficiency, gave us a clear basis on which to challenge our bottom-up plan. We also developed a view on any adjustments – in the form of CACs – that were required to reflect specific circumstances and customer priorities. The work we undertook to develop this independent view of efficient costs is described in 14.3.

In 14.4 we describe how we built our detailed, fully-costed plan following appropriate and systematic processes.

Finally in 14.5 we describe the process that we went through to challenge our plan. It also sets out the final costs included in our plan and the significant efficiency challenge that we have imposed.

Figure 1: Our approach to setting challenging efficiency targets in our business plan



14.2 We benchmarked our current relative efficiency using multiple data sources

We have begun an ambitious business transformation programme to ensure we are efficient by the next AMP.

To ensure we have a good understanding of our current relative efficiency, we have carried out a range of reviews and analyses to gain insight about our current position relative to our peers in the water sector and, where relevant, beyond.

To build as rich a picture as we could, we approached this review through a number of different lenses, including:

1. external review of our operating model and organisational design
2. benchmarking of our capital delivery model and costing
3. analysis of comparative unit costs

4. econometric modelling of our relative efficiency
5. performance against our PR14 Totex allowances.

Each of these is briefly described below, with the key insights of the analysis.

1. External review of our operating model and organisational design

As the first phase in our business transformation programme, we commissioned Egremont Group, transformation specialists who work with clients in retail, financial services and aviation as well as utilities, to carry out a review of our operating model and organisational design.

Their initial review was based on a process-led approach, with a strong emphasis on driving effectiveness and efficiency across the organisation, to enable us to deliver better services for our customers and colleagues. This review drew on best practice from other companies within our sector, as well as other industries. This will enable us to develop and apply more innovative and resilient processes and deliver improved capability. (For more detail see Chapter 7)

Key insights:

There is significant scope for delivery of savings from:

- redesigning our central support functions
- grouping of common capabilities business-wide
- reviewing the resourcing, capabilities and ways of working needed across the end-to-end asset management lifecycle
- iterating the organisation design, enabled by process and IT efficiencies.

Much of this work is already underway and will deliver operating cost reductions by the end of the current AMP.

2. Benchmarking of our capital delivery model and costing

As part of our PR19 assurance, we have benchmarked our net direct works costs (i.e. before the application of indirect costs such as project management, overheads and risk). This covered defined schemes where a full engineering scope had been developed and costed. Comparisons were made against our current performance, water sector benchmarks and wider-industry benchmarks, where asset alignment/components allow for a like-for-like comparison.

We have also benchmarked our indirect costs using independent third-party benchmarking data and industry cost intelligence. Our indirect costs were compared to water sector comparators (equivalent and alternative delivery models) and wider industry sectors (including rail, roads, buildings and aviation).

Key insights:

This analysis indicated that our current AMP6 capital delivery model is not yet fully optimised. In particular, it identified that:

- there are significant opportunities to reduce direct works costs further, through improved contracting arrangements
- our indirect costs could also be reduced further, through improvements to investment programme management and contractor project management.

(The details of this are set out in TA 14.4: Bottom-up Cost Estimation.)

3. Analysis of comparative unit costs

We regularly undertake unit-cost analysis of our wholesale business using Annual Performance Report and other data. The analysis provides a simple unit cost comparison against the industry average level of spending per unit of output.

Key insights:

For both water and wastewater, aggregate Totex unit costs are around the industry average.

- Operating expenditure for both services is below average across most components of the value chain
- However, capital expenditure was notably above average.

4. Econometric modelling of our relative efficiency

To complement the regular analysis of unit costs, and to help us in understanding whether differences in unit costs reflect real differences in efficiency or operational and environmental factors, we commissioned external research by Oxera to benchmark our current Botex efficiency. The analysis covered the period from 2011-12 to 2016-17. It assessed our historical performance and efficiency by comparing the actual annual costs reported by companies against notional efficient levels of costs estimated through a wide range of econometric models.

Key insights:

Although the models in some cases gave a wide range of results, the main findings were:

- **Water:** overall, the analysis suggests there is a gap to upper quartile performance. At sub-service level, we were on average better than upper quartile performance on water resources, but on average worse than upper quartile performance on Water Network Plus.
- **Wastewater:** overall, our wastewater business is less efficient than water. Our efficiency on Wastewater Network Plus was on average worse than the upper quartile, while bioresources was, on a number of models, at the upper quartile level.

5. Performance against our PR14 Totex allowances

As described in Chapter 17 – Accounting for Past Delivery, we expect to overspend against our AMP6 Totex allowance for water and slightly underspend compared with our wastewater allowance. We have analysed the make up of these variances against the detailed delivery plan we developed following the final determination at PR14 to understand at a more granular level how it is made up.

Key insights:

- Our assessment indicates that we are more efficient in Opex, less so in Capex
- Our Opex forecast includes the projected savings we expect to deliver in the next two years as a result of our business transformation programme
- Our capital expenditure, after a slow start to the AMP, is forecast to outturn for AMP6 above the amount implied in the final determination.

Summary of our understanding of our relative efficiency

We have carried out a range of analyses from process-led business review to sophisticated econometric analysis, to help us understand our current efficiency position and ensure we submit a plan based on efficient costs. Given the range of techniques used, and the different scopes of the various pieces of analysis, it is not possible to draw definitive, quantified conclusions.

However, a number of clear themes emerge from the different analyses:

- The Egremont work identified significant process inefficiencies and scope for better organisational alignment, which are being addressed in this AMP through our business transformation programme (For more detail see Chapter 7 – Delivering beyond resilience in the round.)
- Our operating expenditure appears to be broadly efficient – as evidenced by both the unit cost analysis and our performance against the PR14 Totex allowances

- There is scope for reductions in our capital costs, which both the third-party benchmarking and unit cost analysis suggest are higher than our peers – and which the econometric modelling suggests is not attributable to our asset base or operating environment

14.3 We sought independent expert views of efficient AMP7 costs

To enable us to challenge our own bottom-up forecasts of efficient costs and for our Board to be satisfied that the costs in our plan are efficient, we sought an independent view of the efficient level of Totex.

For Botex we used econometric models to understand our current level of efficiency. This provided a projected view of efficient level of costs for AMP6. We also took account of the initial modelling published by Ofwat, to develop a triangulated view of the efficient level of Botex for AMP7 (see 14.3.1 below). (Also see TA 14.7 on the top-down econometric analysis (Botex))

For enhancement costs, which are by their nature more likely to be one-offs it is more difficult to develop an entirely independent view. As a result we primarily relied on detailed engineering challenge and reviews of schemes and programmes (see 14.3.2 below).

(Also see TA 14.5: PR19 Approach to Optioneering.)

As part of this process we considered the scope for continuing efficiency and the impact of real price effects (see 14.3.3), as well as any necessary adjustments to the modelling to take account of unique features of our operating environment, or to account for specific customer needs that would not be reflected in the modelled efficient costs (see our Cost Adjustment Claims in 14.3.4).

14.3.1 Econometric models and top-down assessment of efficient Botex costs

We made the development of econometric models a key focus area for PR19. This has enabled us to objectively assess and challenge the efficiency of our business plan. In line with views from the Competition and Markets Authority (CMA) we found models that assessed Botex – base operating expenditure and capital maintenance costs – to be more technically appropriate and stable than models that assess Totex costs. We therefore relied on and focused our development and analysis on Botex models and approached enhancement spending separately (see below).

As a starting point, in addition to developing our own models, we used models from PR14, the CMA, as well as other companies in the industry. This analysis was used to develop projections of efficient costs for each of the four wholesale price controls for AMP7. To ensure our analysis was appropriately reviewed and challenged, we commissioned Oxera to peer review our work and assess our view of the efficient cost projections for AMP7.

We further improved our projections by triangulating these with the outputs from Ofwat's modelling consultation, published in March 2018. We particularly focussed on the models developed by Ofwat but also compared our projections with outputs from the models submitted by other companies. This largely validated our own work, which gave us further confidence that our projections were credible and sufficiently challenging.

(See TA 14.7: Top-down Econometric Analysis (Botex) for details of the analysis.)

14.3.2 Developing well-evidenced enhancement efficiency forecasts

Enhancement expenditure is often company-specific and irregular. We have therefore taken a different approach to developing a view of the efficient level of enhancement costs.

Where costs are repeatable and consistent across all companies – for example in relation to growth-related expenditure – we have updated and used the Ofwat's PR14 cost models within our analysis. We applied an upper-quartile adjustment in line with Ofwat's PR14 methodology².

However, the models do not provide appropriate comparisons for a large proportion of enhancements, particularly on quality expenditure. We have therefore primarily relied on the application of detailed engineering assessments and structured internal challenge processes.

(See TA 14.4: Bottom-up Cost Estimation.)

14.3.3 Projected efficiency improvements and frontier shift

In developing an independent view of efficient costs it is important to consider the potential impact of “frontier shift” – the extent to which the efficient benchmark might move over AMP7.

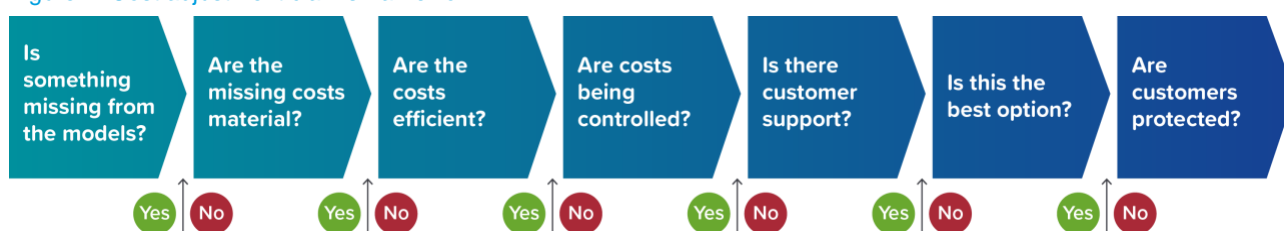
We asked Oxera to provide an independent analysis on the potential scope of this shift (see TA.14.6: Oxera report – Estimate of RPE and Frontier Shift). This considered Total Factor Productivity (TFP) in the water sector, as well as other relevant sectors net of expected Real Price Effects (RPE). Based on this, the analysis projects net annual efficiency gains (TFP less RPE) of less than 1% across AMP7.

We have also considered and taken account of the analysis presented at Ofwat’s Totex and Outcomes Workshop (15 March 2018), which suggested a greater scope for efficiency improvements. Based on this, we have reflected a more stretching assumption than proposed by Oxera’s analysis and where appropriate we have assumed a 1% cumulative annual increase (3% on average over the AMP) across our modelled costs³.

14.3.4 Adjustments to the modelled costs (Cost Adjustment Claims)

Our final stage in developing an independent view to challenge our bottom-up costs was to consider the extent to which specific adjustments were required to reflect our own circumstances or specific customer needs – CACs. We have proposed such adjustments only where they are absolutely necessary and appropriate to deliver well-evidenced needs for our customers, in line with Ofwat’s CAC guidance requirements⁴. To develop our claims we undertook a review to identify the unique features of our operating environment. We assessed the impacts of these features, both favourable and unfavourable circumstances, and based on this, identified an initial set of cases. We also reviewed areas where customers wanted us to go beyond our statutory requirements and considered investments that may not be covered sufficiently in the cost-assessment process. We developed and applied a consistent framework and process for reviewing and assessing all CACs, in line with the high level tests shown in Figure 2 below.

Figure 2: Cost adjustment claims framework



Using this approach we have submitted CACs that we think are prudent and appropriate and where we believe there are genuine gaps in the cost assessment process. Where relevant, we have adjusted our claims to allow for only incremental costs – that sit over and above amounts that we believe are already allowed for in Ofwat’s models. We also adopt matching customer protection ODIs.

The final claims we have included are:

- **Bathing waters** (£32 million): this claim relates to work to improve the bathing water quality and long-term resilience of seven bathing waters, enhancing the water quality, amenity value and economy in the local areas. This is a customer-driven claim. Our customers consistently tell us that the quality of the bathing waters in our region is a key priority for them. This is why

we propose to improve five bathing waters classed as sufficient or poor to good and improve two bathing waters from good to excellent

- **Growth – Whitfield** (£26 million): this claim relates to work required for a sewage treatment solution for a growth hotspot in the Whitfield development, where we will see significant, concentrated growth at levels far higher than the national average, which is unlikely to be adequately funded through the modelled cost allowance
- **Thanet Groundwater Protection Scheme** (£33 million): this claim is to carry out the third phase of Thanet Sewer groundwater scheme, which will prevent the risk of pollution of groundwater sources. This scheme is a statutory requirement under the Water Industry National Environmental Programme (WINEP3).

As part of our early submission we submitted a CAC on nitrate schemes (£54 million). However, following further clarification by Ofwat⁵, our current understanding is this will instead be covered as part of the enhancement programme. We have therefore dropped this claim.

(See TA 14.1-3 for full details of our CACs.)

14.3.5 Conclusion on our independent view of efficient costs for AMP7

Taking our modelled Botex results, projected enhancement costs, combined with our view on continuing efficiency and CACs, provided us with a credible and well-evidenced set of figures to challenge our delivery plan.

This is shown in Table 1 below:

Table 1: Summary of efficient costs for AMP7

2017-18 Prices	Water		Waste	
	Resources	Network Plus	Resources	Network Plus
Modelled upper-quartile Botex – reflecting frontier shift	85	620	270	1,110
Modelled upper-quartile enhancements – reflecting frontier shift	–	442	8	175
Cost Adjustment Claims (CACs)	–	–	–	92

14.4 We have built a fully costed, bottom-up business plan

We have been developing our best view of the costs of delivering our AMP7 programme, based on detailed optioneering and costing of schemes and reflecting the benefits of our transformation programme. Our plan is founded on a strong bottom-up view of the schemes and programmes required to deliver the customer commitments we set out in the plan, as well as our broader regulatory requirements. We considered the efficiency of the bottom-up plan from a scope perspective as well as a cost perspective.

For our ongoing costs we reflected our best view of efficient operating costs that we expect to deliver in the current AMP.

For developing our capital investment programme and incremental Opex interventions, we followed a five step process:

1. Establish the need through a combination of:

- customer insight
- statutory and other regulatory requirements including Outcome Delivery Incentives (ODIs)
- asset deterioration modelling
- wastewater growth and capacity

- water supply and demand
- asset, performance and resilience risk.

2. Develop the programme-level and scheme-level options including consideration of innovative solutions

(See TA 14.5: PR19 Approach to Optioneering)

3A: Estimate cost schemes using:

- detailed component level and function level cost models
- overhead/indirect cost assumptions
- Opex arising from Capex calculation tool.

(See TA 14.4: Bottom-up Cost Estimation.)

3B: Estimate cost operating-cost investments using detailed budgetary forecasts and analysis.

3C: Estimate cost non-defined solution investment using:

- historic costs
- deterioration modelling outputs
- scheme investment data and other relevant investment data sources (such as external investment data).

4. Select best programme-level and scheme-level options for customers, based on whole-life costs and benefits and use of multi-criteria analysis.

5. Review, challenge and programme optimisation and assurance.

(See TA 14.4 and TA 14.5 for a detailed explanation of how we developed and benchmarked our bottom-up plan.)

14.5 Our bottom-up plan costs have been rigorously cross-checked and challenged

We have developed our plan through iterative processes, cross-checking and comparing our top-down and bottom-up assessments of efficient costs.

Based on these comparisons, we provided the Board with our best view of our PR19 plan throughout the development process. This enabled the Board to challenge and make decisions on the costs included in our business plan. (See TA.02.2: Board Engagement and Challenge for details of this process.)

Reflecting the evidence on the efficiency of our capital delivery, the Board committed to significant efficiency savings across our Capex. This was consistent with the cost reductions applied by Ofwat between PR14 submission and final determination.

We established a number of forums to enable us to appropriately challenge and prioritise our delivery plan, from a variety of perspectives, including identifying opportunities to deliver alternative solutions, prioritising expenditure and challenging the efficiency assumptions. During this process we were able to draw on the expertise of a number of our independent non-executive directors (INEDs) with long experience in the construction and operations fields. A description of each of these challenge forums is provided in Table 2 below.

Table 2: Overview of challenge sessions and committees

Challenge forum	Role and function
PR19 Star Chamber	A forum of technical experts and regulatory specialists (internal and external), and members of the Executive Leadership Team (ELT), to provide critical, constructive challenge of the approach, analysis and evidence on key topics and components. The purpose of each session was to review each investment area against a series of criteria outlined in Ofwat's final methodology, in order to provide appropriate initial challenge and guidance.
Chief Financial Officer-led efficiency and challenge sessions	These sessions were used to present programme options to identify the relative priorities across the business plan. The incremental options were scrutinised by a panel including the Chief Financial Officer, Head of Compliance and Resilience, Head of Strategy and Regulation, Head of Corporate Finance and as well as other senior programme advisors.
Efficiency and Delivery Sub-Committee	The Board sub-committee structure, established specifically for PR19, complemented the wider programme of Board engagement, and allowed deep dives on specific issues that made use of individual Board member expertise. The Efficiency and Delivery Sub-Committee focused on the development of delivery plans to address the identified efficiency challenge. Management worked closely with the sub-committee, drawing on the industry expertise of INED members, to develop the building blocks and associated milestones for this work. The sub-committee also regularly discussed Totex included within the plan, and worked alongside the schedule of Board Engagement Days to review the internal cost challenge process, and options for cost reduction.
Board Engagement Days	Board Engagement Days were designed to provide the full Board to provide input on the overall strategy and direction for the plan, and to challenge management on key topics and emerging proposals. There was a total of 11 full days of presentations and discussions.

Through these forums we identified a number of ways to both improve the quality of our service, as well as the value for money for our customers. We identified efficiency savings through scope, Opex and optioneering changes. In line with the evidence on our relative efficiency across price controls, the majority of these savings were identified in Wastewater Networks Plus.

Examples of the changes resulting from this process include:

- **Growth:** addressing the high levels of population growth in our region, we are improving our whole approach to planning and delivery of additional sewerage and treatment capacity. We will be adopting a more forward-looking approach and working collaboratively with developers and planning authorities. Through our **Sustainable Drainage 2030** transformation programme we will make greater use of existing capacity by reducing infiltration and removing surface water from sewers. Using these solutions, we were able reduce our capital expenditure on growth by £70 million
- **Flooding and pollution:** by adopting a technology-led strategy, including greater use of predictive analytics, we have reduced our costs by £25 million. We accept that this has a higher delivery risk but we expect to deliver improved performance in line with our customers' expectations
- **Catchment approach:** we have developed our **Catchment First** approach for investing in catchment solutions to achieve the long-term sustainable management of water and protection of the natural environment. This more integrated approach aligns our water and wastewater catchment schemes to realise efficiencies (e.g. delivering integrated catchment monitoring programmes and projects on the ground where they overlap geographically or thematically). We will invest in catchment measures alongside more traditional treatment solutions to reduce operational costs and reduce the need to replace assets at end-of-life. These solutions reduced our AMP7 delivery costs by £50 million, compared to more traditional solutions
- **Leakage:** by changing our approach to using smart networks we are able to reduce our plan by £50 million. As with flood and pollution, we accept these solutions represent higher delivery risks. However, the approach is strongly supported through customers willingness to pay and aligns with delivering a reduction in tune with customer expectation.

Table 3 below provides an overview of our final plan costs, which we think reflects stretching but deliverable cost targets for PR19.

Table 3: Efficiency challenge to bottom-up delivery plan

2017/18 prices	Water Resources	Water Network Plus	Bio resources	Wastewater Network Plus	Total ⁶
Initial bottom-up wholesale plan	150	1,243	224	2,917	4,534
Initial cost-efficiency challenge and calibration	- 5	- 93	- 13	- 246	- 356
Scope, Opex and optioneering changes	- 18	- 77	- 7	- 161	- 262
Quality programme, changes to requirements	-	-	-	- 235	- 235
Final wholesale business plan costs	128	1,074	204	2,275	3,681 ⁷
Pension deficit recovery			79		79
Final retail business plan			238		238
Final business plan					3,998

Through the comprehensive programme of reviews and analysis we have completed we are confident our plan is grounded in efficient costs. Our process has enabled us to understand our current (AMP6) delivery performance against relevant benchmarks within the water industry and beyond.

The Board notes that the plan represents a step change in service and efficiency, as benchmarked against best practice elsewhere in the water industry and beyond. The intent of the change programme is very clear and there is a detailed understanding of what needs to be achieved in the remainder of AMP6 and beyond to deliver a step change in our services and efficiency. The scale of our ambition means there is limited scope for outperformance on costs in AMP7. However, we are committed to these changes to ensure that we can deliver the cost reductions included in our plan in a way that also ensures we deliver our ambition of a more resilient water future for the South East.

Technical Annexes:

TA.14.1	CAC 1 – Bathing Water
TA.14.2	CAC 2 – Thanet Groundwater Protection Scheme
TA.14.3	CAC 3 – Growth – Whitfield
TA.14.4	Bottom-up Cost Estimation
TA.14.5	PR19 Approach to Optioneering
TA.14.6	Oxera Report: Estimate of RPE and frontier shift
TA.14.7	Top-down econometric analysis (Botex)

References:

- ¹ Full details of how we will deliver the efficiency savings described in this chapter are set out in Chapter 7 – Delivering Beyond Resilience in the Round
- ² These were 10.4 per cent efficiency adjustment to the costs estimated by the PR14 enhancements models on waste and a 6.5 per cent adjustment to the costs estimated by the water enhancement models.
- ³ There are some differences in how we have applied this assumption to our botex modelling. The details of this are set out in TA14.7: Top-down Econometric Analysis (Botex)
- ⁴ P. 14 <https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-11-Cost-efficiency-FM.pdf>
- ⁵ Communication from Ofwat on “Enhancement expenditure: setting expectations for well-evidenced proposals and clarifying interaction with cost adjustment claims” (June, 2018)
- ⁶ Note: the components may not add up to the total due to rounding
- ⁷ Note this excludes costs associated with the adoptions of sewers (£76m)