

8. Accounting for past delivery



8.1 Key Messages

- **Delivery in AMP 6 against a challenging set of performance commitments across water and wastewater:** We expect to earn a £10m net ODI outperformance payment over the regulatory period
- **Top half sector performance on SIM overall, ending the AMP as upper quartile WASC:** Eligible for a £12.69m outperformance payment, based on consistent application of PR14 methodology
- **Recognised as a strongly performing company across a range of metrics:**
 - 4 star EA rating – 3rd consecutive year of industry leading environmental performance
 - World Class status on Dow Jones Sustainability Index
 - Retained “self-assurance” status on Ofwat company monitoring framework
 - Top water and sewerage company on UK Customer Service Institute rankings
- **Strong performance in delivering West Cumbria pipeline ahead of schedule:** Early completion of work expected in first year of AMP7
- **£100m totex outperformance against AMP6 scope:** Targeted £250m reinvestment for resilience leads to £150m reported overspend against PR14 totex assumption
- **Proposed reconciliations developed using relevant PR14 rulebook:** Net impact of AMP6 adjustments increases average customer bills in 2024/25 by less than £1
- **Lessons learnt during AMP6 have been applied in our PR19 business plan:** Providing a robust approach to the delivery of the PR19 business plan

8.2 AMP6 Performance and PR14 Reconciliation

8.2.1 Overview of PR14 Reconciliation

At PR14, Ofwat set companies stretching performance and efficiency targets for performance during the period from April 2015 to March 2020. UUW was set a significant efficiency challenge over and above those reflected in its plan and allowed menu totex in the final determination was £140m lower than in our final proposals. Targets for a number of performance commitments were also increased, notably sewer flooding performance and our performance under our water quality service index measure.

We have had to deliver on a number of fronts to meet these challenges. In particular, we have had to challenge costs, rework scope and find innovations in efficiency and delivery. During AMP6 we continued a company-wide modernisation programme based on “Systems Thinking”. This approach optimises end-to-end business processes, making better use of data and information technology, supported by targeted upskilling of employees. This capability allows us to capture large volumes of data and to monitor and control our systems centrally from our Integrated Control Centre. This has helped facilitate a more proactive approach to our operations and that has enabled us to deliver enhanced levels of service and resilience along with sustainable improvements in efficiency.

We are seeing the benefits of this approach. In 2017/18 we achieved our best ever scores against Ofwat’s qualitative Service Incentive Mechanism (SIM), positioning us first in the industry in the final qualitative survey of the year. In July 2017, we retained our Industry Leading Company status, for the second year, in the Environment Agency’s Environmental Performance Assessment and expect to retain our 4* rating for three years in a row in July 2018.

We have maintained our strong environmental, social and governance credentials, throughout the period, retaining a World Class rating in the Dow Jones Sustainability Index for the tenth consecutive year against a benchmark of ever-rising standards. And in July 2018 we were ranked the top water and sewerage company by the UKCSI.

During AMP6, the business retail market was opened to competition. UUW exited this market and transferred this area of the business to a joint venture with Severn Trent - Water Plus - on 1st April 2016.

We have also experienced a number of significant operational incidents during the period. Severe winter storms in 2016/17 and a major water quality incident at our Franklaw WTW in Lancashire both resulted in major service disruptions to customers. Following these incidents we undertook comprehensive lessons learnt exercises and have shared the lessons with industry stakeholders.

In early 2018 the country suffered a severe weather event with a sharp freeze followed by a rapid thaw. This event presented significant operational challenges for UUW, although we were able to minimise the impact on customers by implementing many of the lessons that we had learnt from the Lancashire water quality incident, from deeper understanding of customers and by successfully utilising the systems thinking approach and managing the incident from our internal control centre.

8.2.2 Wholesale performance commitments

Performance against our performance commitments and outcome delivery incentives was reported within our Annual Performance Report (APR), with our 2017/18 APR containing additional detail on our predicted performance in the remaining two years of the AMP6 period.

The detailed review of the performance against each measure for the first three years of the period, together with our prediction of likely performance against each measure for the remaining two years of the period, from this year's APR, was also reproduced as Appendix A to our PR14 reconciliation early submission (UUW_003_AFPD_ES).

A number of our performance commitments measured the delivery of the outcomes from the AMP6 quality enhancement programmes or other similar programmes of work. Full details on the delivery of all the projects within these programmes was set out in Appendix C to our PR14 reconciliation early submission (UUW_003_AFPD_ES).

Our AMP6 performance commitments, set through the PR14 process, were challenging and required significant improvement to our operational performance in order to avoid a net penalty.

Although our performance levels have generally improved – in many cases significantly so - we have not always been able to meet or outperform the performance targets set. Our performance to date on the wastewater service has been positive and in the first three years of the period, has generated a net outperformance payment of £31.28m. Performance against the water service measures has been more challenging and has generated a net penalty of £29.11m.

The performance targets for some of our measures also become increasingly challenging in the latter years of the period. Overall we estimate that we will end the five year period with a net ODI outperformance payment of £10m across water and wastewater. This includes the £21m that we anticipate as a consequence of accelerating the major scheme that we are implementing in Cumbria to allow us to supply the West Cumbria area with water from Thirlmere reservoir.

Experience of our ODIs over AMP6 has demonstrated that several measures are highly sensitive to external factors which are partially or substantially outside our control, for example if the dry spell that we were experiencing in the spring of 2018 continued for an extended period. Therefore it is difficult to accurately predict the exact underperformance penalty or outperformance payment that we will achieve against our measures, although we would expect to end the period with a net outperformance payment of between zero and £30m.

8.2.3 Wholesale totex incentives

As part of the PR14 process we made a totex menu choice¹ of 106.2 for wastewater and 100.5 for the water service. This resulted in an assumed totex for the water service of £2.348bn and an assumed totex for the wastewater service of £2.940bn.

During the AMP6 period, we significantly accelerated our investment programmes to deliver a better performance against our performance commitments to support the implementation of our systems thinking capability. We expect to be able to deliver the AMP6 programme of work on a like for like and outturn cost basis, for approximately £100m lower than the totex assumed at PR14.

We have, however, committed to an additional £250 million of investment to support resilience projects bringing additional customer benefits both over the next two years and in the longer term. Therefore, we are anticipating that total totex spend will be approximately £150m higher than assumed within PR14 price limits.

8.2.4 Residential Retail incentives

During the AMP6 period we implemented a major transformation programme designed to allow us to both reduce our cost to serve and improve customer service, with investment in this programme being underpinned by an ODI. As we have revised the scope of this programme and have been able to deliver the programme at lower cost than anticipated, we will be returning £4.27m (2017/18 prices) of allowed depreciation to customers. Full details of this programme of work and the basis for the proposed adjustment are set out in Appendix B to our PR14 reconciliation early submission (UUW_003_AFPD_ES).

The success of this programme has been an important driver in the 25% reduction planned to our costs in the AMP6 period. Our customer service as measured through the Service Incentive Mechanism (SIM) has also significantly improved. Although final performance against this measure is dependent upon the relative performance of other companies, using our understanding of the PR14 approach to calculate SIM outperformance payments we are predicting that our improved position will generate an outperformance payment of £12.69m nominal (£11.45m 2017/18 prices).

8.2.5 Other incentive mechanisms

Wholesale Revenue Forecasting Incentive Mechanism (WRFIM)— The WRFIM incentivises companies to improve their revenue forecasting by adjusting future revenues during the AMP6 period to account for any over or under recovery in previous years and applying a penalty if companies over or under recover by 2% more or less than the allowed revenue. Since 2015/16, the wholesale water variance has been no more than 1.3%, being 1.3% in 2015/16, and 0.2% and 0.4% in 2016/17 and 2017/18 respectively. The wholesale wastewater variance has been no more than 0.2% this AMP. Therefore we have not incurred any penalty against this mechanism to date and, based on our latest forecasts, we do not expect to incur one in the remaining two years.

Residential retail mechanism— The residential retail price control also provides for annual revenue adjustment factors to reflect differences between actual and expected customer numbers and numbers of metered customers. Customer numbers have been slightly above PR14 assumptions. We are proposing to recover £6.34m (2017/18 prices) of additional revenue, in line with this mechanism.

Land sales— The land disposals mechanism returns money to customers via reductions to the RCV, from the net proceeds of disposals of land during the period, after the deduction of all offsetting costs. The value of this during the AMP6 period is £6.57m.

Water trading incentives— To encourage better, more sustainable use of water resources within the UK, incentives designed to encourage efficient water trading between companies were introduced for AMP6. We do not expect to benefit from this incentive during the AMP6 period.

¹ The menu choice indicates the ratio of our anticipated expenditure to Ofwat's baseline expenditure.

Reconciling 2010-15 performance—The PR14 price review and final determination made revenue and RCV adjustments that reflected the anticipated AMP5 outturn position against the AMP5 incentive mechanisms. Due to the timing of the review, these adjustments were based upon four years of actual performance and one year of predicted performance. Ofwat published the final position on these measures in December 2017 and these adjustments have been reflected within this submission.

CIS RCV inflation adjustment— Following the PR14 final determination Ofwat identified an adjustment to indexation that should be made in determining the starting RCV for AMP7. The value for each company was set out in its 2010-2015 reconciliation document published in December 2017. This adjustment has also been reflected within this submission.

8.2.6 Application of adjustments to revenue and regulatory capital value

As part of the PR19 process we will adjust the required revenue and wholesale regulatory capital value (RCV) to account for our actual and forecast performance against the incentive mechanisms set out above.

The incentive mechanisms cover the full range of activities within the wholesale and retail businesses, giving outperformance payments or underperformance penalties to companies to ensure that customer bills reflect actual performance and actual customer service. Revenue requirements and wholesale regulatory capital value (RCV) adjustments are calculated using the process and models set out within Ofwat’s relevant “PR14 reconciliation rulebook” methodology^{2 3}.

As part of the PR14 process, the wholesale incentive mechanisms were applied to the water and wastewater price controls. However, for PR19, the impact of these incentives will need to be attributed across four PR19 wholesale price controls. We have therefore made a number of assumptions in attributing these incentives, which are set out in section 2 of our PR14 reconciliation document (UUW_003_AFPD_ES).

At aggregate level the adjustments would increase allowed revenues by £12.38m (2017/18 prices), which translates to £13.22m when applied during the AMP7 period, taking account of financing adjustments. The adjustments also reduce the starting RCV by £14.82m.

Tables 8.1 – 8.5 provide a summary of how we are proposing that these revenue or RCV adjustments are applied to each of the five PR19 price controls. The aggregate adjustments shown in these tables are made up from adjustments through eight separate incentive mechanisms. The impact of each of these mechanisms on PR19 revenues or the PR19 opening RCV value are summarised in Tables 8.6 – 8.12 and set out in detail in Section 2 of our PR14 reconciliation early submission (UUW_003_AFPD_ES).

Table 8.1: Reconciling AMP6 performance for Water network plus (17/18 CPIH FYA)

Water network plus (£m)	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Total revenue adjustment	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)	(1.35)
RCV adjustment	17.94	n/a	n/a	n/a	n/a	17.94

Table 8.2: Reconciling AMP6 performance for Water resources (17/18 CPIH FYA)

Water Resources (£m)	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Total revenue adjustment	0.16	0.16	0.16	0.16	0.16	0.78
RCV adjustment	0.00	n/a	n/a	n/a	n/a	0.00

Table 8.3: Reconciling AMP6 performance for Wastewater network plus (17/18 CPIH FYA)

Wastewater network plus (£m)	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Total revenue adjustment	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.30)
RCV adjustment	(32.76)	n/a	n/a	n/a	n/a	(32.76)

² UUW’s PR14 outcomes are aggregated at service level with the net value being applied as a RCV adjustment (outperformance payment) or revenue adjustment (penalty). As such, the rulebook models have been applied in this way.

³ UUW has a financial ODI which applies to the residential retail control, as no model exists for residential retail ODIs a wholesale model has been used to determine the impact of this ODI on PR19 revenue.

Table 8.4: Reconciling AMP6 performance for Bioresources (17/18 CPIH FYA)

Bioresources (£m)	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Total revenue adjustment	0.00	0.00	0.00	0.00	0.00	0.00
RCV adjustment	0.00	n/a	n/a	n/a	n/a	0.00

Table 8.5 Reconciling AMP6 performance for Residential Retail (17/18 CPIH FYA)

Residential Retail (£m)	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Total revenue adjustment	2.82	2.82	2.82	2.82	2.82	14.09

8.2.7 Revenue adjustments by component

The revenue adjustments resulting from each of the AMP6 reconciliation mechanisms that apply to each PR19 price control are set out in Tables 8.6 to 8.8. As can be seen the PR14 incentive mechanisms generate a net reduction to wholesale water revenues of £0.57m, a net reduction to wholesale wastewater revenues of £0.30m and a net increase to residential retail revenues of £14.1m

Table 8.6: Water Service revenue adjustments £m 2017/18 CPIH FYA prices (post profiling adjustment)

Water Revenue Adjustments	2020-21	2021-22	2022-23	2023-24	2024-25	Subtotal
Final 2010-15 reconciliation	(2.499)	(2.499)	(2.499)	(2.499)	(2.499)	(12.493)
Water trading	0.00	0.00	0.00	0.00	0.00	0.00
WRFIM	0.00	0.00	0.00	0.00	0.00	0.00
Outcome delivery incentive (net penalty)	(5.018)	(5.018)	(5.018)	(5.018)	(5.018)	(25.088)
Totex menu revenue adjustment	7.402	7.402	7.402	7.402	7.402	37.009
Water service: revenue adjustment	(0.114)	(0.114)	(0.114)	(0.114)	(0.114)	(0.572)

Table 8.7: Wastewater network plus revenue adjustments £m 2017/18 CPIH FYA prices (post profiling adjustment)

Wastewater Revenue Adjustments	2020-21	2021-22	2022-23	2023-24	2024-25	Subtotal
Final 2010-15 reconciliation	(2.549)	(2.549)	(2.549)	(2.549)	(2.549)	(12.747)
WRFIM	0.00	0.00	0.00	0.00	0.00	0.00
Outcome delivery incentive (net penalty)	0.00	0.00	0.00	0.00	0.00	0.00
Totex menu revenue adjustment	2.490	2.490	2.490	2.490	2.490	12.448
Wastewater service: revenue adjustment	(0.060)	(0.060)	(0.060)	(0.060)	(0.060)	(0.299)

Table 8.8: Residential retail revenue adjustments £m 2017/18 CPIH FYA prices (post profiling adjustment)

Residential Retail Revenue adjustments	2020-21	2021-22	2022-23	2023-24	2024-25	Subtotal
Residential retail revenue	1.288	1.288	1.288	1.288	1.288	6.438
Service Incentive Mechanism (SIM)	2.445	2.445	2.445	2.445	2.445	12.225
Customer Experience (CEP)	(0.913)	(0.913)	(0.913)	(0.913)	(0.913)	(4.565)
Residential retail revenue adjustment	2.820	2.820	2.820	2.820	2.820	14.098

8.2.8 Regulatory Capital Value adjustments by component

The adjustments for each mechanism that we are proposing to make to the opening water network plus and wastewater network plus RCV are set out in Tables 8.9 to 8.12.

Table 8.9: PR14 Water service RCV reconciliation adjustments expressed in 2017/18 FYA CPIH deflated price base

Water RCV Adjustments excluding the PR09 CIS correction	£m
Net PR14 RCV adjustment carried forward to PR19	36.69
Outcome delivery incentives net outperformance payment	0.00
AMP6 Totex menu RCV adjustment	67.86
NPV effect of 50% of proceeds of land disposals 2014-20	(6.26)
Other adjustment to wholesale water RCV	0.000
Total Water RCV Adjustment	98.29

Table 8.10: All Water Service RCV adjustments expressed in 2017/18 FYA CPIH deflated price base

Water RCV Adjustments (total)	£m
Net impact of PR14 mechanisms	98.29
PR09 CIS RCV indexation adjustment	(80.35)
Total Water RCV Adjustment	17.94

Table 8.11: PR14 Wastewater service RCV reconciliation adjustments in 2017/18 FYA CPIH deflated price base

Wastewater RCV Adjustments excluding the PR09 CIS correction	£m
Net PR14 RCV adjustment carried forward to PR19	52.93
Outcome delivery incentives net outperformance payment	35.20
Totex menu RCV adjustment	15.51
NPV effect of 50% of proceeds of land disposals 2014-20	(0.31)
Other adjustment to wholesale wastewater RCV	0.000
Total Wastewater RCV adjustment	103.33

Table 8.12: All Wastewater Service RCV adjustments expressed in 2017/18 FYA CPIH deflated price base

Wastewater RCV Adjustments	£m
Net impact of PR14 mechanisms	103.33
CIS RCV indexation adjustment as at 31 March 2015	(136.09)
Total Wastewater RCV adjustment	(32.76)

As can be seen from Tables 8.9 and 8.11 the PR14 incentive mechanisms generate a net increase to the opening RCV for both the water and wastewater services. As shown in Tables 8.10 and 8.12, this increase is however offset by a reduction to each RCV as a consequence of the PR09 CIS indexation adjustment. The net impact of these adjustments is to increase the Water RCV by £17.94m and to reduce the Wastewater RCV by £32.76m.

8.2.9 Impact of the adjustments on customer bills

Company performance against the AMP6 incentive mechanisms impacts upon company revenues in AMP7 and in the longer term, with this adjustment in revenues being reflected in customer bills. The impact of each incentive mechanism on an average residential bill is shown in the Table 8.13. The net impact of the proposed adjustments would be to increase average residential bills by approximately £0.93 per annum for the AMP7 period.

Table 8.13: Impact of adjustments on an average annual residential bill (£)

Incentive mechanism	Bill Impact ⁴ (£)
Outcome delivery incentives - water	(1.48)
Outcome delivery incentives - wastewater	0.25
Outcome delivery incentives – residential retail	(0.34)
Service Incentive mechanism (SIM)	0.92
Totex menu reconciliation - water	2.76
Totex menu reconciliation - wastewater	0.77
Wholesale revenue forecasting incentive mechanism	0
Residential retail mechanism	0.49
Uncertainty mechanism (water rates)	0
Water trading	0
Land disposals	(0.06)
Final reconciliation of 2010-15 performance	(0.72)
PR09 Capital incentive scheme RCV inflation correction	(1.66)
Total	0.93

8.3 Engagement on our AMP6 performance

8.3.1 Regular, transparent reporting of progress

As part of our last price review submission, we committed to providing annual reporting on progress against our targets during the AMP6 period. We also committed that our reporting would be overseen by YourVoice, the North West Customer Challenge Group, which had overseen our engagement with customers during the development of our PR14 business plan.

In line with this commitment, we currently develop and publish an Annual Performance Report⁵ and a range of supporting publications, which are designed to transparently set out our progress against our AMP6 commitments and targets.

To minimise the potential for ambiguity in the interpretation of our performance commitments, we also developed and published a performance commitment definition document. This document is designed to complement the information contained with the United Utilities company specific appendix to the PR14 final determination and provides detailed definitions and interpretations for all of our performance commitments. Our definition document for AMP6 is published on our website.⁶

Two key aspects of our annual reporting are the consultation and the publication of our annual assurance plans and the publication of a customer-focused version of the APR, which achieves the Crystal Mark for plain English. We also use other channels to explain our performance to customers and other stakeholders such as our website, social media and a customer friendly video.

We have worked with YourVoice to review and continually enhance the coverage and clarity of our reports and by taking on board their comments, we have sought to improve both the presentation of, and engagement with our reporting.

⁴ Bill impact is calculated based on the average residential bill

⁵ <https://www.unitedutilities.com/corporate/about-us/performance/>

⁶ https://www.unitedutilities.com/globalassets/z_corporate-site/about-us-pdfs/business-plan/uuw_definition_documents_v3_april_2017.pdf

8.3.2 Feedback on our reporting

To obtain feedback — and to continue to improve the coverage and clarity of our Annual Performance Report — over two weeks in October 2017 we posted items on social media about our APR, using advertising and geographical targeting to gain large exposure to the North West.

One set of posts was targeted to drive online traffic towards detailed information about current performance levels and this achieved 10,000 views (6,000 to the annual performance webpage, the rest across blogs used to raise awareness on specific points such as water efficiency).

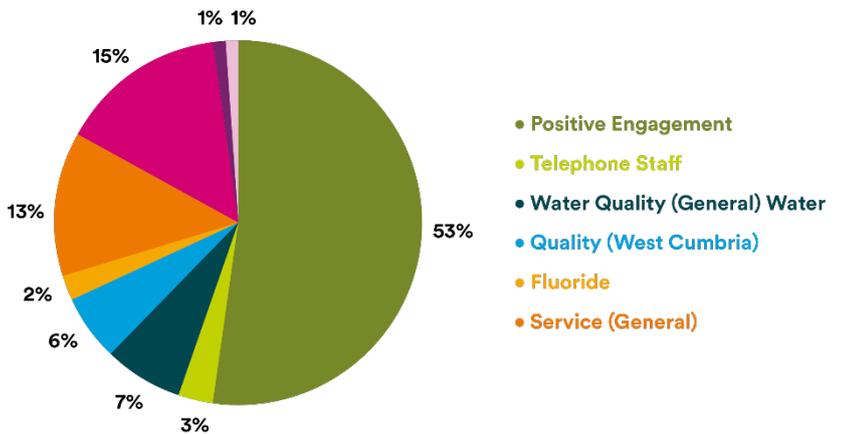
Prior to this campaign, we received just 120 page views over a two week period so this was a marked contrast. Table 8.14 summarises the scale of engagement achieved on the APR.

Table 8.14: Scale of engagement

Platform	Total reach	Total engagements
Facebook	311,895	6,566
Twitter	289,786	13,879
LinkedIn	40,580	678

Our posts were designed to encourage two way dialogue with customers and generated exchanges on a variety of topics. The chart opposite shows a breakdown of the 380 social media conversations.

Figure 8.1: Feedback topics on social media campaign October 2017



8.3.3 A range of targeted publications

The Annual Performance Report (APR) is one of a number of publications on our website that together are designed to ensure that the reporting of the performance of UUW and the United Utilities Group is reliable, accurate and transparent.

The key report from a corporate and financial perspective is the **United Utilities Group PLC Annual Report and Financial Statements**⁷. This report is now published as an interactive web page on a dedicated micro site within the UU website and is designed to provide detailed information on the financial position and governance of the group, mainly targeted at equity and debt investors.

To complement this report, the **United Utilities Water Limited Annual Report and Financial Statements**⁸ provides detailed information on the financial position of UUW and forms the basis of the Regulatory Accounts, which are set out within the Annual Performance Report.

Information to describe the way that the group has operated and demonstrate the extent to which we have upheld the highest standards of performance with respect to the way we work with employees, customers and our impact on the environment, is published on our **corporate responsibility website**⁹. This website is used to communicate relevant information more regularly than would be the case through a traditional annual report.

8.3.4 Engagement on the outcome of the PR14 reconciliation process

We have actively engaged with YourVoice on our performance against our performance commitments and where necessary on our improvement plans, throughout the AMP6 period.

⁷ <http://unitedutilities.annualreport2018.com/>

⁸ <https://www.unitedutilities.com/corporate/investors/reports-and-results/company-reports/>

⁹ <https://corporate.unitedutilities.com/corporate/responsibility/>

We have also reviewed in more detail with YourVoice our approach to the three performance commitments where there is potential ambiguity of the outcome assessment. These are:

- A1: Drinking Water Safety Plan risk score (Wholesale Water price control)
- S-D3: Rivers improved wastewater (Km) (Wholesale Wastewater price control)
- R-A2: Customer experience programme (Residential retail price control)

We proposed changes to the two wholesale ODIs, with these changes being reflected in a corrigendum published on Ofwat's website. The basis and potential impact of these revisions had been reviewed in detail in advance by members of YourVoice, which provided support for the revisions.

The customer experience measure, and the improvements that this measure has been designed to generate, has also been reviewed with YourVoice several times during the period. We reviewed details of the programme, including the rationale for the revised scope of the programme, with the group. Details of this measure and the reviews and assurance that have been applied are set out in Appendix B of our early PR14 reconciliation submission (UUW_003_AFPD_ES).

The PR14 early reconciliation submission, including the results of the PR14 incentive mechanisms and the impact that this will have upon AMP7 bills was reviewed with YourVoice meetings and sub-group meetings in May, June and July 2018. As part of this review it was agreed that anticipated future performance levels would be added to the customer summary of our 2017/18 APR, which is available on our website¹⁰.

8.4 Assurance

The data used to populate the data tables and models for this submission has been derived from three main sources:

- **Actual data for the first three years of the AMP6 period:** this data has been subject to detailed assurance processes as set out within each year's APR
- **Predicted data for the remaining two years of the AMP6 period:** this data has been subject to level 1 (executive / director) review and sign off and has been subject to independent review
- **Historic data from AMP5 or previous periods:** this data has already been determined by Ofwat and has been used without any subsequent adjustments within this submission

The actual data for the first three years of the period, has been subject to a detailed three lines of assurance approach.

- Data providers, their managers and business unit directors have produced and approve the data and audit trails that were developed to support the values and data reported within this submission. Reported data is reviewed and signed off before presentation to the U UW Board
- The Strategy and Regulation team has provided the assurance and governance framework for the data collection and review process and has provided oversight of the application of this process. UU Corporate Audit has undertaken a review of the accuracy of the data within the submission and to confirm that the assurance framework has been fully applied
- The U UW financial auditor (KPMG) or the U UW independent technical auditor (Halcrow Management Sciences (HMS)) has reviewed each of the data methodologies and audit trails and have provided audit opinions or independent technical assurance statements for the U UW Board. These opinions or statements are published within each year's Annual Performance Report

The data for the final two years has been based upon predicted performance. Assumptions for the final two years have been developed on a bottom up basis and have been developed to be consistent with historic performance or expenditure levels, but taking account of ongoing plans and proposed future interventions. The predicted performance levels have been reviewed and endorsed by the director accountable for delivering the performance or expenditure levels.

¹⁰ <https://www.unitedutilities.com/corporate/about-us/performance/annual-performance-reports-2015-2020/>

The methodology used to undertake the analysis and the checks and controls that have been put in place to confirm that this data has been transposed and analysed correctly has been fully documented, with these documents and supporting data being subject to detailed internal governance and review processes.

The information within the submission has also been subject to an independent review undertaken by UU Corporate Audit. This review had the objectives of confirming:

- The validity and consistency of the data reported in the supporting data tables
- Consistency of the commentary with the underlying data
- Compliance of the reported data and commentary with key aspects of PR19 methodology and PR14 reconciliation rulebook
- Overall governance arrangements in place to ensure the regulatory data is complete and accurate and reported in line with the required timescales
- Confirmation that assurance activities have been completed
- Board Assurance statements are supportable, in particular in respect of the stated assurance activities

The review concluded that: *“Based on the work carried out, we are satisfied that the overall governance and assurance arrangements in place to ensure the accuracy and completeness of PR14 reconciliation early submission data, have been followed. Our sample testing also confirmed that the submission data reported is supported by underlying records and systems, is consistent with previously reported data within the Annual Performance Report, and has been compiled in accordance with the PR14 Rulebook.*

In addition, we are satisfied that the statements within the associated Board Assurance Statement are supportable.”

The scope of the Uuw Technical Auditors review of the 2017/18 regulatory reporting process was also extended this year to review the forecast data for the remaining two years of the period.

This review is published within our 2017/18 Annual Performance Report and concluded that *“On the basis of our audit work and with exceptions as noted in Appendix 1 and 2, we are satisfied that the information within and which supports the RR18 has been assembled using appropriate data and methodologies and provides a reliable representation of Company performance. There is also good evidence of senior management engagement, governance and programme management”.*

The PR14 reconciliation submission and the results of the assurance process were reviewed at the June 2018 Uuw Board meeting, which endorsed the submission and approved the signature of a supporting Board Assurance statement.

8.5 Lessons from AMP6 and achievability of our AMP7 plan

As we have demonstrated throughout this business plan, we have grounded our proposals for the AMP7 period and the longer term on the experience that we have gained and the lessons that we have learned from the PR14 process and through the development and delivery of our programmes of work during AMP6.

This section of the chapter summarises how we have embedded this learning into our:

- Expenditure proposals
- Performance commitments and outcome delivery incentives
- Customer service proposals
- Capital delivery
- Environmental and Quality regulation
- Operational and Financial resilience

8.5.1 Expenditure

Since we accepted the challenge to our expenditure proposals at PR14, the company has undergone a step change in efficiency. This has enabled us to successfully deliver the AMP6 plan and, on a like-for-like and outturn basis, we expect to outperform the final AMP6 cost assumption by £100m. We have also reinvested £250m in additional resilience

projects, meaning that the final reported spend will be circa £6.1bn, £150m higher than the outturn FD assumption of £5.95bn.

This improvement against our original cost estimates reflects the benefits we have achieved from successfully embedding a strong culture of innovation into the company, challenging ourselves and our regulators on required scope, as well as identifying wide-ranging procurement and delivery efficiencies. Our AMP7 plan reflects this learning and embeds these changes to ensure that we are presenting an efficient plan at the outset.

Our proposed AMP7 cost projections build on the benefits that we have seen through innovation, which has already supported the delivery of £87m efficiencies in AMP6. During the AMP7 period, we expect to significantly exceed this and use innovative new approaches to support the delivery of a further £358m of efficiencies. Details of our approach to innovation are set out in more detail in section 6.3 of Chapter 6, and in supplementary document S5001 (Innovation in Action).

Our costs are informed by a rigorous approach to cost benchmarking, which has made extensive use of market testing. Our Market Engagement Methodology (MEM) (set out in more detail in section 6.4 of Chapter 6) has been developed in association with the University of Salford and takes a rigorous approach to evaluating “make or buy” decisions. The MEM has provided us with deeper understanding of the best way to engage with the market to procure required services. We have already started to implement some of the recommendations from the process, which is anticipated to deliver £359m of savings over the five year period.

As well as this detailed “bottom up” examination and challenge to our costs, we have also undertaken a number of exercises on a “top down” basis which have demonstrated that we are proposing an efficient plan, both in comparison with our peers and in comparison with other sectors. These exercises include:

- Comparative efficiency analysis with other sectors¹¹ (supported by Deloitte), which demonstrated that our proposed AMP7 efficiency proposals compare well against the best performance being achieved in other sectors
- Engaging 3rd parties to better understand the drivers of comparative wholesale costs (supported by Arup and Vivid Economics) and comparative residential retail costs (supported by Equifax and Reckon). This work has helped us to better understand our own costs and has also helped us to understand how to most effectively compare our costs against others in the water sector
- Developing a proposed approach to comparative cost assessment, which demonstrated that our plan is considerably more efficient than reasonable assumptions of industry benchmarks

Taken together, we therefore consider that there is strong evidence, supported by both bottom up and top down analysis, that our plan is ambitious and stretching in terms of its efficiency, but is also deliverable based on what we know about our own costs and from our engagement with the market.

8.5.2 Performance commitments and outcome delivery incentives

Our AMP6 performance commitments defined through the PR14 process, required the company to make a step change in performance. The p10¹² and p90 values associated with our ODIs and published within the PR14 final determination showed that the sum of the p10 penalties was circa £450m whereas the sum of the p90 outperformance payments was only circa £150m, with the significant majority of this penalty risk coming from the wastewater business.

During the first three years of the AMP6 period, we have implemented our Systems Thinking approach, which is designed to optimise how we use data, the way we manage our assets and how our people work on a day to day basis. This ensures that we can address asset and network problems before they affect customers and respond to incidents more quickly and effectively when they do occur. This approach has improved our underlying performance in both the water and the wastewater services, although the impact on our wastewater performance commitments has been more pronounced. We have continued to improve our industry leading performance on avoiding pollution incidents and have also successfully avoided the underperformance penalties we initially anticipated for sewer flooding and wastewater treatment works compliance.

¹¹ T6003 - Cross sector efficiency benchmarks - Deloitte

¹² The p10 and p90 scenarios means there is a 10% chance of performance being either higher or lower than these assumed levels

The position on the water service has however, been more disappointing and we have failed to meet a number of our performance commitment targets in the first three years of the AMP6 period. A number of our targets are very susceptible to bursts on major mains. To improve our performance in this area and make our network more resilient to major bursts, we have implemented a programme of renovation of high risk mains, have provided alternative supplies into areas that were previously fed from a single source and have purchased a fleet of alternative supply vehicles. This can help ensure that supplies are restored whilst we are making repairs to the network and therefore minimise the impact of incidents on customers.

Although the benefits of this approach have not yet been reflected in our outcome delivery incentives, it did allow us to proactively plan for and manage the impacts of the 2018 freeze thaw event and minimise the impact of the event on customer service. We expect our performance to continue to improve in this area in both the remaining years of AMP6 and throughout AMP7.

The other key factor which has led to underperformance penalties in the water service has been customer contacts for water quality or aesthetic reasons. In many cases, these complaints have been the result of a switch in water supplies, for example when we switched supplies from surface water sources to ground water sources in West Cumbria during 2017. Although the alternative source was demonstrably wholesome and complied with DWI tests, large numbers of customers still contacted us about the change. We have learnt from this and implemented a major communications exercise prior to a change in supplies in West Cumbria in 2018.

We have also had disappointing performance against our free meter optant and per capita consumption performance commitments. As set out within our Annual Performance Report, our target for meter optants was based upon an industry model, which has proved unreliable, with levels of optants being consistent with historic levels. Despite this we have implemented a number of innovative approaches including targeted advertising on selected customer bills to increase uptake. We have also changed and calibrated the model that we are using to predict meter optant levels for AMP7. The position on per capita consumption is less clear, we have not seen the reduction we had anticipated, with consumption levels in 2018 increasing significantly as a result of the extended hot and dry spell that is still ongoing at the time of drafting this plan.

We have taken a stretching and ambitious approach to setting our targets for the AMP7 period, with this approach being detailed in Chapter 5 of this business plan. Targets have been carefully calibrated to customer preferences and we have complied with Ofwat guidance in relation to common ODI definitions and targets. In some cases, such as pollution incidents, we are already a leading performer and in these areas we are confident that we will be able to sustain a strong performance, building on the success of AMP6.

In some other cases, moving to a leading position is more challenging. As we have set out in relation to supply interruptions, whilst we have accepted an upper quartile target – and will strive to meet it – our current expectation is that achieving the target is not the most likely outcome. We are, however, committed to a clear focus on trying to meet or beat the target and will stretch ourselves as far as possible to deliver an upper quartile performance, in line with Ofwat expectations.

On internal sewer flooding, we believe that it is unrealistic to move from our current performance to upper quartile performance over a single AMP, whilst maintaining costs at a reasonable level that has customer support. We also believe that there are significant variations in reporting and detecting incidents and that greater standardisation of this will need to occur in the run up to and during AMP7.

We do, however, recognise the challenge for us to improve in this area and we know that this is an area where customers rightly expect a stretching performance. On this basis we have accepted the upper quartile target for our AMP7 performance commitment and will work towards it, even though we cannot currently envisage meeting this target over a single AMP. Having considered the current level of performance and the degree of improvement required, we have set ourselves what we believe is a more likely trajectory for improvement to upper quartile, running across AMP7 and AMP8. We will seek to deliver these improvements in AMP7 within the assumed level of totex that we have submitted as part of the plan and will need to innovate and excel in order to meet the AMP7 level of performance that this two AMP trajectory implies, but if we do achieve it then we consider we would be well placed to realistically improve to upper quartile during AMP8.

To ensure that we are transparent in our reporting, as well as reporting against the upper quartile AMP7 target in our annual performance reporting, we will also report against our two AMP improvement plan, so that the progress being made is clear to customers and other stakeholders.

We consider that this is a responsible approach to improving performance in this area. The alternative approach of seeking to deliver the required level of improvement over a single AMP is both likely to be undeliverable and prohibitively expensive due to the longstanding issues which arise due to the historical configuration of the sewer network, the topography, population density and environmental circumstances of the North West which impact drainage.

8.5.3 Customer Service

Customer Service – Residential retail

The first SIM survey placed UUW at the bottom of the league table and significantly behind industry norms. Since then we have we have successfully improved customer service and have made a step change in performance.

In AMP5 we managed to improve sufficiently to avoid a financial penalty, with this improvement continuing through the AMP6 period to a position where we now expect to receive a financial outperformance payment in PR19. Having improved to an above average overall position for the AMP and in 2017/18, achieving the 3rd highest score amongst the WaSCs and 6th highest score overall.

External benchmarks also reflect this significant improvement. In the July 2018 UK Customer Service Institute (UKCSI) rankings, we were the most improved utility brand in the rankings and we are currently the number one Water and Sewerage Company, the second in the water sector and fourth out of twenty eight companies in the utilities segment. The UKCSI is a national survey which looks at the customer service offered by many brands, from Amazon and Mercedes to British Gas. In August 2018 we also become one of only 14 companies in the country – and one of only 3 utilities – to be awarded the UK Customer Service Institute Service Mark with Distinction. This is a national standard recognising an organization’s achievement in customer service, and its commitment to upholding those standards.

This improvement has not required significant increases in cost; to the contrary, cost to serve has been reducing from an average of £51 per customer in 2014/15 to £38 per customer in 2017/18. Particularly pleasing in this context has been our reduction in annual bad debt charges, from £78m in 2014/15, to £50m last year and forecast to be £35m/year at the end of AMP7. We have costed and benchmarked our plans thoroughly and believe that the costs proposed in our plan continue to be commensurate with an upper quartile cost position against the water sector as a whole during AMP7.

In AMP6 we have learnt from network events and radically redesigned our Priority Services for customers in vulnerable circumstances, and in AMP7 we plan to increase the number of customers registered for these services fivefold from 2015/16 levels.

We have also seen how other sectors are using advanced customer analytics to act before customers fall into debt, and we will increasing use segmented promotion of new services such our “Lowest Bill Guarantee” and Payment Break options to help at risk customers avoid falling into debt.

The pace of change in the retail sector has been rapid, and the preparations we have made in AMP6 will ensure that the new digital services customers have come to expect are available to them in the future. For example our new “Water Usage Report” enables metered customers to see their water usage online, and also access tailored advice on how they can save water and money. We believe that this places us in a strong position to deliver for customers during AMP7 and beyond and although the measurement of C-MEX has yet to be established, we would expect the improvements that we have already made and the plans we have for AMP7 to reflect positively in our C-MEX performance.

Customer Service – Developers

As part of the PR14 process we defined a performance commitment, called “Delivering our commitments to developers, local authorities and highway authorities”. This measure tracks the timelines of our responses to quotation and our completion of works and we have exceeded our target in each year of the AMP6 period.

During the AMP6 period we established a Developer Services team that regularly engages with developers and other key stakeholders by a variety of means.

We actively engage with local planning authorities to understand development and major infrastructure projects in our region, to allow us to target our investment where and when it is required. We are an active participant in events

organised by Water UK to help support and drive industry wide improvements, and support and participate in events and forums led by organisations such as the Home Builders Federation (HBF).

We hold regular drop in sessions for stakeholders to ensure that we work with them to resolve concerns they might have, we also hold forums to update stakeholders on standards for them to work to. Twice a year we send out customer satisfaction surveys to over 800 stakeholders to give us direct feedback on our performance and to support our future plans. Our stakeholder engagement culminates with our annual Developer Day, which is an industry leading event with over 150 attendees including developers, Ofwat, self-lay providers (SLPs), the HBF, and Fair Water Connections.

We directly used this feedback and consultation process in developing our 2018/19 charges for new connections, with CCWater, the Home Builders Federation and Fair Water Connections confirming that *“We had consulted in a proportionate, timely and effective manner”*.

The success of this approach was also echoed in the 2018 Defra review of regulation of the water industry, where the HBF were quoted as saying *“We have a phenomenal working relationship with United Utilities in the north-west of England, where we have brought about a whole new concept of service pipe installation and dedicated training, with the aim of reducing leakage. It was through United Utilities that we produced above-ground automated meter reading”*.

We have reflected this feedback and built on the lessons we have learnt during AMP6 in developing our AMP7 plan to ensure that our proposals are stable and predictable, transparent and customer focused, offers fairness and affordability, and deliver environmental protection. Our Developer Services team are currently implementing a new operating model to support this proposal and to ensure that we have the right capabilities in place to successfully deliver our clearly defined success criteria.

Customer Service – Business retailers

The formation of the business retail market in April 2017 presented a substantial challenge for all water companies not least because of the tight timescales in preparing for what was considered by many to be the biggest change in the water industry since privatisation.

UW was heavily involved in the market preparations being one of the three founding members of the market operator, which was key to the delivery of market opening. The first year of the new market saw continuous change to processes and systems as the market matured, relationships developed and dependencies between trading parties and market activities became clearer.

We prepared well for the change by putting in place a number of new IT systems and multiple new business processes that allowed a smooth transition into the new market. This preparation together with a continuous and positive engagement with retailers and a genuine desire to improve the services that we offer has meant that we have performed well. In March 2018 Water Retail magazine published findings of research it undertook to understand wholesaler performance from the point of view of retailers, which ranked UW as the number one wholesaler in the market.

Our performance is also reflected in our Operational Performance Standards, which measure how quickly we undertake a range of operational measures including metering, disconnections, complaint handling and allowance requests. With our performance increasing from 76% at market opening to 99% at March 2018 with UW being the best performing water and sewerage company in June 2018.

In successfully meeting the challenges of implementing the business retail market we have built up a substantial knowledge base of how to meet the complications and opportunities that further competitive markets will bring. The importance of engaging early in the development of new markets, alongside a strong focus on customer service, communications and effectively responding to feedback—together with the ability and agility to react to the changing needs of new markets—will stand us in good stead going forward.

Customer Service – Business customers

Following the establishment of the business retail market accountability for managing billing issues for business customers transferred to their retailer, with UW retaining responsibility for delivering operational services. Business customers' initial point of contact is their retailer, however, where they do directly contact UW this is via our central

call centre. Call centre staff are trained to ensure that they handle calls appropriately and treat customers of all retailers in the same way.

In the autumn of 2017 in a bid to understand our current performance levels and to help us to develop our future service propositions, we undertook independent research to help us to understand what business customers expectations were in terms of customer service, operational “distress” requests and operational “installation” requests.

The feedback on customer service, was broadly consistent with the feedback from residential customers and was categorised as: Empathy (treating customers individually); Accessibility (ease of two way contacts); Efficiency (clear plan and effective delivery); Speed (fast resolution); and Integrity (taking ownership and being transparent). This feedback echoed the residential customer feedback, with our segmented AMP7 customer service propositions being designed to ensure that we are able to meet these expectations.

The feedback on current operational service was generally positive for installation requests (new or replacement meters or water or sewerage connections), although the feedback was more mixed for distress requests (issues with existing equipment, water quality or availability or sewer flooding). The research also highlighted three focus areas for business customers:

Resilience: Providing a resilient service (such as continuous supply, reduced leakage, improved asset health e.g. sewer network, reduced sewer flooding). Our plan proposes stretching improvements in performance, which are supported by our proactive systems thinking strategies.

Service response: Resolving service issues, such as interruptions to supply, quickly. Efficient turnaround of site activities and getting it rights first time is of high importance. We have put in place a continuous improvement plan that ensures effective routing and tracking of service requests and inquiries.

Customer communications: Providing regular updates throughout a failure in service. This forms a key part of both our customer service strategy and of more proactive operational strategies.

8.5.4 Capital Delivery and Supply Chain

Our AMP6 experience and performance shows that we have strong credentials on capital delivery and use of the supply chain, which has allowed us to efficiently deliver our investment plans without compromising on quality.

A key driver in the improvement that we have been able to achieve in our capital delivery has been the establishment of the Time, Cost, Quality index (TCQi). This is an internal index which measures the extent to which we deliver our capital projects on time, to budget and to the required quality standards.

TCQi was initially put into place during AMP5, with a new tougher measurement mechanism put in place at the start of the current AMP to continue to drive more effective and efficient delivery of our capital programme and to reflect the changes introduced in the AMP6 regulatory contract including:

- Adoption of totex
- Outcome based delivery regimes
- Non- capital commitments

The index is designed to measure whether the outputs or outcomes required from the programme are delivered on time, to the satisfaction of our regulators and comply with, or exceed, the financial outperformance targets fixed in the company business plan. The index is measured as a percentage, which is equally split between the time, cost and quality elements. This approach ensures balanced decision making over the overall AMP period and focuses management attention on the key activities that drive the successful delivery of our AMP6 capital programme.

Despite this tougher approach, our TCQi score has remained high for the first 3 years of the AMP, demonstrating that we are consistently delivering a high quality capital programme, on time and on budget.

An example of the improvements that we have made is the major project we are undertaking to supply water to the West Cumbria area from Thirlmere reservoir. This is the single biggest project to go through the Lake District National Park in recent times, with the constraints of the planning process being key to successfully delivering the project.

We took a very proactive and innovative approach to engage the communities of Cumbria. Core to this approach was a Planning Performance Agreement funded by UUW and created in conjunction with Natural England, the Environment Agency, the three Local Planning Authorities, and Cumbria County Council. We were clear from the outset that local

communities and stakeholders would be encouraged to have their say on any plans, creating a wide range of opportunities for local people and groups to give their views and raise any concerns to help us develop our proposals. We also developed a Construction Code of Practice, giving confidence that the environment would be protected during construction, and in particular to support the Habitats Regulations Assessment (HRA).

We submitted a planning application in January 2016 and in November 2016, four months ahead of schedule, all three local planning authorities voted unanimously to grant full planning permission.

This approach to stakeholder engagement, together with our commercial strategy of splitting the project into five contracts and establishing a dedicated commercial team has enabled the project team to achieve contract awards in 2016-17. The project is now underway and is in its second year of construction with progress continuing to be ahead of schedule. We now expect to be able to complete the construction of the transfer main during 2019-20, which was originally due for completion in 2021-22 and, subject to potential construction delays, we would hope to be able to complete the service reservoirs in 2020 and then complete the final part of the project, the new Water Treatment Works WTW towards the end of 2020-21 a year ahead of schedule.

Our programme and project management capabilities are now well established with strong governance and embedded processes to support delivery, manage risks and achieve business benefits. We prioritise our investment programmes, projects and integrated business and asset plans through a dedicated programme change office to deliver change in a structured and consistent way.

We have also created better alignment and integration between our capital delivery partners and engineering service providers with these structures being directly aligned to our operating model. We have also focussed on supply chain management to deliver an end-to-end contract management service. This work has included contract strategy, tendering and category management, which provides a risk-based approach and relationship management programmes for suppliers.

Overall, we consider that these achievements provide good evidence that the company can deliver capital projects within the programme in a way which is consistent with the stretching assumptions we have made in the plan and that customers and other stakeholders should have confidence in our competence in this area.

8.5.5 Environmental and quality regulation

We have delivered industry leading environmental performance in AMP6. We are one of only two companies to achieve a 4 star, industry leading rating, three years in a row in the Environment Agency's Environmental Performance Assessment (EPA). Likewise, we have also delivered a strong performance on water quality, in the DWI Chief Inspector's Report 2017 we were the leading WaSC for Mean Zonal Compliance and equal 4th overall.

However, we recognise that AMP7 will bring new challenges and tougher performance requirements, which is something we have worked hard to prepare for. We have had extensive engagement with both the EA and DWI in the formation of this plan.

We have worked closer than ever before with the Environment Agency to review and agree the most appropriate permit standards to meet the environmental outcomes required by legislative drivers. In addition we have collaborated with the Environment Agency to update the cost benefit analysis which underpins the ministerial decision on Water Framework Directive requirements which is due to happen in 2021. This gives us a high degree of confidence that the needs included within the third version of the Water Industry National Environment Programme (WINEP3) are appropriately justified and will be confirmed in 2021. Our review has entailed three key steps:

Water quality planning – Using our extensive suite of sewer network and water quality models we have worked with the Environment Agency to review which discharges are contributing to breaches of environmental standards and the most appropriate permit standards required to address the issues that have been identified. Additionally we have ensured that we are delivering our fair share of water quality improvements and no more. The extent of change in requirements triggered by our collaborative review was significant, for example 43 phosphorus limits changed between the start of our review in early 2017 and the issue of WINEP3 in March 2018. Additionally between the issue of WINEP2 and WINEP3 we were able to use our coastal models to provide evidence to reduce the number of discharges that needed to be included in our business plan for bathing and shellfish waters from 14 to 7.

Solution development – We have used our knowledge of the impacts of our discharges to allow us to take an Integrated Catchment approach to solution development. This has resulted in several innovative measures being

included in our plan including; a significant scale wetland treatment solution at Burscough WwTW which delivers enhanced natural capital benefits, a catchment permitting solution to address deterioration in phosphorus concentrations in the Manchester Ship Canal and a suite of integrated catchment interventions in the Petteril catchment to address nutrient enrichment and flood risk. Where end of pipe solutions have been identified as the most effective way of addressing a need we have used our generic high level solutions to guide solution development and we have market tested our costs. In situations where a potential WINEP requirement is likely to lead to inefficient investment due to the risk of significant future drivers we have worked with the Environment Agency to defer these schemes until wider needs are understood, for example at Wigan WwTW.

Economic appraisal – The justification for Water Framework Directive river quality improvement schemes will ultimately be determined by ministers who consider whether there is no case for changing the water quality objective due to disproportionate cost. We have worked closely with the Environment Agency to review and update the very detailed cost benefit analyses which underpin the Water Framework Directive. Our review has not only looked to ensure solution costs are appropriately represented but also that the benefits associated with our measures are justified. We have also shared lessons learnt from the process to make future collaborations more efficient. The outcome of this updated economic appraisal supported the need for £500m of improvements to our discharges in order to meet either good or moderate status under the Water Framework Directive. Without economic appraisal the scale of our investment to get all rivers to good status would have been in the region of £1,100m.

We have also developed and justified and worked with the Drinking Water Inspectorate (DWI) to agree the improvement schemes that are required to meet the requirements set out in the DWI guidance document “Long term planning for the quality of drinking water supplies”. The schemes fell under one of three major requirements:

Drinking Water Safety Plan (DWSP) – We used our Wholesale Risk and Asset Planning (WRAP) process, to undertake the DWSP risk assessments and to identify the projects that met the DWI’s criteria for schemes to improve the quality of drinking water. WRAP is our process to identify, quantify, validate, assess, prioritise and cost our water quality and resilience risks in a systematic way, monitor strategic performance requirements and prioritise these for investment or operational management. This process aligns with the International Standard for Asset Management (ISO55000).

Technical Submission and the Long Term Drinking Water Quality Plan – In December 2017 we provided the “Annex A” documentation required by the DWI guidance note for five drinking water quality improvements. In addition for the following long term water quality schemes and innovative initiatives for AMP7, we provided more bespoke documents:

- Manchester and Pennine Resilience project
- Water Fittings campaign for homes and public buildings
- Thirlmere catchment resilience project

We discussed our plans regarding water quality for 2020-2025 and beyond with the Inspectorate in person in November 2017. We also met with the Inspectorate in January 2018 to specifically provide additional information on the Manchester and Pennines resilience project. The DWI supported the needs and agreed that the “Annex A” schemes would be formalised in a legal instrument and provided a letter confirming that they agree with our approach and that the work set out in the bespoke documents should be included in the business plan.

We submitted our Long Term Water Quality plan to the DWI on 31st May 2018, and at the time of writing we have received no further queries or comments from the Inspectorate. This approach to proactively working with the quality regulators, means that we submit the plan with the support of the quality and environmental regulators, an excellent understanding of the requirements and having already thought very hard about how we can deliver the outputs at the most efficient cost.

8.5.6 Resilience

Operational resilience

During AMP6 we have significantly enhanced our resilience particularly on the water service building on the lessons we learnt from a series of incidents in 2015; three major water supply incidents and a major flooding event. As a result we believe that we are now providing industry-leading levels of resilience in many areas.

We have also held events to share our learning across the industry. By sharing this knowledge we hope that we have contributed to future industry resilience by helping to avoid future incidents, assist with quick recovery and build confidence in the resilience of the public water supply.

Actions we have taken to build our resilience in AMP6 include:

- **Strengthening of our incident management procedures** – including more detail and better alignment with best practice guidance, training for senior managers, more incident exercising and development of more comprehensive contingency plans
- **Enhancement of our approach to customer and stakeholder management** – we have revolutionised our customer communications making use of multiple communication channels and particularly bolstered our support to vulnerable customers during events
- **Improvements to operational practices** – we have new infrastructure in place including the ability to start up our treatment works to waste and to install UV treatment at key points in our water system. There has also been an improvement to operator training and risk assessments at sites through our new HazRev process and centralisation of our Drinking Water Safety Plans. Our Integrated Control Centre with enhanced monitoring and forecasting capability means we can react more quickly when things happen and by 2020 we will have 44 large tankers and 5 small tankers available to keep supplies flowing to customers
- **Development of our risk management framework** – the creation of our risk breakdown structure and embedment throughout our business processes will enable a better understanding of risk in future and improve decision making

The investment we have made in our assets, people, systems and processes particularly over the last few years has enhanced our ability to deliver a resilient service for customers. This has been demonstrated both in our overall improvement in customer satisfaction and in how well we have coped in recent incidents such as the freeze thaw event in February/March 2018.

Through the remainder of AMP6 and into AMP7 we will continue to build on the good resilience base that we have created, focussing on areas that have the greatest scope to deliver the resilience improvements that customers expect such as our water and sewerage networks. We will also continue to play an active role in the industry as we determine what good resilience looks like and how we ensure we deliver a resilient water and wastewater service for customers today and for future generations.

Financial Resilience

Chapter 4 of this business plan demonstrates that we are the frontier company in the industry in terms of financial resilience. This means that in the unfortunate event that things go wrong, despite all the mitigations we have in place, we have the ability to effectively absorb and respond to such events and in so doing ensure customers are best protected.

As part of our business plan submission, the Board has reviewed the results of a number of stress scenarios and provided a high quality viability statement to 2025, which provides confidence in our ability to remain viable over at least this period based on our business plan assumptions. As part of this stress testing, we have assessed the most severe (but plausible) risk scenarios that face the company, as captured through our well-established, best practice risk management framework. In all of these scenarios, we were able to demonstrate our ability to absorb these risks whilst maintaining an investment credit grade and without resorting to mitigating actions.

In addition, we have also stress tested the Ofwat common scenarios, which represent a number of extreme downside events. Again, we were able to demonstrate our ability to absorb these risks whilst maintaining an investment credit grade, however, in the most extreme scenarios we would most likely resort to taking mitigating actions to improve our capital structure and credit ratings.

In the event that we did need to take mitigating actions to support the viability of the company, we have some significant mitigation at our disposal. As a consequence of having the largest equity base in the industry (Equity portion of the RCV), dividends across the viability period are equivalent to c16% of the RCV, providing substantial headroom to improve our capital strength and credit ratings and/or provide liquidity to allow the company to absorb more extreme downside scenarios.