

C3



Delivering Outcomes for Customers



BRISTOL
WATER

Structure of our Business Plan Submission

Appointee plan

<p>A1 Bristol Water For All</p> 	<p>A2 Customer summary</p> 
--	--

Wholesale controls

<p>B1 Water resources</p> 	<p>B2 Water network plus</p> 	<p>B3 Residential retail</p> 
--	--	---

Supporting evidence

<p>C1 Engagement, communication and research Engagement Summary</p>	<p>C2 Addressing affordability and vulnerability</p>	<p>C3 Delivering outcomes for customers</p>	<p>C4 Bristol Water... Clearly Resilient</p>
<p>C5 Cost and efficiency Investment cases</p>	<p>C6 Financeability, risk & return, and affordability</p>	<p>C7 Track record of delivery</p>	<p>C8 Securing Trust, Confidence and Assurance</p>

Board Assurance Statement

C3 - Delivering outcomes for customers

Contents

1. Purpose.....	13
2. Executive summary.....	16
2.1. Our four outcomes	16
3. Introduction.....	23
3.1. Statutory and Regulatory Requirements.....	24
3.2. Our approach to customer and stakeholder engagement.....	25
3.2.1. Phase 1 – Taking stock (2016 to March 2017).....	29
3.2.2. Phase 2 – Gathering evidence (March 2017 – February 2018)	29
3.2.3. Phase 3 – Testing options (February – March 2018).....	30
3.2.4. Phase 4 – Consulting on our plans (April – August 2018).....	36
3.2.5. Phase 5 – Refining and acceptability	47
3.3. Our long-term ambition	67
4. Developing our outcomes	72
4.1. Overview.....	72
4.2. Reviewing our PR14 framework	72
4.3. Initial Development	72
4.4. Initial customer views.....	74
4.5. Initial Outcomes	74
4.6. Further customer views.....	75
4.7. Final Outcomes.....	76
4.7.1. How our plan outcomes deliver customer priorities.....	76
4.7.2. Alignment of Outcomes with Ofwat Priorities for PR19.....	78
5. Developing our performance commitments.....	83
5.1. Overview.....	83
5.2. Reviewing our PR14 framework	83
5.3. Ofwat’s Draft Methodology.....	84
5.4. Bristol Water Staff Views.....	85
5.5. Initial Customer Views.....	85
5.6. Initial Performance Commitments	87
5.7. Ofwat’s Final Methodology	89
5.8. Final Performance Commitments.....	91
5.9. Mapping Performance Commitments to Customer Priorities	93
5.10. Our Early Submission to Ofwat and updates to the Performance Commitment Definitions	96
5.10.1. Allocation of Performance Commitments to Price Control.....	99
5.10.2. Data Improvements and Methodology Changes.....	102
5.11. Performance Commitment Targets.....	103
5.12. Cost/ Benefit Analysis.....	105

C3 - Delivering outcomes for customers

5.12.1.	Water Quality Compliance	106
5.12.2.	Supply Interruptions	107
5.12.3.	Leakage	108
5.12.4.	Bursts	110
5.12.5.	Unplanned Outage.....	110
5.12.6.	Discoloured Water (Appearance) Contacts	112
5.12.7.	Taste and Odour Contacts	113
5.12.8.	Meter Penetration	113
5.12.9.	Raw Water Quality.....	113
5.12.10.	Properties at risk of Low Pressure	113
5.12.11.	Waste Disposal Compliance	114
5.12.12.	WTW Turbidity.....	114
5.12.13.	Per Capita Consumption	114
5.12.14.	Unplanned Maintenance Events	114
5.12.15.	Biodiversity Index	115
5.12.16.	Resilience	115
6.	Developing our Outcome Delivery Incentives (ODIs).....	116
6.1.	Overview.....	116
6.2.	Approach and engaging with customers	117
6.3.	Setting the Incentive Type with our Customers	118
6.4.	Marginal cost and benefit data	120
6.5.	Compliance with the PR19 Methodology.....	124
6.6.	Enhanced ODIs.....	127
6.7.	Caps and collars	128
6.8.	Deadbands.....	128
6.9.	Timings and form of incentives	128
6.10.	Balancing risk and reward	129
6.11.	P10/P90 Scenario Analysis.....	129
6.12.	Our Risk and Reward Package	129
6.13.	Summary of Proposed ODIs.....	132
7.	Detailed evidence by performance commitment – Excellent Customer Experiences	136
7.1.	Outcome - Excellent Customer Experiences	136
7.2.	Customer Measure of Experience (C-MeX).....	137
7.2.1.	Definition	137
7.2.2.	Customer views	137
7.2.3.	Regulatory requirements.....	138
7.2.4.	Allocation to price control	139
7.2.5.	Draft performance commitment, targets and long-term ambition	139

C3 - Delivering outcomes for customers

7.2.6.	Draft Business Plan Consultation feedback.....	140
7.2.7.	Final performance commitment, stretching targets and ODI	141
7.2.8.	Costs, Benefits and Incentive Rates.....	141
7.2.9.	Longer-term Projections.....	142
7.3.	Developer Measure of Experience (D-MeX).....	143
7.3.1.	Definition	143
7.3.2.	Customer views	143
7.3.3.	Regulatory requirements.....	143
7.3.4.	Allocation to price control	143
7.3.5.	Draft performance commitment, targets and long-term ambition	144
7.3.6.	Draft Business Plan Consultation feedback.....	144
7.3.7.	Final performance commitment, stretching targets and ODI	144
7.3.8.	Costs, Benefits and Incentive Rates.....	145
7.3.9.	Longer-term Projections.....	145
7.4.	Percentage of customers in water poverty	146
7.4.1.	Definition	146
7.4.2.	Customer views	146
7.4.3.	Regulatory requirements.....	147
7.4.4.	Allocation to price control	148
7.4.5.	Draft performance commitment, targets and long-term ambition	148
7.4.6.	Draft Business Plan Consultation feedback.....	149
7.4.7.	Final performance commitment, stretching targets and ODI	150
7.4.8.	Costs, Benefits and Incentive Rates.....	151
7.4.9.	Longer-term Projections.....	152
7.5.	Value for money	153
7.5.1.	Definition	153
7.5.2.	Customer views	153
7.5.3.	Regulatory requirements.....	154
7.5.4.	Allocation to price control	156
7.5.5.	Draft performance commitment, targets and long-term ambition	156
7.5.6.	Draft Business Plan Consultation feedback.....	156
7.5.7.	Final performance commitment, stretching targets and ODI	157
7.5.8.	Costs, Benefits and Incentive Rates.....	159
7.5.9.	Longer-term Projections.....	159
7.6.	Percentage of satisfied vulnerable customers	160
7.6.1.	Definition	160
7.6.2.	Customer views	160
7.6.3.	Regulatory requirements.....	160

C3 - Delivering outcomes for customers

7.6.4.	Allocation to price control	161
7.6.5.	Draft performance commitment, targets and long-term ambition	161
7.6.6.	Draft Business Plan Consultation feedback	162
7.6.7.	Final performance commitment, stretching targets and ODI	162
7.6.8.	Costs, Benefits and Incentive Rates	164
7.6.9.	Longer-term Projections	164
7.7.	Void properties	164
7.7.1.	Definition	164
7.7.2.	Customer views	165
7.7.3.	Regulatory requirements	165
7.7.4.	Allocation to price control	166
7.7.5.	Draft performance commitment, targets and long-term ambition	167
7.7.6.	Draft Business Plan Consultation feedback	167
7.7.7.	Final performance commitment, stretching targets and ODI	167
7.7.8.	Costs, Benefits and Incentive Rates	168
7.7.9.	Longer-term Projections	170
8.	Detailed evidence by performance commitment – Safe and Reliable Supply of Water	170
8.1.	Outcome – Safe and Reliable Supply of Water	170
8.2.	Water quality compliance	171
8.2.1.	Definition	171
8.2.2.	Customer views	171
8.2.3.	Regulatory requirements	172
8.2.4.	Allocation to price control	173
8.2.5.	Draft performance commitment, targets and long-term ambition	173
8.2.6.	Draft Business Plan Consultation feedback	173
8.2.7.	Final performance commitment, stretching targets and ODI	174
8.2.8.	Costs, Benefits and Incentive Rates	176
8.2.9.	Longer-term Projections	178
8.3.	Supply interruptions	179
8.3.1.	Definition	179
8.3.2.	Customer views	179
8.3.3.	Regulatory requirements	180
8.3.4.	Allocation to price control	182
8.3.5.	Draft performance commitment, targets and long-term ambition	182
8.3.6.	Draft Business Plan Consultation feedback	183
8.3.7.	Final performance commitment, stretching targets and ODI	184
8.3.8.	Costs, Benefits and Incentive Rates	187
8.3.9.	Longer-term Projections	190

C3 - Delivering outcomes for customers

8.4.	Mains Bursts	191
8.4.1.	Definition	191
8.4.2.	Customer views	191
8.4.3.	Regulatory requirements.....	191
8.4.4.	Allocation to price control	194
8.4.5.	Draft performance commitment, targets and long-term ambition	194
8.4.6.	Draft Business Plan Consultation feedback	194
8.4.7.	Final performance commitment, stretching targets and ODI	194
8.4.8.	Costs, Benefits and Incentive Rates.....	196
8.4.9.	Longer-term Projections.....	199
8.5.	Unplanned outage	200
8.5.1.	Definition	200
8.5.2.	Customer views	200
8.5.3.	Regulatory requirements.....	201
8.5.4.	Allocation to price control	202
8.5.5.	Draft performance commitment, targets and long-term ambition	202
8.5.6.	Draft Business Plan Consultation feedback	203
8.5.7.	Final performance commitment, stretching targets and ODI	203
8.5.8.	Costs, Benefits and Incentive Rates.....	204
8.5.9.	Longer-term Projections.....	206
8.6.	Risk of severe restrictions in a drought	207
8.6.1.	Definition	207
8.6.2.	Customer views	207
8.6.3.	Allocation to price control	209
8.6.4.	Regulatory requirements.....	209
8.6.5.	Draft performance commitment, targets and long-term ambition	209
8.6.6.	Draft Business Plan Consultation feedback	209
8.6.7.	Final performance commitment, stretching targets and ODI	210
8.6.8.	Costs, Benefits and Incentive Rates.....	211
8.6.9.	Longer-term Projections.....	211
8.7.	Customer contacts about water quality – appearance	212
8.7.1.	Definition	212
8.7.2.	Customer views	212
8.7.3.	Regulatory requirements.....	214
8.7.4.	Allocation to price control	215
8.7.5.	Draft performance commitment, targets and long-term ambition	215
8.7.6.	Draft Business Plan Consultation feedback	216
8.7.7.	Final performance commitment, stretching targets and ODI	217

C3 - Delivering outcomes for customers

8.7.8.	Costs, Benefits and Incentive Rates.....	219
8.7.9.	Longer-term Projections.....	222
8.8.	Customer contacts about water quality – taste and smell.....	223
8.8.1.	Definition	223
8.8.2.	Customer views	223
8.8.3.	Regulatory requirements.....	225
8.8.4.	Allocation to price control	226
8.8.5.	Draft performance commitment, targets and long-term ambition	226
8.8.6.	Draft Business Plan Consultation feedback.....	227
8.8.7.	Final performance commitment, stretching targets and ODI	228
8.8.8.	Costs, Benefits and Incentive Rates.....	230
8.8.9.	Longer-term Projections.....	233
8.9.	Properties at risk of receiving low pressure	234
8.9.1.	Definition	234
8.9.2.	Customer views	234
8.9.3.	Regulatory requirements.....	235
8.9.4.	Allocation to price control	237
8.9.5.	Draft performance commitment, targets and long-term ambition	237
8.9.6.	Draft Business Plan Consultation feedback.....	237
8.9.7.	Final performance commitment, stretching targets and ODI	237
8.9.8.	Costs, Benefits and Incentive Rates.....	239
8.9.9.	Longer-term Projections.....	241
8.10.	Turbidity performance at treatment works	242
8.10.1.	Definition	242
8.10.2.	Customer views	242
8.10.3.	Regulatory requirements.....	243
8.10.4.	Allocation to price control	243
8.10.5.	Draft performance commitment, targets and long-term ambition	243
8.10.6.	Draft Business Plan Consultation feedback.....	243
8.10.7.	Final performance commitment, stretching targets and ODI	244
8.10.8.	Costs, Benefits and Incentive Rates.....	245
8.10.9.	Longer-term Projections.....	247
8.11.	Unplanned maintenance – non-infrastructure	247
8.11.1.	Definition	247
8.11.2.	Customer views	248
8.11.3.	Regulatory requirements.....	248
8.11.4.	Allocation to price control	250
8.11.5.	Draft performance commitment, targets and long-term ambition	250

C3 - Delivering outcomes for customers

8.11.6.	Draft Business Plan Consultation feedback.....	250
8.11.7.	Final performance commitment, stretching targets and ODI	250
8.11.8.	Costs, Benefits and Incentive Rates.....	252
8.11.9.	Longer-term Projections.....	254
8.12.	Population at Risk from Asset Failure.....	255
8.12.1.	Definition	255
8.12.2.	Customer views	258
8.12.3.	Regulatory requirements.....	258
8.12.4.	Allocation to price control	259
8.12.5.	Draft performance commitment, targets and long-term ambition	259
8.12.6.	Draft Business Plan Consultation feedback.....	259
8.12.7.	Final performance commitment, stretching targets and ODI	261
8.12.8.	Costs, Benefits and Incentive Rates.....	262
8.12.9.	Longer-term Projections.....	264
9.	Detailed evidence by performance commitment – Local Community and Environmental Resilience.....	266
9.1.	Outcome – Local Community and Environmental Resilience	266
9.2.	Leakage.....	267
9.2.1.	Definition	267
9.2.2.	Customer views	267
9.2.3.	Regulatory requirements.....	269
9.2.4.	Allocation to price control	272
9.2.5.	Draft performance commitment, targets and long-term ambition	272
9.2.6.	Draft Business Plan Consultation feedback.....	273
9.2.7.	Final performance commitment, stretching targets and ODI	274
9.2.8.	Costs, Benefits and Incentive Rates.....	277
9.2.9.	Longer-term Projections.....	279
9.3.	Per Capita Consumption.....	280
9.3.1.	Definition	280
9.3.2.	Customer views	280
9.3.3.	Regulatory requirements.....	282
9.3.4.	Allocation to price control	284
9.3.5.	Draft performance commitment, targets and long-term ambition	284
9.3.6.	Draft Business Plan Consultation feedback.....	285
9.3.7.	Final performance commitment, stretching targets and ODI	286
9.3.8.	Costs, Benefits and Incentive Rates.....	289
9.3.9.	Longer-term Projections.....	291
9.4.	Meter penetration.....	293
9.4.1.	Definition	293

C3 - Delivering outcomes for customers

9.4.2.	Customer views	293
9.4.3.	Regulatory requirements.....	295
9.4.4.	Allocation to price control	297
9.4.5.	Draft performance commitment, targets and long-term ambition	297
9.4.6.	Draft Business Plan Consultation feedback	298
9.4.7.	Final performance commitment, stretching targets and ODI	298
9.4.8.	Costs, Benefits and Incentive Rates.....	300
9.4.9.	Longer-term Projections.....	302
9.5.	Raw water quality of sources	303
9.5.1.	Definition	303
9.5.2.	Customer views	303
9.5.3.	Regulatory requirements.....	304
9.5.4.	Allocation to price control	305
9.5.5.	Draft performance commitment, targets and long-term ambition	305
9.5.6.	Draft Business Plan Consultation feedback	305
9.5.7.	Final performance commitment, stretching targets and ODI	306
9.5.8.	Costs, Benefits and Incentive Rates.....	307
9.5.9.	Summary of AMP6 Raw Water Quality of Sources Performance Commitment	309
9.5.10.	Development of AMP7 Raw Water Quality of Sources Performance Commitment.....	310
9.5.11.	Longer-term Projections.....	312
9.6.	Biodiversity index	313
9.6.1.	Definition	313
9.6.2.	Customer views	314
9.6.3.	Regulatory requirements.....	316
9.6.4.	Allocation to price control	317
9.6.5.	Draft performance commitment, targets and long-term ambition	317
9.6.6.	Draft Business Plan Consultation feedback	317
9.6.7.	Final performance commitment, stretching targets and ODI	318
9.6.8.	Costs, Benefits and Incentive Rates.....	320
9.6.9.	Summary of AMP6 Biodiversity Index Performance Commitment.....	322
9.6.10.	Longer-term Projections.....	326
9.7.	Waste disposal compliance	327
9.7.1.	Definition	327
9.7.2.	Customer views	327
9.7.3.	Regulatory requirements.....	327
9.7.4.	Allocation to price control	328
9.7.5.	Draft performance commitment, targets and long-term ambition	328
9.7.6.	Draft Business Plan Consultation feedback	329

C3 - Delivering outcomes for customers

9.7.7.	Final performance commitment, stretching targets and ODI	329
9.7.8.	Costs, Benefits and Incentive Rates.....	331
9.7.9.	Longer-term Projections.....	332
9.8.	Water Industry National Environment Programme Compliance	333
9.8.1.	Definition	333
9.8.2.	Customer views	334
9.8.3.	Regulatory requirements.....	334
9.8.4.	Allocation to price control	334
9.8.5.	Draft performance commitment, targets and long-term ambition	334
9.8.6.	Draft Business Plan Consultation feedback.....	335
9.8.7.	Final performance commitment, stretching targets and ODI	335
9.8.8.	Costs, Benefits and Incentive Rates.....	336
9.8.9.	Longer-term Projections.....	337
9.9.	Abstraction Incentive Mechanism (AIM).....	338
9.9.1.	Definition	338
9.9.2.	Customer views	338
9.9.3.	Regulatory requirements.....	338
9.9.4.	Allocation to price control	341
9.9.5.	Final performance commitment, stretching targets and ODI	341
9.9.6.	Costs, Benefits and Incentive Rates.....	342
9.9.7.	Longer-term Projections.....	345
9.10.	Local community satisfaction	346
9.10.1.	Definition	346
9.10.2.	Sharing Proposal	347
9.10.3.	Customer views	348
9.10.4.	Regulatory requirements.....	349
9.10.5.	Allocation to price control	349
9.10.6.	Draft performance commitment, targets and long-term ambition	349
9.10.7.	Draft Business Plan Consultation feedback and Acceptability Testing	350
9.10.8.	Final performance commitment, stretching targets and ODI	351
9.10.9.	Costs, Benefits and Incentive Rates.....	352
9.10.10.	Longer-term Projections.....	355
10.	Monitoring Delivery.....	356
	Appendix 1 – Excluded Performance commitments from PR14	357
	Appendix 2 – Performance Commitment Decision Framework.....	359
	Appendix 3 - Bristol Water’s PR19 bespoke performance commitment definitions	362
1.	Outcome: Safe and reliable supply of water	362
2.	Company performance commitment PC06: Customer contacts about water quality – appearance.....	362

C3 - Delivering outcomes for customers

3.	Company performance commitment PC07: Customer contacts about water quality – taste and smell ..	363
4.	Company performance commitment PC08: Properties at risk of receiving low pressure	364
5.	Company performance commitment PC09: Turbidity performance at treatment works	369
6.	Company performance commitment PC10: Unplanned maintenance – non-infrastructure	370
7.	Company performance commitment PC11: Population at Risk from Asset Failure	371
8.	Outcome: Excellent customer experiences	375
9.	Company performance commitment PC14: Percentage of customers in water poverty	375
10.	Company performance commitment PC15: Value for money	376
11.	Company performance commitment PC16: Percentage of satisfied vulnerable customers	377
12.	Company performance commitment PC17: Void properties	379
13.	Outcome: Local community and environmental resilience	381
14.	Company performance commitment PC20: Meter penetration	381
15.	Company performance commitment PC21: Raw water quality of sources	382
16.	Company performance commitment PC22: Biodiversity Index	384
17.	Company performance commitment PC23: Waste disposal compliance	387
18.	Company performance commitment PC24: Water Industry National Environment	388
19.	Company performance commitment PC25: Abstraction Incentive Mechanism (AIM)	389
20.	Company performance commitment PC26: Local community satisfaction	391
	Appendix 4 - Summary of Incentive Rates Calculations for Preferred Plan	398
	Appendix 5 – Summary of ODIs and Incentive Rates	402

1. Purpose

The purpose of this document is to evidence the development of our outcomes, performance commitments and ODIs; and in particular, to demonstrate how customer and stakeholder views have shaped our Business Plan.

This Section (C3) provides a full range of evidence for the development of our outcomes and outcome incentives, and is therefore relevant to Ofwat’s plan assessment tests for delivering outcomes for customers. The document was developed during the Business Plan preparation process with the Bristol Water Challenge Panel, in order to allow them to comment on and challenge us in the development of outcomes, performance commitments and outcome incentives for PR19. This Section is intended to address the following tests for the Initial Assessment of the Business Plan:

IAP Test area	Questions	Evidence provided in this document
OC 1	How appropriate, well-evidenced and stretching are the company’s proposed performance commitments and service levels?	<p>Our commitments are both innovative and stretching, with many taking us beyond industry upper quartile levels of performance.</p> <p>In this document we describe how each performance commitment has been developed, including the regulatory drivers and the customer evidence that helped shape it. We describe how we set a stretching target for each commitment, based on historic and comparative data that sets a benchmark. We present our AMP7 targets as well as our longer-term projections (up until 2045).</p> <p>In Chapter 3 of this document we focus on how our engagement work has informed our outcomes framework and the key insights that have shaped it. Section C1- Engagement, communication and research describes our approach to customer and stakeholder engagement in full, and the different ways in which it has influenced our Business Plan and business-as-usual activities</p> <p>In Chapters 4 and 5 we describe the approach we took to developing our outcomes and performance commitments collaboratively with our customers and stakeholders.</p> <p>In Chapters 7, 8 and 9 we provide detailed evidence in relation to each performance commitment. This includes information on customer views and valuations, historical performance, benchmarking analysis, and level of stretch. We also set out our longer term projections for each performance commitment.</p>
OC 2	How appropriate and well-evidenced is the company’s package of outcome delivery incentives?	<p>Our ODI package incentivises achievement of our targets as well as innovation to deliver additional benefit to customers. They also protect customers against the risk of failure to deliver.</p> <p>In this document we set out the incentives that have been adopted for each performance commitment how they align to customer valuations for services. We also discuss Willingness To Pay and the design of incentives for each performance commitment.</p> <p>In Chapter 3 we describe our customer’s views on our overall bill levels and the timing of ODI payments.</p> <p>In Chapter 6 we describe our approach to developing our outcome delivery incentives based on customer and stakeholder views and customer</p>

C3 - Delivering outcomes for customers

		<p>valuations.</p> <p>In Chapters 7, 8 and 9 we provide detailed information on outcome delivery incentives including the basis for the incentive, the calculations and the percentage of return on regulated equity (RORE), for each of our performance commitments.</p> <p>The full calculations are provided in Table App1.</p>
OC 3	How appropriate is the company's focus on service performance in its risk/return package?	<p>Our evidence for the individual ODIs and risk and return balance as a whole results in an overall ODI package with an overall range (excluding C-MeX and D-MeX) of -4.0% to +2.1% and -2.3% to +1.1% for the central 80% confidence range (looking at individual metrics).</p> <p>In Chapter 6 we present our overall ODI package, which has a maximum RORE range of -5.1% to 3.2%. The impact of each performance commitments' ODIs on RORE are discussed in Chapters 7, 8 and 9.</p> <p>In Section C6 - Financeability, risk & return, and affordability we describe the overall balance of risk and return which demonstrates our focus on service performance.</p>

Figure 1-1 - IAP Tests on Delivering Outcomes for Customers¹

Evidence and appropriateness for the levels of stretch in our performance commitments are explored for each individual performance commitment in Chapters 7, 8 and 9. Evidence and appropriateness for our ODIs are explored in reference to acceptability testing in Chapter 3, Chapter 6 and also explored for each individual performance commitment in Chapters 7, 8 and 9. Our risk/ reward package is explored in Chapter 6.

Further supporting information on our proposed outcomes and the evidence we gathered can be found in the other Sections in the plan to - specifically C1 (on engagement, communication and research); C2 (on addressing affordability and vulnerability); and C4 (on Bristol Water...Clearly Resilient).

This document is structured around the components of the outcome delivery framework, and contains the following chapters:

- **Chapter 1** Purpose
- **Chapter 2** Executive Summary
- **Chapter 3** Introduction
- **Chapter 4** Developing our outcomes
- **Chapter 5** Developing our performance commitments
- **Chapter 6** Developing our outcome delivery incentives (ODIs)
- **Chapter 7** Detailed evidence by performance commitment – Excellent Customer Experiences
- **Chapter 8** Detailed evidence by performance commitment – Safe and Reliable Supply of Water
- **Chapter 9** Detailed evidence by performance commitment – Local Community and Environmental Resilience
- **Chapter 10** Monitoring delivery

¹ Source: PR19 Methodology Appendix 13, and Ofwat Aide Memoire to CCGs, March 2018

In each chapter we describe how our plans were developed and the sources of information used. In Chapters 7, 8 and 9, we provide detailed evidence by performance commitment. We describe how each commitment was developed, including compliance with the regulatory framework and the customer evidence that helped shape it. We describe how we set a stretching target for each commitment, based on historic and future predicted comparative benchmark data, or where we set stretch with reference to our own performance where comparative data is not available. We also consider the longer-term projections (up until 2045) for each performance commitment.

2. Executive summary



This document sets out how our PR19 outcomes framework has been driven by the preferences and priorities of our customers and contains service levels that represent the most beneficial option at a cost that our customers view as good value. The framework has been developed in line with the PR19 methodology of the economic regulator of the water industry, Ofwat, and also incorporates the Bristol Water's long-term ambitions and vision.

Our PR19 outcomes framework has been developed through extensive consultation with both customers and stakeholders. We have also taken full account of our legal and statutory obligations. We have used this information to build on the approach we adopted to setting outcomes and incentives at the last price review in 2014.

2.1. Our four outcomes

Our outcomes interconnect to deliver customer excellence with the wellbeing for society, our communities and the environment through linking our product, our service, and experience. Our outcomes are:

OUTCOMES



Excellent customer experiences



Local community and environmental resilience



Safe and reliable supply of water



Corporate and financial resilience

Our continuing customer research, and the involvement and challenge from the Bristol Water Challenge Panel and our Board, have enabled us to ensure that our plans are focused clearly on those things most important to customers and stakeholders. This engagement has resulted in the development of four specific outcomes for PR19, which capture the priorities of our customers and stakeholders; along with twenty-six performance commitments, which will help us to measure our performance against these outcomes; and a package of outcome delivery incentives (ODIs). We have set stretching performance targets for each of these commitments. To ensure that we are incentivised to deliver against the targets, for the majority of the performance commitments we have proposed financial incentives as our customers have told us that they think the majority of incentives should be financial. Four performance

commitments have reputational ODIs where no financial incentives apply. We use a range of deadbands, caps and collars where appropriate. A summary of our proposed outcomes and performance commitments is given below:

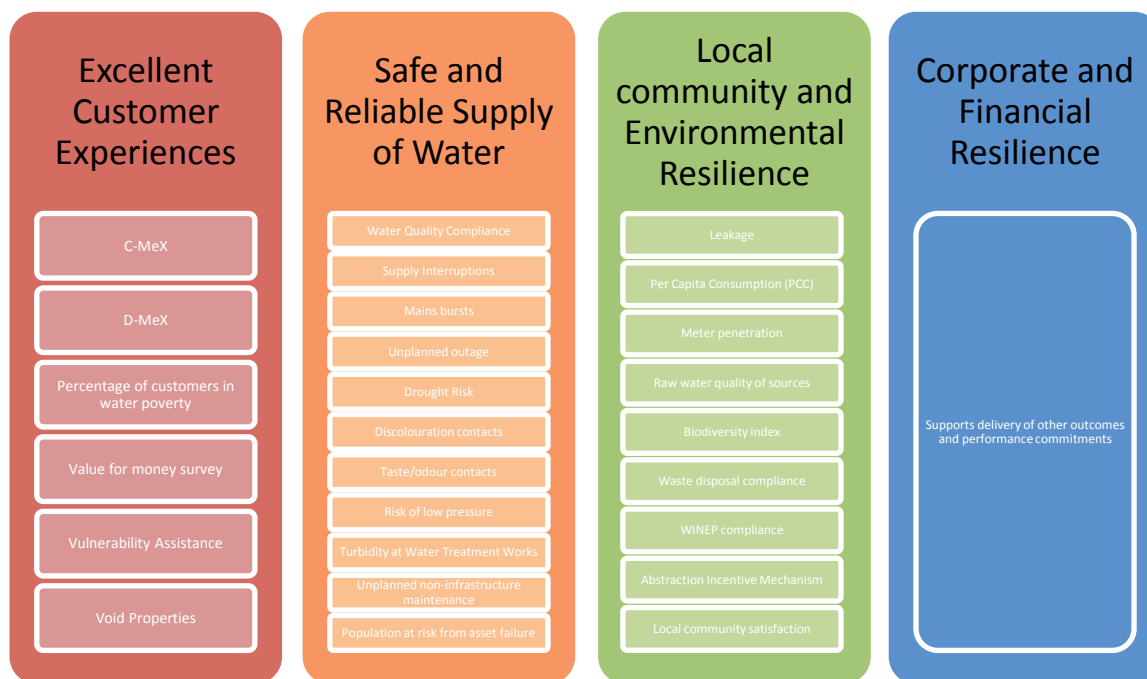


Figure 2-1 - PR19 Outcomes Framework

These outcomes and performance commitments ensure that our priorities are clear and that there is visibility for customers and stakeholders over how we are performing.

Ofwat has set the industry a challenge to consider targeting the forecast upper quartile level of performance for comparative measures. We have, after extensive consultation with our customers, set targets for a number of performance commitments that will ensure excellent experiences in everything that we do - whether for customers in the services they receive, or in terms of the wider benefits for society and the environment. We have in particular prioritised leakage, the customer experience and affordability. In so doing, we have made ten customer promises based on the commitments which matter most to our customers. These link directly to our customers' priorities. The ten promises are:

1. Lower bills for customers - affordable for all;
2. Achieving customer excellence;
3. Inclusive services that meets customers' individual needs, especially when they are most vulnerable. Aiming for zero water poverty;
4. 15% leakage reduction;
5. Metering and water efficiency promotion and support;
6. Accountable to the community partners we work with for the wellbeing of society – 'Bristol Water For All';
7. Building biodiversity and protecting our environment;
8. Improving water quality (including contacts for discolouration and taste);
9. Reducing supply interruptions to 1.8 minutes per customer (our forecast of industry top quartile); and
10. Resilience – boosting protection for population centres of more than 10,000.



Figure 2-2 - Customer priorities and promises at the heart of our plan

Table 2-1 below sets out a summary of our outcomes framework, including our incentive design, in addition to context about how our outcomes over the next five years will help deliver service improvements for our customers over the longer-term.

C3 - Delivering outcomes for customers

Table 2-1 - Bristol Water PR19 Outcomes Framework

PR19 Outcomes Framework													
Out-come	Performance Commitment (PC)	PC Category	Unit Measurement	2020 Baseline	2025 Target	Stretch	2030 Target	2050 Target	ODI Dead band	ODI Caps/ Collars	Incentive	Max Out-performance ODI including P90 (£m)	Max Under-performance ODI including P10 (£m)
Excellent customer experiences	Customer measure of experience (C-MeX)	Common, New	C-MeX score	TBC	TBC	Ofwat measure	TBC	TBC	TBC	TBC	Out and under	10.924	-10.924
	Developer services measure of experience (D-MeX)	Common, New	D-MeX score	TBC	TBC	Ofwat measure	TBC	TBC	TBC	TBC	Out and under	0.348	-0.695
	Percentage of customers in water poverty	PR14	% customers in water poverty	0.0	0.0	Max level attainable	0.0	0.0			Reputational	-	-
	Value for money	PR14	% respondents to survey	72	83	Comparative information	86	90			Reputational	-	-
	Percentage of satisfied vulnerable customers	Mandatory (vulnerability), New	% customer satisfaction	85	85	Expert knowledge	90	100			Reputational	-	-
	Void properties	Expectation, New	% connected properties	1.9	1.8	Comparative and Historical information	1.8	1.8	☑	☑	Out and under	0.066	-0.247
Safe and reliable supply of Water	Water quality compliance	Common, New	Compliance risk index (CRI) score	1.27	0	Maximum (zero)	0	0	☑	☑	Under Only	-	-1.354
	Supply interruptions	Common, New	Hours: mins: secs per property per year	0:12:12	0:01:48	Forecast upper quartile)	0:01:36	0:01:00		☑	Out and Under	1.724	-4.644
	Mains bursts	Common, PR14	Mains bursts per 1,000km	142	133	Investment plan outcome	131	130	☑	☑	Under Only	-	-3.890

C3 - Delivering outcomes for customers

PR19 Outcomes Framework													
Out-come	Performance Commitment (PC)	PC Category	Unit Measurement	2020 Baseline	2025 Target	Stretch	2030 Target	2050 Target	ODI Dead band	ODI Caps/ Collars	Incentive	Max Out-performance ODI including P90 (£m)	Max Under-performance ODI including P10 (£m)
	Unplanned Outage	Common, New	Proportion of unplanned outage of the total company production capacity	1.74	1.74	Expert knowledge	1.64	1.4		<input checked="" type="checkbox"/>	Under Only	-	-0.496
	Risk of severe restrictions in a drought	Common, New	% customer population at risk of severe restrictions in a 1-in-200 year drought, on average over 25 years	0	0	Max level attainable	0	0			Reputational	-	-
	Customer contacts about water quality – appearance	Mandatory definition (asset health), PR14	Contacts per 1,000 people	0.93	0.43	Comparative, historical information and cost/benefit analysis	0.34	0.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Out and under	0.233	-0.661
	Customer contacts about water quality – taste and smell	Mandatory definition (asset health), PR14	Contacts per 1,000 people	0.44	0.25	Comparative, historical information and cost/benefit analysis	0.23	0.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Out and under	0.157	-0.157
	Properties at risk of receiving low pressure	Mandatory definition (asset health), PR14	No. of properties	69	60	Cost/benefit analysis	45	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Out and under	0.598	-1.598

C3 - Delivering outcomes for customers

PR19 Outcomes Framework													
Out-come	Performance Commitment (PC)	PC Category	Unit Measurement	2020 Baseline	2025 Target	Stretch	2030 Target	2050 Target	ODI Dead band	ODI Caps/ Collars	Incentive	Max Out-performance ODI including P90 (£m)	Max Under-performance ODI including P10 (£m)
	Turbidity performance at treatment works	PR14	No. of failures	0	0	Max level attainable	0	0		<input checked="" type="checkbox"/>	Under Only	-	-4.171
	Unplanned maintenance – non-infrastructure	Mandatory definition (asset health), PR14	No. of jobs	3976	3272	Historical information	3272	3272	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Under Only	-	-4.722
	Population at risk from asset failure	Mandatory (resilience)	No. of people (population)	832,886	290,000	Cost/benefit analysis	0	0		<input checked="" type="checkbox"/>	Out and under	5.976	-6.440
Local community and environmental resilience	Leakage (annual)	Common, PR14	Megalitres per day (MI/d)	43	36.5	Cost benefit analysis (15% reduction)	36	35		<input checked="" type="checkbox"/>	Out and under	9.377	-7.890
	Per capita consumption (PCC) (annual)	Common, PR14	Litres per head per day (l/h/d)	142	135	Cost/benefit analysis	128.75	110		<input checked="" type="checkbox"/>	Out and under	0.862	-1.633
	Meter penetration	PR14	% metered supplies	65.9	75	Water resource policy	82.5	90		<input checked="" type="checkbox"/>	Out and under	1.909	-1.806
	Raw water quality of sources	Mandatory (environment), PR14	Kg of P loss reduction achieved by Bristol Water scheme	0	531	Expert knowledge	533.5	541		<input checked="" type="checkbox"/>	Out and under	0.241	-0.341
	Biodiversity Index	Mandatory (environment), PR14	Biodiversity Index score	17658	17711	Historical information	17761	18723		<input checked="" type="checkbox"/>	Out and under	0.360	-0.134
	Waste disposal compliance	Mandatory (environment), PR14	% waste disposal compliance	100	100	Max level attainable	100	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Under Only	-	-0.043

C3 - Delivering outcomes for customers

PR19 Outcomes Framework													
Out-come	Performance Commitment (PC)	PC Category	Unit Measurement	2020 Baseline	2025 Target	Stretch	2030 Target	2050 Target	ODI Dead band	ODI Caps/ Collars	Incentive	Max Out-performance ODI including P90 (£m)	Max Under-performance ODI including P10 (£m)
	Water industry national environment programme (WINEP) compliance	Mandatory (environment), New	% compliance with WINEP	100	100	Max level attainable	100	100			Under Only	-	-1.019
	Abstraction Incentive Mechanism (AIM)	Mandatory (AIM), New	Megalitres (MI)	0	2843.4	Expert knowledge	2843.4	2843.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Out and under	0.112	-0.112
	Local community satisfaction	New	% stakeholder satisfaction	75	85	Cost/benefit analysis	85	93		<input checked="" type="checkbox"/>	Out and under	0.831	-1.021

3. Introduction

This chapter describes:

- The statutory and regulatory requirements we have considered in developing our outcomes framework;
- The programme of customer engagement we undertook;
- The key customer insights which have shaped our framework, focusing on those activities which most directly informed our ODI framework; and
- The long-term ambitions which have informed our outcomes framework for PR19.

We are on a journey of improving the customer experience, and our Business Plan builds on the trust of our local communities by setting out a number of promises intended to deliver customer excellence. We have a strong relationship with our customers and our outcomes framework has been driven by a huge programme of customer, stakeholder and community engagement, which has built up a strong basis of support as we have progressed. We have also engaged with environmental and quality regulators, to ensure that our framework meets Environment Agency, Drinking Water Inspectorate, Natural England and Defra expectations in all regards – and delivers wider benefits through the way we work.

Regulation of the water sector has moved from a focus on the outputs that companies deliver to the outcomes for customers, with strong financial incentives linked to the delivery of outcomes. At PR14 Ofwat introduced the ‘Outcomes framework’, whereby companies were required to propose a set of performance commitments, and associated incentives, based on engagement with their customers. The aim of this development was to support companies in delivering what their customers want, and to provide innovative solutions to the challenges arising from, for example, population growth, climate change and changing customer expectations. We have embraced this approach throughout the development of our PR19 Business Plan.

The regulatory framework includes a broad range of levers for Ofwat and water companies to use in order to reward more robust business-planning, greater efficiency in expenditure and financing, and the delivery of outcomes that customers want. This range of levers increases the importance of considering risks and rewards as a coherent package so that, for example, companies are incentivised to deliver sustainable services over the longer term. The balance of incentives across our ODI package means that whilst bespoke performance commitments offer an opportunity for outperformance payments; the potential upside from any outcome-related returns against common metrics will be limited.

Ultimately, for an outcomes framework to be appropriate, it not only needs to take into account the statutory and regulatory framework; it must also reflect a company’s long-term strategy and reflect the priorities of its customers and stakeholders.

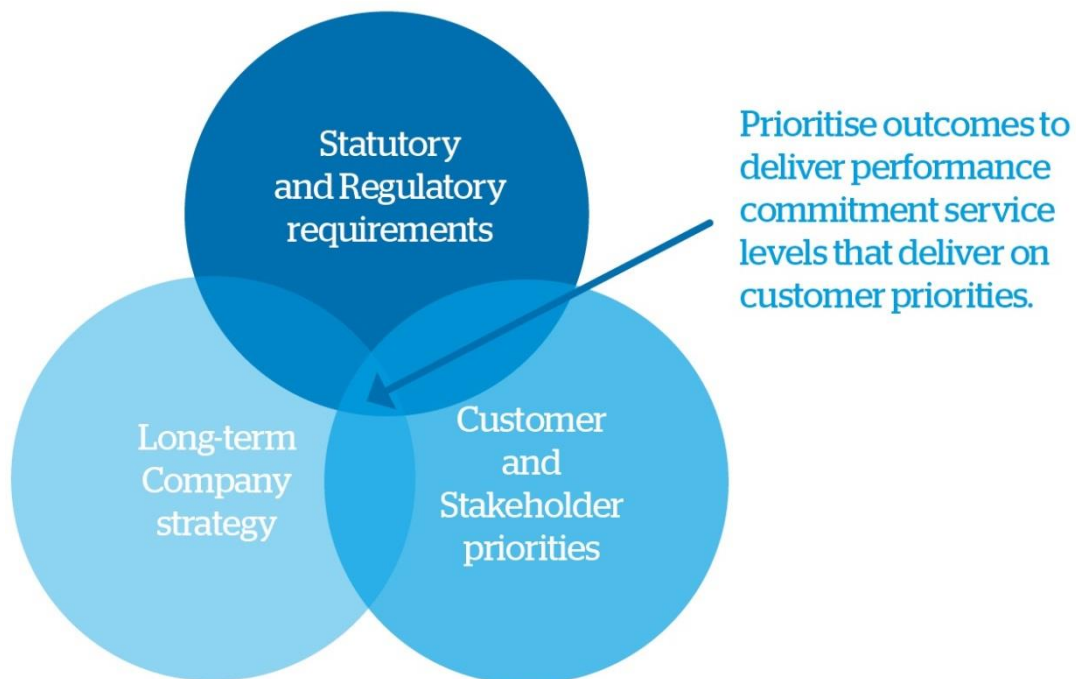


Figure 3-1 - Outcome Drivers

3.1. Statutory and Regulatory Requirements

Our outcomes framework must take into account our statutory and regulatory duties. The concept of company outcomes was introduced as one of the key innovations of PR14, and enables further innovations in totex efficiency and outcome delivery for customers. Outcome performance has a direct impact on the level of bills that are charged to households and businesses in our supply area, which through the use of in-period incentive payments will be more apparent in 2020-25. Performance commitments are based on an agreement between Bristol Water and Ofwat (the economic regulator for the water industry), but also take into account the requirements of other regulators and government bodies such as the DWI, the Environment Agency and Defra.

C3 - Delivering outcomes for customers



Outcomes

- are the general description of what the company is promising to deliver for its customers and wider stakeholders

Performance Commitments

- are commitments that are made by the company, are embedded in Ofwat's determination and are obligations that the company is accountable for. They should reflect areas of performance that help achieve the desired outcomes

Targets

- are the pledges we make for each year, in order to achieve a certain level of service for each performance commitment

ODIs

- are a mechanism to ensure that we are incentivised to achieve the targets set in the business plan

Figure 3-2 - Outcomes Framework Terminology

Ofwat has defined outcomes as “*the higher-level objectives that company actions, activities and achievements are intended to help deliver. They represent what customers and society really value.*”²

Outcomes are generally continuous, long-term requirements that do not necessarily fit into one price control period. Therefore, outcomes are a measure of the success of the business in the long-term. Outcomes are achieved as a consequence of the expenditure of resources and effort, which can be identified through specific activities and actions, but not necessarily the delivery of specific schemes or projects.

3.2. Our approach to customer and stakeholder engagement

² “Inputs, Outputs and Outcomes – What should price limits deliver”, Ofwat, March 2011

C3 - Delivering outcomes for customers

We continually have conversations with our customers, communities and stakeholders, in order to understand their priorities and shape the services we deliver. This is an ongoing process, which is an integral part of each of our business activities. Section C1 describes our approach to customer and stakeholder engagement in full, and the different ways in which it has influenced our Business Plan and business-as-usual activities. This Section focuses on how our engagement work has informed our outcomes framework and the key insights that have shaped it.

In addition, over the past two years we have undertaken targeted research, engagement and consultation to develop a Business Plan which reflects our customer and stakeholder views. Since we started work on our Business Plan in 2016, as part of our targeted research, we have spoken to more than 37,000 customers and stakeholders through over 50 activities to understand what our customers expect from us. We have used a considerable mix of approaches in order to ensure that we hear from the widest range of people, and that we record our customers' views accurately. We work with the Bristol Water Challenge Panel to ensure that our engagement is done well, uses fair and balanced questions and is reported accurately. The Panel also challenge us to demonstrate how our engagement leads to real change to our plans and business-as-usual activities.

Our customer engagement roadmap is shown in Figure 6:

Customer Engagement Roadmap

37,539
customers engaged

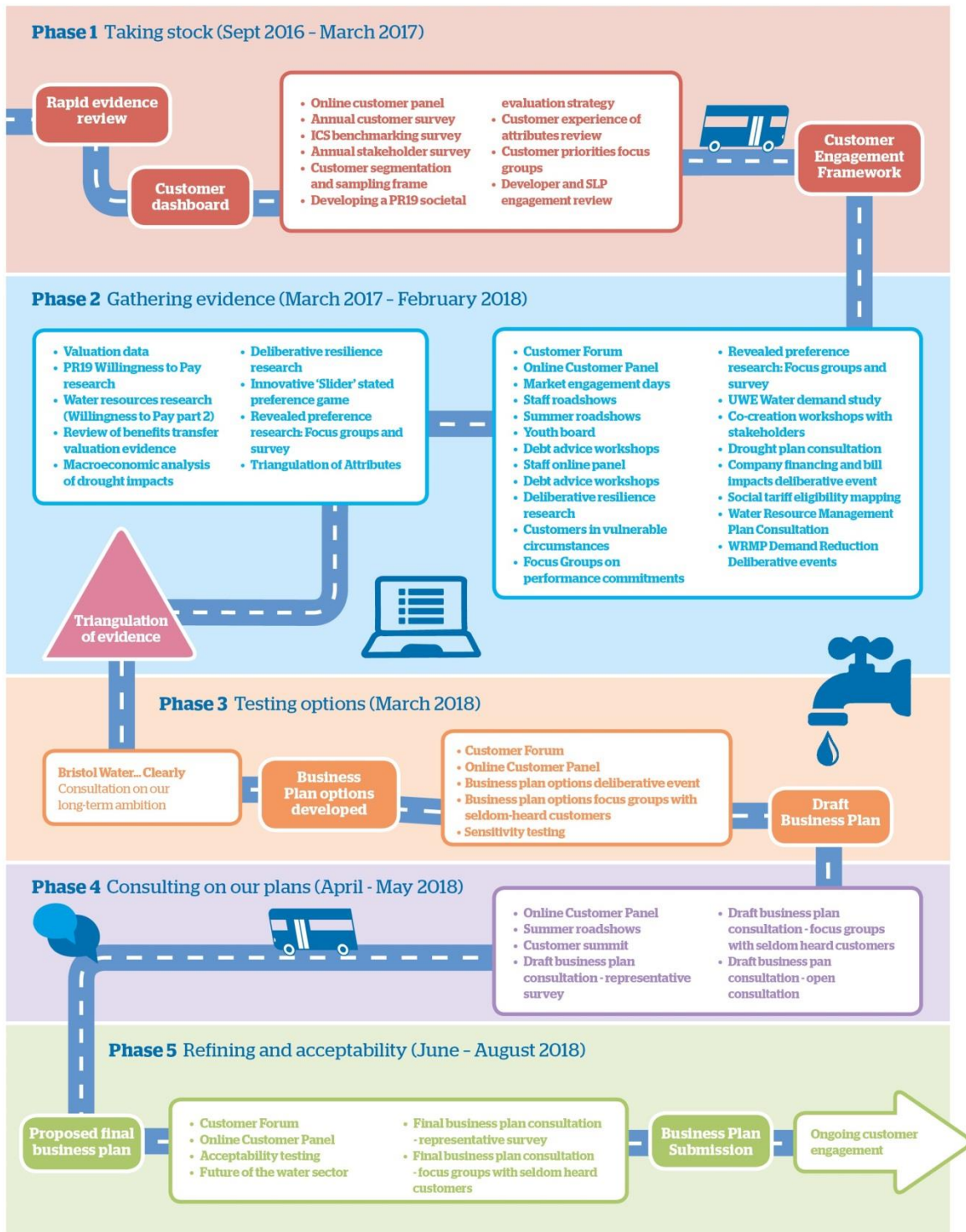


Figure 3-3 - Customer Engagement Roadmap

C3 - Delivering outcomes for customers

Our PR19 outcomes framework is therefore customer-driven. Every stage of our planning process has been based upon what our customers have told us they want us to deliver, and what they are willing to pay for - with a customer engagement process that has been thoroughly tested by our independent Bristol Water Challenge Panel.

Throughout our customer and stakeholder engagement programme, we have also developed our own principles of good engagement to ensure that our engagement conforms to best practice.

All engagement activities are:

- Relevant – owned by the part of the business who will use the results;
- Transparent – it is clearly communicated to participants why they are being engaged, who by, and how their views will be used;
- Customer-centred – designed with the experience of the activity for the customer at its core (i.e. not just research objectives), endeavouring to make the subject matter fun and engaging for all;
- Accessible – materials should be clear, accurate, and in plain English; and
- Sustainable – where possible we wanted to incorporate engagement into our business-as-usual activities, and with one-off events we ensured that our team learnt from working with external experts to improve how we manage engagement in the future.

Our outcomes framework customer engagement plan evolved through five phases, as shown in Figure 3-4 - below.

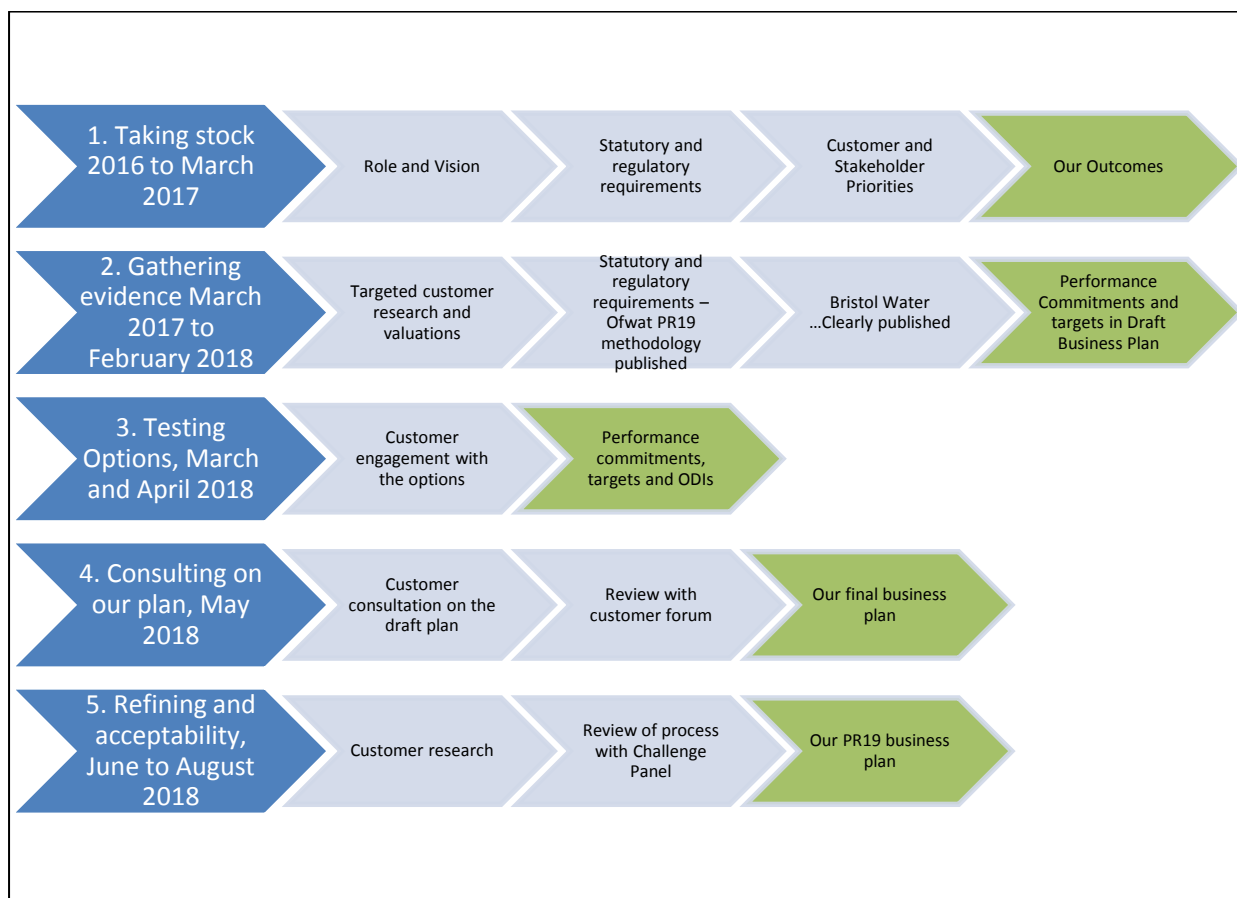


Figure 3-4 - How customer engagement has shaped our outcomes framework

After each phase, we reviewed the outputs we had collected, and analysed what it told us about our customers' views. From this analysis, we then decided on the following for the next phase:

- Priority content areas (i.e. better understanding customer attitudes towards metering);
- Engagement objectives (i.e. supporting understanding, research/ soliciting views, building interest);
- Appropriate engagement methodology to achieve objectives (i.e. online, workshops, roadshows, surveys etc.);
- Appropriate research methodology where appropriate (i.e. valuation / quantitative, qualitative);
- Specific customer groups to engage with (i.e. rural customers, vulnerable groups); and
- Timeline to ensure results were available to inform key milestones in the business-planning process.

Further information on the different methods of engagement with our customers (e.g. including tweet chats, social media) and on the different methods of engaging with stakeholders can be found in Section C1. As already mentioned, our customer engagement programme shaped our outcomes framework in five phases:

3.2.1. Phase 1 – Taking stock (2016 to March 2017)

We engage with our customers on a regular basis as part of business-as-usual activities. At the beginning of the PR19 process we wanted to review what we knew already about our customers and their views and opinions on their water supply. We also wanted to better understand our customers – learn more about who they were and what characterised their water usage. To do this, we carried out a segmentation of our customers and produced six customer archetypes. We used this segmentation to help us target our engagement and research, and to understand where different customers might have different views. We also reviewed our research to date, and useful research undertaken for PR14. In addition, we developed a new way of compiling our regular customer contact data, and other useful measures such as our SIM and monthly replica surveys. This customer dashboard enabled us to gain an overview of key messages we were hearing from our customers.

In this phase, we checked in with customers about their priorities, and about areas which we were confident were important to them (reliability of their supply, and the taste and smell of their water). We also refreshed our understanding of their perception of us as a business.

At the end of this stage we had identified our draft outcomes, described in Chapter 4 of this document.

3.2.2. Phase 2 – Gathering evidence (March 2017 – February 2018)

During this phase, we spent a lot of time talking to customers. We used a range of methodologies for engagement, which included talking to customers at our summer roadshows with our award-winning water bar, inviting customers to workshops and focus groups, asking customers to fill in online surveys, interviewing customers, and hosting our own customer forum in our offices. Some of these customers have continued to be involved right through to the final Business Plan, helping us to check how well our plans reflected what they had told us.

C3 - Delivering outcomes for customers

After analysing the available data in phase 1, considering the Ofwat PR19 methodology statement and our business priorities, we decided to discuss the following issues with customers in phase 2:

- Resilience – relating to drought avoidance (i.e. hosepipe bans and long-term water cuts);
- Resilience – relating to water resource options (i.e. leakage, metering);
- Affordability and working with vulnerable customers;
- Demand reduction;
- Water efficiency; and
- Bristol Water's local challenges (related to small company cost of capital adjustment and cost adjustment claims).

During this time we also produced our long-term strategy document, 'Bristol Water... Clearly', and involved a mix of stakeholders and members of our customer forum to better understand how they want us to work with them in the long term.

During this phase we refined our outcomes and began to develop our performance commitments, as described in Chapter 5 of this document.

3.2.3. Phase 3 – Testing options (February – March 2018)

The information we gathered in phase 2 informed our decision-making processes as we developed draft options for our Business Plan. Rather than decide on just one or two options to test with customers in our open consultation, we decided to test a wider array of options in an early stage of the process to give customers more ability to influence our plans. We carried out a range of focus groups, deliberative events and discussions with our customer forum, as well as a survey to understand how the overall bill level determined by efficiencies and predicted inflation might affect our customers' willingness to invest in improvements to service.

During this period we developed indicative targets for our performance measures in 'Bristol Water... Clearly', with minimum, possible and potential targets for 2024/25 along with our long-term ambition for performance by 2050. In our draft Business Plan we then set out options for different paces of delivery of our suggested improvement plan.

This phase also included research to explore the sensitivity of customers to bill changes, helping us to understand what levels of improvements our customers expect at what price. The research, undertaken by NERA with Traverse, tested how customers reacted to the package of slower, suggested and faster plans in the context of the level of efficiency that was included within the starting bill, before considering the service options. As the slower and faster plans were informed by the range of customer WTP, this helps to validate the triangulation of Willingness to Pay, and also how plan service levels could flex with cost of delivery and overall bill levels. This innovative research provides an envelope for plan incentives, for plan decisions, and provides evidence to Ofwat to justify the approach taken (including support for glidepaths). Other draft Business Plan customer research, described in

C3 - Delivering outcomes for customers

phase 4 below, also helped to inform the final plan choices.

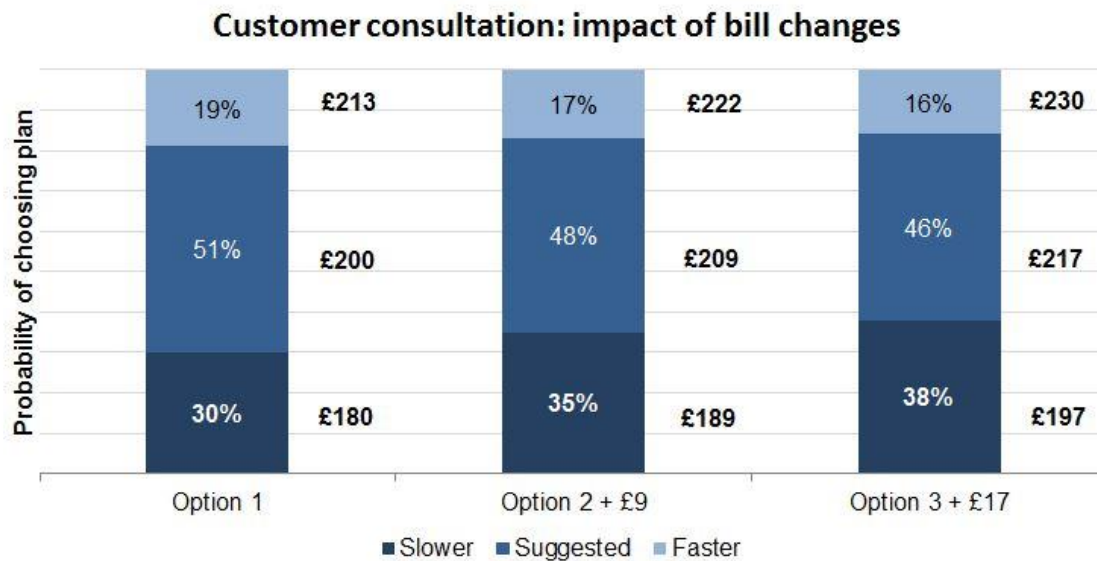


Figure 3-5 - Options presented in DBP acceptability testing

Percentage of respondents who chose each plan, depending on which price group they were assigned

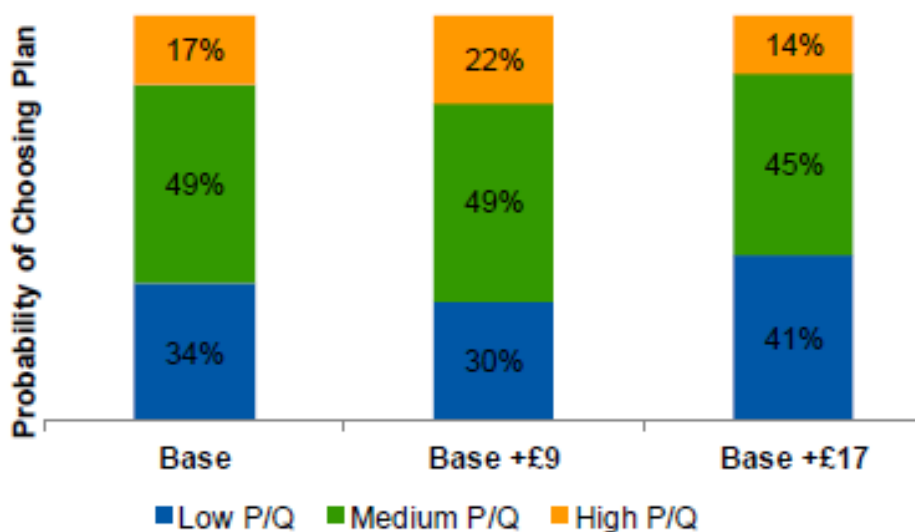


Figure 3-6 - Customer probability of choosing DBP options

The key findings were:

- The majority of customers are likely to accept any single plan they are presented with; however, they are generally more likely to accept lower price-quality plans;
- On average, “young urban renters” and “thirsty empty nesters” show the lowest acceptability rates for any given plan, albeit still above 50%;
- The effect of increasing the price of a given plan on the acceptability rate is greater for higher price-quality combinations;

C3 - Delivering outcomes for customers

- When customers are allowed to choose between three different price-quality plans, they are most likely to choose the medium price-quality plan regardless of cross-plan price increases; only “social renters” switch to the low price-quality plan when the price is higher than the lowest baseline bill level. This provides useful insight into affordability; and
- The above conclusion does not change after the same respondents are presented with comparative information about BW’s performance with respect to the industry. In part this is due to Bristol Water “average” bill levels and range of service performance. This validates glidepaths for metrics to a degree.

The effect of the baseline change in bill on the acceptability of a given plan varies by customer segment and by plan



Figure 3-7 - Effect of baseline change in bill on acceptability of a given plan by customer segment and plan³

Leakage and biodiversity were key reasons why customers preferred plan improvements. Those who preferred lower quality plans tended to say that they felt the minimum plan included worthwhile improvements which were affordable, or were concerned that stretching targets were not likely to be achievable.

This approach helped us to triangulate our key Willingness to Pay information, the overall summary of which is set out below. This shows the main stated preference and triangulated acceptability research. We had a wide range of WTP research which we triangulated, and then tested through this approach. The full explanation of WTP values is summarised for each outcome and our C1 customer evidence document, our triangulation is reported in research item B20: Triangulation by Attribute.

The sensitivity testing (item B27) allowed our 3 plan packages (with the 3 cost options) to be considered in terms of customer acceptability. With plan packages based on a range of customer WTP, each plan and outcome incentives could reflect the point at which marginal costs = marginal benefits, whilst testing the total plan package price sensitivity.

³ Source: NERA/Traverse Research

Business Plan Scenarios Derived from “Triangulated” Willingness to Pay Scenarios

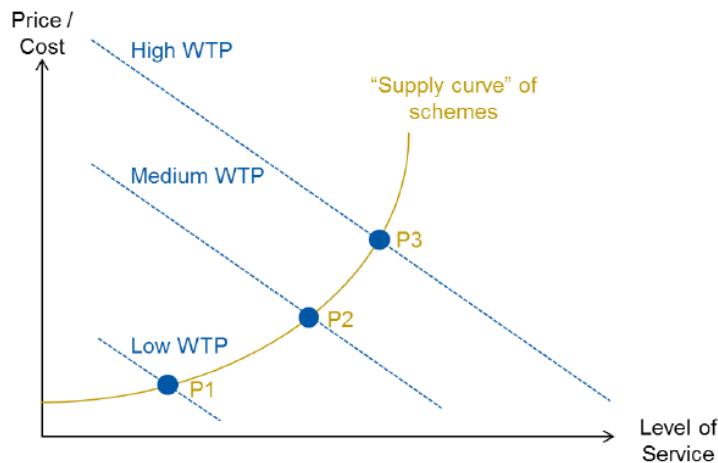


Figure 3-8 – Business Plan Scenarios

Effectively we could develop an expected WTP for a package of service levels, and by inference for each plan component. The full strength of this approach is that our draft Business Plan consultation and research recognised that there are bill changes that do not relate to service levels (such as efficiency, cost of capital and financial mechanisms). We tested customer’s support for service improvements and outcome incentive preferences in the context in a range of “starting” bill levels. Some surveys such as the NERA work randomly allocated starting bill levels to test this acceptability, taking into account our segmented customer types. This showed price sensitivity, and the strongest support for service improvements if they were at a lower cost, with the most income and service vulnerable such as those in the social rented sector most sensitive to price.

“Expected” Willingness to Pay Based on Relative Preferences between Plans

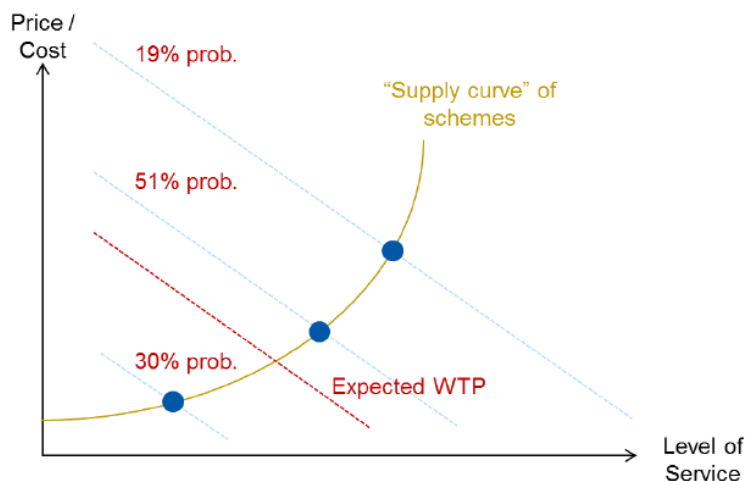


Figure 3-9 - Expected Willingness to Pay

This gave an overall indication of WTP for a particular price/service package (i.e. which WTP scenarios was most likely to align with customer preferences, in the context of the range of service and price points we consulted on in our draft Business Plan). Through this process we also identified areas for final acceptability research, in particular where customer support was lower for component areas and where validation of WTP service packages was required, in particular for community initiatives.

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Table 3-1 – Expected Willingness to Pay

We did not apply the results of this research and the “Expected” mechanically. For instance for leakage we maintained the use of the Low/Medium triangulated WTP value as the wider customer consultation suggested it was important to customers that leakage was delivered without additional costs to customers – the incentive rates for leakage using this value as we show below meant marginal costs equalled marginal benefits for the level of leakage improvement (15% by 2025) that our Water Resources Management Plan targeted. In other cases, where the expected WTP was below the central “Med” value, we used the expected WTP value.

Our WTP values at PR19 appear modest when compared to other surveys that we are aware of - we have used comparative industry values shared anonymously by Accent in order to test our approach.

C3 - Delivering outcomes for customers

Company	Households ⁽¹⁾			Non-households ⁽¹⁾		
	PR19 £/hh/year	PR14 £/hh/year	Change (%) ⁽²⁾	PR19 £/hh/year	PR14 £/hh/year	Change (%) ⁽²⁾
L	11.4 ⁽⁵⁾	31.0 ⁽⁷⁾	-63%	99.4 ⁽⁵⁾	51.1 ⁽⁷⁾	94%
Summary statistics						
Mean	37.7	30.1	25%	294.1	119.5	146%
Median	29.8	28.0	6%	126.5	85.8	47%
Std deviation	24.9	12.2	103%	373.0	103.4	261%
Min	11.4	12.0	-5%	77.3	16.0	383%
Max	94.3	49.6	90%	1264.6	299.5	322%

Table 3-2 – Comparison of WTP values

This table shows a 63% reduction in customer WTP amongst households since PR14. In part this reflects improvements in levels of service, but it is also reflective of a very cautious approach to customer WTP. The WTP of Bristol Water customers at PR19 appears to be the lowest in the industry, although non-households are above the minimum. This includes water as well as wastewater companies, which reflects some of the WTP difference. As would be expected, this applies to all service components within the package of the research (listed below), and includes scaling.

C3 - Delivering outcomes for customers

Attribute		Unit	Unit value (£/unit/year)		
			HH	NHH	Total
Original report	Comparisons report				
Unplanned supply interruption (3-6 hours)	Supply interruptions (3-6 hours)	1 property affected by an unplanned interruption (3-6 hours)	136	1565	203
Unplanned supply interruption (6-12 hours)	Supply interruptions (6-12 hours)	1 property affected by an unplanned interruption (6-12 hours)	287	1941	365
Unplanned supply interruption (12-24 hours)	Supply interruptions (12-24 hours)	1 property affected by an unplanned interruption (12-24 hours)	293	2661	404
Unplanned supply interruption (>24 hours)	Supply interruptions (>24 hours)	1 property affected by an unplanned interruption (>24 hours)	332	3464	479
Planned supply interruption (3-6 hours)	Planned interruptions (3-6 hours)	1 property affected by a planned interruption (3-6 hours)	91	706	120
Planned supply interruption (6-12 hours)	Planned interruptions (6-12 hours)	1 property affected by a planned interruption (6-12 hours)	121	1007	163
Planned supply interruption (12-24 hours)	Planned interruptions (12-24 hours)	1 property affected by a planned interruption (12-24 hours)	175	1138	220
Planned supply interruption (>24 hours)	Planned interruptions (>24 hours)	1 property affected by a planned interruption (>24 hours)	154	1342	209
Taste & odour not ideal (a few days)	Taste and smell of water	1 property affected by non-ideal taste and smell (few days)	147	804	178
Discoloured water (few hours)	Discoloured water	1 property affected by discoloured water (few hours)	60	353	74
Occasional low water pressure (3-6h per time)	Low water pressure	1 property affected by occasional low water pressure (3-6 hours)	80	338	92
Hosepipe bans (May-Sep)	Temporary use ban	1 property affected by a hosepipe ban (May-Sep)	38	211	46
Restrictions on essential use of water (2 months)	Rota cuts and/or standpipes	1 property affected by a restriction on essential use of water (2 months)	594	4361	771
Works causing road disruption in Bristol area (any duration)	Traffic disruption	1 property affected by planned and unplanned works of any duration	67	735	98 ⁴

Table 3-3 – Bristol Water WTP values

3.2.4. Phase 4 – Consulting on our plans (April – August 2018)

Phase 4 of our PR19 engagement programme was talking to customers about our draft plans. This includes the Water Resources Management Plan and the Business Plan.

As part of this phase of engagement, we reconvened groups of customers with whom we had tested our options in phase 3. We brought together our Youth Board, Customer Forum, and the customers who participated in deliberative events and focus groups to participate in a customer summit. This was held at our offices and was a day of discussion and

⁴ Source: Accent / PJM

C3 - Delivering outcomes for customers

deliberation around the refined options for our Business Plan. In addition to this, we also conducted a range of acceptability testing – through surveys and focus groups – to learn what customers who had not engaged with us before thought of our plans.

The outputs of this process and their influence on the performance commitments are described below as they had a direct impact on our ODI framework, for more information about the process see document C1, Phase 4: Consulting on our plans April and May 2018.

We consulted with over 4,000 customers on our draft Business Plan in April and May 2018. The different engagement methods are outlined in Table 3-4 below.

Face to face discussions	Hard to reach focus groups	30
	Face to face survey	100
	Customer Summit	100
Surveys with engaged customers	Online panel	1233
Surveys with new customers who have not previously been engaged in our plans	Acceptability testing survey	612
	Representative survey	1000
	Summer roadshow	700
	Open consultation (on website)	261
	Out-card survey	24
Total		4,060

Table 3-4 - Customer Engagement on Draft Business Plan

What our customers have told us

Overall, customers were positive about being asked for feedback on our draft Business Plan, and felt valued and involved in the decision-making process. In most cases customers were able to respond to the questions, providing substantive comments and views. All of our plans were acceptable to a clear majority of customers. We therefore are confident that the research is robust and has provided solid customer evidence to inform our final Business Plan - as well as the further research on this plan.

Key conclusions from our draft Business Plan consultation

The key conclusions we drew from our consultation on the draft Business Plan are as follows:

Our Priorities

To add water quality explicitly into our priorities and to do further research on our community commitments.

The overall bill impact

We concluded that the final bill level should be no higher than in the suggested plan.

Individual Performance Commitments

C3 - Delivering outcomes for customers

We concluded that all performance commitments should be included as in the suggested plan, with some at a lower price. We will carry out further research on our proposals, in particular the community commitments.

Our outcomes

- Continue with suggested plan for excelling at customer experiences.
- Continue with suggested plan for leakage and water efficiency.
- Continue with the suggested plan for safe and reliable.

We identified that we should carry out further research regarding proposals for the environment and community, as they require clear explanation for customers in order to test their support.

Although customers as a whole found the plan acceptable, their sensitivity to this will depend on the level of the bill. Reducing the bill for the suggested programme will build support, in particular:

- Amongst the “social renters” customer segment, who are our most price sensitive;
- To reflect areas where some customers expect improvements to save money, such as leakage and water efficiency; and
- Considering the cost of the package where improvements are about reducing long-term risk, rather than service issues customers generally have experience of, such as safe and reliable supply.

Vulnerability Assistance

Ensure all customers who could benefit from social tariffs do so, with a revised target to increase from 50% of those eligible to 75%, subject to further customer research on future social tariff designs.

Our ambitions and priorities

93% of customers felt that our proposed ambitions reflect what matters to them. However, 36% said that something was missing. Customer comments included:

- Recommendation for water quality to be explicitly included in the priorities;
- Recommendation for protecting the environment to be an explicit priority; and
- Request for greater clarity over the commitments and how progress would be measured.

“Keep the water flowing to your tap” received the strongest level of agreement from customers, followed by “you get a bill you can afford”. Our community priority received the lowest level of agreement, although only 10% of respondents actually disagreed with this ambition.

Conclusions - Our ambitions and priorities

C3 - Delivering outcomes for customers

We know from our ongoing engagement that water quality remains a top priority for customers, with many saying that it should be our core area of focus.

The community priority area had 62% support from customers and when discussed in the abstract it is something that we have heard mixed views on throughout our long-term engagement programme. However, when talking to customers about specific initiatives such as Refill Bristol or our work to protect and maintain leisure sites such as Chew and Blagdon, in general customers are very supportive - if unaware - of Bristol Water's wider role.

We carried out additional research into the specific initiatives as a result of this conclusion, which is summarised in the acceptability testing information above.

A reference to the environment was already reflected in our outcomes. For customers we need to make a clear link to our community initiatives and water quality. While there are mixed opinions from our customers on the environment, again this is often because it is spoken about in general terms. In addition, we have found that our future customers and most informed customers, as well as the Challenge Panel, tend to prioritise environmental concerns.

In summary, our conclusions were:

- To add water quality explicitly into our priorities;
- To carry out further research on our community initiatives; and
- To maintain the outcome "local community and environmental resilience".

Overall bill level

	Slower	Suggested	Faster
Overall preference for investment	44%	44%	12%

Table 3-5 – Customer Preferences for pace of investment

When combining all data sources, there is least support for the faster plan, and broadly a 50/50 split between preferences for the slower and suggested plan. However, overall our conclusion is to continue with the suggested plan as we would expect that those who chose the faster plan would opt for the suggested rather than the slower plan if given the choice between the two. Affordability concerns were driving customers' choice of the slower plan, while customers also valued the service improvements in the suggested plan. Delivering the suggested plan at a lower cost would likely maximise customer support at final acceptability testing. The acceptability testing as part of our draft Business Plan consultation set service levels for the slower plan at the lower end of customer Willingness to Pay and the faster plan at the upper end of customer Willingness to Pay. As the suggested plan was set at our proposed Willingness to Pay levels, we adjusted our final Willingness to Pay to reflect the results of this consultation acceptability testing. We therefore conclude that our final acceptability testing should test customer support for the suggested plan at a lower cost, as well as the other specific conclusions. We also concluded that we should test the impact of the lower service levels where the slower plan for a service area was preferred (i.e. above 50% for that area). In this way, we concluded we would get a full picture of customer service and bill levels from the wide range of our research.

When looking at different data sources, there is more support for the suggested plan in studies that showed customers the cost of a package of improvements rather than the cost of individual performance commitments.

C3 - Delivering outcomes for customers

Customers selecting the slower plan were driven largely by keeping their bills as low as possible and affordable. Customers choosing the suggested (44%) or faster plan (12%) often cited value for money (they felt the additional amount on the bill was worth it for the improved services), and a wish to invest in future services.

We carried out an acceptability survey with NERA and Traverse to assess how customers' choices between our improvement plans changed when the overall bill changed as well. This work was designed to understand whether how customer priorities changed to different bill levels that were not linked to service changes, as well as the cost of packages of service improvements. We wanted to test whether our customers would still be willing to pay for improvements in a situation where bills were higher overall (for example because of changes to the cost of borrowing for water companies) or if they would be willing to invest more in improvements where bills have gone down (for example because of efficiency savings). As explained above, we used this research to test our triangulation of the range of Willingness to Pay studies that we had undertaken and used to develop the packages of plan options for the consultation.

When a single plan was presented, customer acceptability ranged from 60% for the faster plan to 84% for the slower plan. Those who preferred the slower plan were particularly price-sensitive, as their acceptability increased to 91% amongst those who were presented with a £9 lower "starting bill" with larger efficiencies. Price sensitivity increased for higher service cost options.

When asked to select a package of service options, the suggested plan received the most support, and this increased from 48% to 51% (with the slower plan reducing from 35% to 30%) for the lower base cost/ higher efficiency scenario. The survey showed that customers are more willing to pay for improvements (i.e. choose the suggested or faster plan) when bills are lower overall. This effect is stronger for customer segments with lower household incomes, supporting the view that customers are constrained by their personal circumstances when making choices about investment.

Conclusions for overall bill level

The final bill level should be no higher than that in the suggested plan.

A plan with a lower bill level with the suggested service levels is more likely to be accepted by more customers (particularly low-income groups).

Individual performance commitments

We presented customers with distinct alternatives for 11 performance commitments, enabling them to effectively 'build their bill'. When selecting options for these performance commitments the largest number of customers selected the slower plan for 8 and the suggested plan for 3. Customers commented that they would support plans that mixed and matched plan levels for different services.

In general, customer choices appear to have been driven by price. For example, the strongest support for any one plan element over another, is where 67% of customers chose the slower plan for interruptions to supply. However, this performance commitment is the most costly, with the slowest plan at £3 for this performance commitment being more expensive than any of the slower plans for other performance commitments, and many of the suggested plans. It also features a high level of service improvement, reflecting the minimum level of Willingness to Pay and the industry upper quartile forecast level of performance in 2020.

As such, we recommend that the outcomes from this study are not conflated with customer priorities for a preferred plan as a whole. This study demonstrates how customer choices are affected by bill levels, and the relative importance varies depending on customer perception, even where costs are shared. Where some customers prefer the slower plan for a particular service area, often support for the faster plan was also higher than the overall package. Therefore we conclude that the bill and service choices for individual components did not as a whole reflect customer views on what they feel is important to them as part of their water supply overall, looking at our engagement and research as a whole.

Conclusion for individual performance commitments

The study demonstrates how customer choices are understandably affected by bill levels.

Table 3-6 shows our recommendation for each individual measure.

C3 - Delivering outcomes for customers

We have made recommendations below based on an analysis of this data, and our broader understanding of customer priorities:

Table 3-6 - Customer consultation outputs

		Slower	Suggested	Faster
	Overall preference for investment	44%	44%	12%
Excellent customer experiences	PACKAGE	36%	51%	13%
	Customer experience	34%	58%	8%
	Vulnerability assistance	36%	49%	15%
Local community and environmental resilience	PACKAGE	44%	37%	19%
	Leakage	44%	39%	17%
	Water used by customers	52%	32%	16%
	Enhancing your local environment	40%	38%	22%
	Community satisfied with our contribution to the local community	56%	32%	12%
Safe and reliable supply	PACKAGE	49%	36%	15%
	Water quality	54%	28%	18%
	Interruptions to supply	67%	24%	9%
	Water that doesn't look clear	46%	41%	13%
	Water that doesn't taste or smell right	28%	39%	33%
	Protection against a major water supply event	53%	24%	23%

Further research needed

Recommendation

Recommendation: continue at lower cost

C3 - Delivering outcomes for customers

Looking at the cumulative plan choice, we highlight in Table 3-7 below where customers preferred other plans compared to the slower plan. The faster plan shows the proportion of customer who chose the faster plan, the suggested column shows the proportion that chose either the faster or suggested plan - reflecting the fact that customers who accepted the faster plan would likely find the suggested plan acceptable.

		Slower	Suggested	Faster
	Overall preference for investment	100%	56%	12%
Excellent customer experiences	PACKAGE	100%	64%	13%
	Customer experience	100%	66%	8%
	Vulnerability assistance	100%	64%	15%
Local community and environmental resilience	PACKAGE	100%	56%	19%
	Leakage	100%	56%	17%
	Water used by customers	100%	48%	16%
	Enhancing your local environment	100%	60%	22%
	Community satisfied with our contribution to the local community	100%	44%	12%
Safe and reliable supply	PACKAGE	100%	51%	15%
	Water quality	100%	46%	18%
	Interruptions to supply	100%	33%	9%
	Water that doesn't look clear	100%	54%	13%
	Water that doesn't taste or smell right	100%	72%	33%
	Protection against a major water supply event	100%	47%	23%

Table 3-7 - Customer preferences for investment packages

Our outcomes

Outcome: Excellent customer experiences

There is solid support for suggested plan (51%). It should be noted that the cost of the suggested improvement plan for customer experience is less than the slower improvement plan on the other two outcomes. However, a majority of customers did choose paying something (£2 or £8) over paying nothing (slower plan, £0), which implies that they support a part of their bill contributing to service improvements in this area.

Most customers who chose the suggested plan say that it is realistic and achievable and offers value for money.

- **Customer experience (58% suggested plan)** Despite the slow plan adding no cost to the customer bill, a majority of customers still chose the suggested plan. However, it is worth noting that this is the cheapest suggested plan of all the three packages. In previous conversations, some customers chose not to place a high value on customer experience as (a) they thought it was a given, and something they shouldn't have to pay more for; and (b) they were happy with the service they received and weren't interested in paying more for further improvement.
- **Vulnerability assistance (49% suggested plan)** As with the customer experience performance commitment above, despite the slow plan adding no cost to the customer bill, a majority of customers still chose the suggested plan. However, for this performance commitment, twice as many customers chose the faster plan than for the customer experience commitment. Future customers, affluent customers and rural customers appear to support higher levels of help to vulnerable customers, and previous engagement has shown that customers do tend to value some degree of support to vulnerable people.

Conclusion – Outcome: Excelling at customer experiences

Continue with the suggested plan, mindful that many customers see great customer service as a normal business activity.

Outcome: Local community and environmental resilience

The slower plan has the most support (43%) for this outcome, but it is worth noting that this package area had a mix of views, and the highest support for the faster plan (19%).

- **Leakage (44% slower plan).** There was no £0 bill impact option for leakage, and most support was shown for the lowest cost option. We know from our other customer engagement and research that there is strong support for leakage reduction. It's noticeable that 39% of customers did choose the suggested plan, despite it being the biggest bill impact of any of the suggest plan performance commitments (there was no other bill impact of over £3 that received more than 30% support). As such, it's likely that the split of opinion is over "who pays" and that customers would like us to deliver improvements at a lower cost to them.
- **Water used by customers (52% slower plan).** We know from other conversations that customers do think that reducing water usage is important. However, as they expect it to reduce bills, this survey did not translate it into an area where they supported a bill increase (when splitting a plan package into its components). Future customers gave strong support in this area.
- **Enhancing your local environment (41% slower plan)** As in other research, environmental issues provoke a polarisation of views with some customers giving this a top priority (22% chose the faster plan) and others not supporting this area at all - seeing it as outside Bristol Water's remit. There was strongest support for the option with no bill impact.
- **Community satisfied with our contribution to the local community (55% slower plan).** Only 12% of customers chose the faster option, even though it is the same price as the suggested plan. There is some concern that this is an area that should not be the financial responsibility of customers, or part of Bristol Water's remit. However, other research suggests this is due to the limitations of descriptions for the concept in this type of survey.

Conclusion: Local community and environmental resilience

We consider that those customers who preferred the slower plans demonstrated bill-sensitivity, but not necessarily a lack of support for service improvements as a whole. Customers see leakage as a demotivating factor for water efficiency, and do not see why they should use less water and pay more on their bill to enable that. Messaging around these areas is critical as they are seen as interconnected and underpinned by the idea of waste.

There is a clear reluctance from some customers to choose environmental and community options that have an impact on their bill. However, the environment is also an area with strong support for the faster plan. As per the recommendations linked to our ambitions, we have found in other research that customers are supportive of clearly-described community and environmental initiatives, but that the measures being proposed need to be specific descriptions of what is planned rather than in a general survey description.

We concluded that further research regarding the interventions and initiatives for the community was required, in order to test customer support for the specific details of the proposals. This included the benefit of these initiatives to the environment.

For leakage and water efficiency, we concluded that customer support for ambitious leakage and water efficiency targets would depend on the acceptability of overall bills. We concluded that we would need to balance short and long-term ambitions in a way which maintained customer support, but that if we could deliver the improvements at a time when bills were seen to be reducing as well, they would gain strong support.

Outcome: Safe and reliable supply

The slower plan package received the most support (50%), perhaps unsurprisingly as the suggested plan was an increase of £9 more than the slower plan— a larger difference than between the slower and suggested plans for the other outcomes.

- **Water quality (54% slower plan).** Most customers chose the lowest cost option. There was a lower level of support for the suggested plan than for even more expensive options. This reflected that the option reflects legal compliance, and at component level it was not possible to show an improvement in the survey (as the target was zero for both the suggested and faster plans). However, future customers and lower socio-economic groups prioritise water quality as a key concern. There is general support for water quality as the highest priority for the company, but some question why Bristol Water should be aiming to improve already high standards.
- **Interruptions to supply (67% slower plan).** Customers chose the lowest cost option. The suggested plan option was the most expensive of all suggested plan options, so this is not surprising. Having a reliable water supply is a top priority in general for customers, so this is a clear response to the price package and level of improvement in the slower plan rather than the service area as a whole. We also recommend reviewing the presentation of this performance commitment, as it implies to customers that there is a very small difference between plans.
- **Water that doesn't look clear (46% slower plan).** It's interesting that a higher proportion of customers chose the no-cost option, over paying an additional £1 for the suggested plan. Conversations with customers have told us that they do prioritise water that looks good, but often feel that this is something that Bristol Water should deliver as part of their core business, and shouldn't be something they need to pay more for. This may reflect that it is outside of their personal experience, something that tends to be less noticed in a full willingness to pay survey. Lower socio-economic groups in particular cited this as a very important area.
- **Water that doesn't taste or smell right (39% suggested plan).** A high proportion of customers chose the faster improvement plan (33%). From other research we know that this is a priority area for customers. However, it is worth noting that the faster plan cost only an additional pound, and the suggested plan had no bill impact at all. In addition, 28% of customers chose the slow option, despite the suggested option having no cost to them. This could be because they felt it that their water supply is currently acceptable and hence isn't a priority area for them.
- **Protection against a major water supply event (53% slower plan).** Customers chose the lowest cost plan, although interestingly there was a split between the suggested and faster plan, despite the fact there was no difference in cost (both £3). This implies that customers do not see this as a priority area, which reflects views gathered in other engagement that customers feel that the current level of risk is acceptable.

C3 - Delivering outcomes for customers

Conclusion on Outcome: Safe and reliable supply

Continue with the suggested plan, if phasing of improvement means that it can be delivered at a time when bills are reducing overall. A safe and reliable supply has always been the top priority for customers throughout all our research and engagement.

Vulnerability Assistance

75% of customers agreed that we should support people who cannot afford their bill and 84% thought we were taking the right approach in encouraging customers to pay something they could afford.

When given the choice between different levels of assistance for vulnerable customers, customers had a higher level of agreement to maintaining the current level of cross subsidy to support social tariffs compared to the two higher levels which would see their contributions increase. However, 52% of customers support increasing social tariffs from 50% of those eligible to 75% of those who could potentially benefit. This is particularly true for future customers, affluent customers, and rural customers. We tested acceptability of how we can share benefits of performance with customers, including the degree to which ensuring all eligible customers who want a social tariff should be able to benefit from it.

Customer conclusion – Vulnerability Assistance

From a fairness perspective all customers who can benefit from a social tariff should be able to do so. We will need to explore, when we reach 75% coverage, how to fund the social tariff (either customers, from reinvestment or by reshaping the social tariff with other vulnerable customer support).

3.2.5. Phase 5 – Refining and acceptability

The final phase of our engagement activity was to test the final Business Plan agreed by our Board with a large group of customers to confirm that we had heard and understood their views. We also identified a small number of areas where additional evidence would help us to refine the plan in line with customer views. We aimed to reach a point, by early August, where we were confident that our plan for 2020 to 2025 was robustly-evidenced and that it balanced our customers' priorities with our regulatory obligations. We also wanted to invite our most engaged customers, our customer forum, to be involved in the production of our final submission, in recognition of the crucial role they played in developing the plan and in line with the participatory approach we took throughout.

Throughout July and August, we consulted with 1,479 customers on our final Business Plan. This consultation enabled us to ensure that our research provided the most robust customer evidence. We used different methods of engagement including online surveys, focus groups and telephone surveys; as well as capturing the views of different customer segments. These different methods allowed us to test the acceptability of the plan with customers who had different levels of engagement, reflecting the findings of previous phases of research that as customers learn more about Bristol Water and the Business Plan process their views tend to change compared to customers encountering the process for the first time with little or no prior knowledge.

C3 - Delivering outcomes for customers

ICS Consulting carried out our main “pre-final” plan acceptability testing survey, of 304 customers, utilising our customer segmentation⁵, which was used to support final planning decisions. Accent Research carried out research which covered the future of the water sector and included some supporting research, using deliberative groups and a survey. We also carried out a larger telephone survey of 679 customers, to test the acceptability of the plan with new customers; a series of focus groups with low income and future customers; and a final meeting of our customer forum.

Across all of our acceptability research we found that our proposed bill was acceptable to the large majority of our customers⁶. We found that levels of acceptability were highest with our most engaged customers, the customer forum and in the focus groups; and lowest in the telephone survey, and Accent online survey, where customers had the least information about the plan.

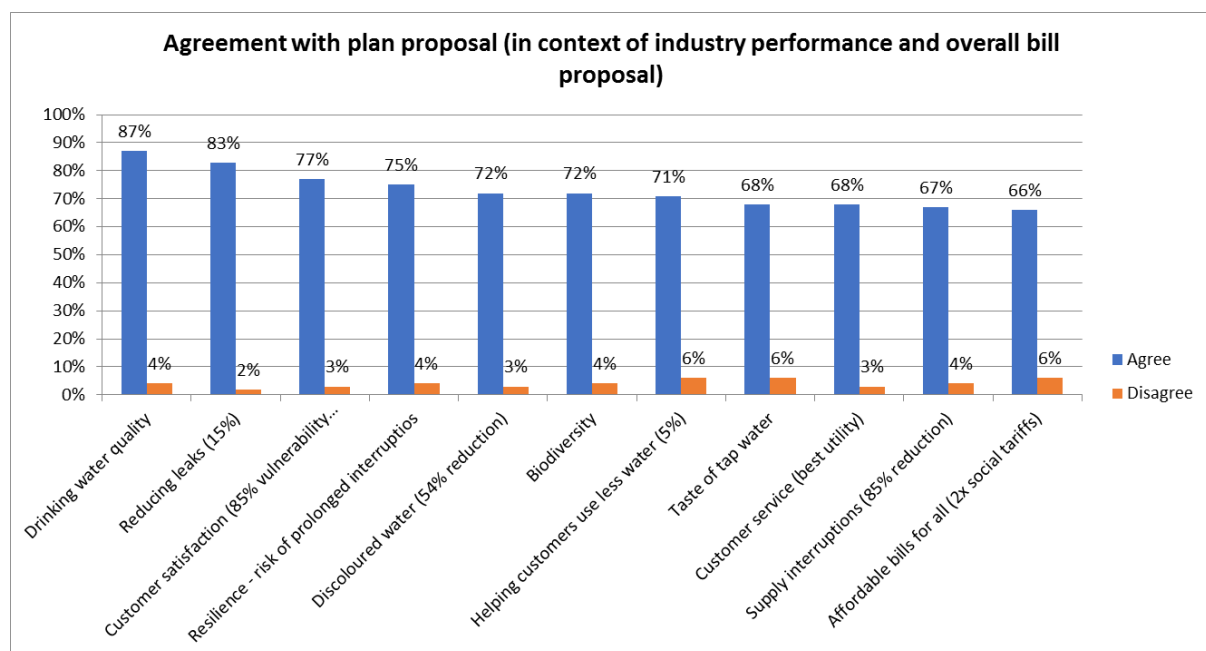


Figure 3-10 - Acceptability of bill in real terms

Customer forum n=24, Focus groups n=32, online survey n=400, telephone survey n=679, Accent online survey n=304

In the rest of this chapter we focus on the key insights from this phase of engagement which informed our Business Plan.

Acceptability of our final plan

In our online survey we asked customers for their views on each area of investment: all of the specific investments in the plan are supported by a majority of customers. The survey included brief comparative information on current Bristol Water performance compared to other companies, including current bill levels.

⁵ Due to the low sample size it was necessary to combine the safely affluent and thirsty empty nest segments in our analysis

⁶ Ref. C1: Summary of research items B31 - B34 Final Business Plan consultation

C3 - Delivering outcomes for customers

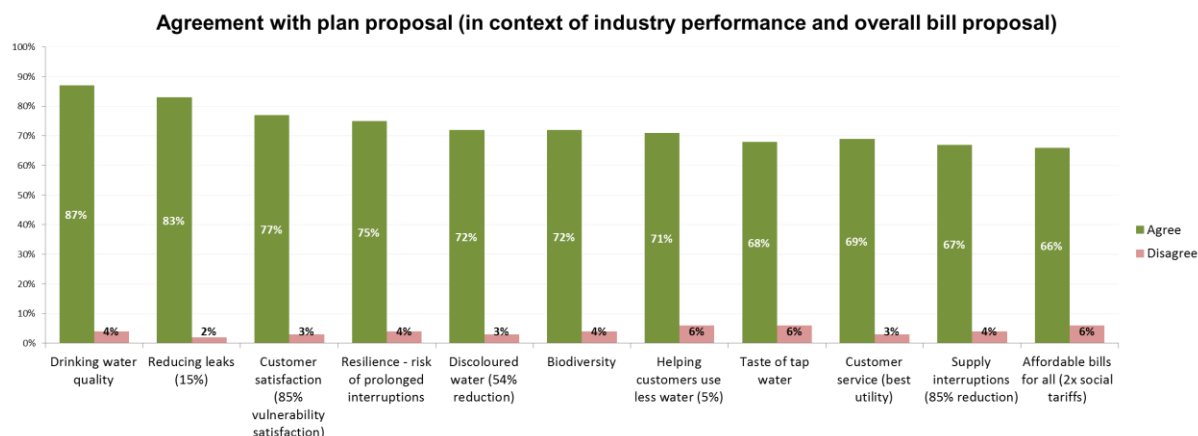


Figure 3-11 - Acceptability of final plan

This validates our decision to proceed with the suggested plan levels from the draft Business Plan, albeit at a lower cost. The plan as a whole achieved very high levels of acceptability, and was preferred to an alternative slower plan that saw some improvements delayed. This informed the decision to not adjust plan targets for individual elements of a package that was supported as a whole. This also validates for targeting upper quartile for supply interruptions, rather than providing customer evidence that this dynamic target and ODI would not be supported by customer views. We can therefore with customer support adopt this part of the customer methodology, together with the stretching water efficiency (and other) targets.

	Acceptability result	Bill profile
Real plan acceptability	93%	£185 in 2019, £176 / £175 out to 2025
Nominal plan acceptability	83%	£192 in 2019, £186 2020, £201 2025
Prefer the suggested plan	82%	£175 each year 2020 - 2026
Prefer the slower plan. (with less stretching supply interruptions, resilience, water efficiency reductions and no community initiatives)	18%	£4 lower 2020-25 then £8 higher 2026

Table 3-8 - Acceptability of final plan results (online survey, n=304)

Consistent with our other research, such as the draft Business Plan testing, acceptability ranges from 84% for the social renter customer segment to 97% for the matured and measured customer segment. This was consistent across both our online and telephone surveys.

Ordering of segments by highest level of acceptability changes once inflation is added

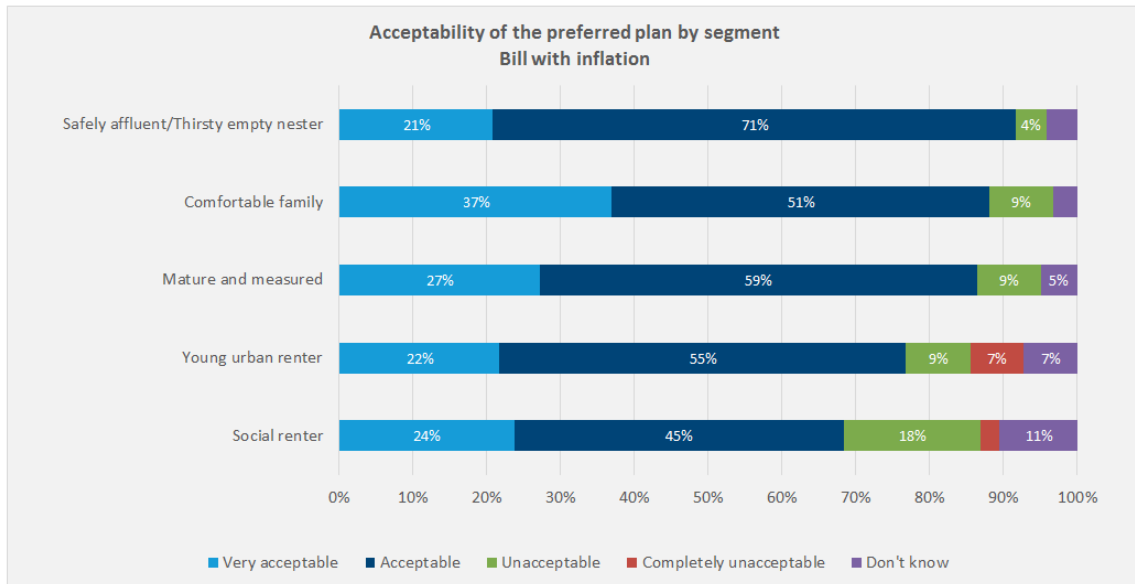


Figure 3-12 - Final Acceptability Result by segment

With inflation, acceptability ranges from 69% for the social rented segment, to 92% for “safely affluent”/ “thirsty empty nester” segments. Ultimately it is those who find the plan acceptable with lower incomes who appear price-sensitive, something which we also observed in previous research. It is affordability in urban areas and our range of social tariffs that therefore build support, although this group of customers also have higher levels of “don’t know”.

In the NERA acceptability research for our draft Business Plan (with inflation), acceptability was 77%, but only 60% for the social rented sector. So we can successfully demonstrate that the decisions to maintain the suggested plan quality but at a lower cost have boosted acceptability by 6% on average, but by 9% in the most price sensitive/ income vulnerable customer group. In this study we found that for the “social renter” segment there were similar levels of acceptability for both the low and medium quality packages at the lowest base price. This suggests that these customers were more influenced by the base price than by the quality of the package, although the sample size was small.

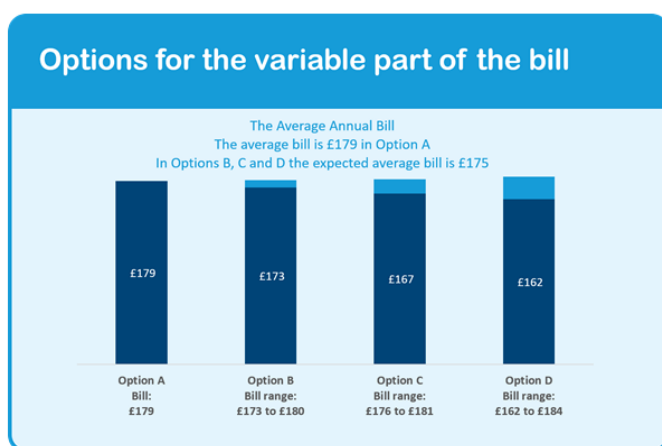
NB The NERA research had a central price “Base +£9” for the customer research with a starting bill that varied -£9 to “Base” and +£8 to “Base +£17. The Low “Slower” and High “Faster” plan contained individual priced and costed service improvements around a “medium” suggested plan which aligns in all key service aspects to our final Business Plan, other than a cheaper price by c£13 (i.e. Base, less £4 in 2025).

Table 3.3
Percentage of Respondents who Accepted Given Business Plan by Customer Segment

Plan:	Baseline price group:	Social Renter	Young Urban Renter	Comfortable Family	Safely Affluent	Mature and Measured	Thirsty Empty Nester	All segments
Low P/Q	Base	88%	88%	94%	N/A	95%	100%	91%
	Base +£9	75%	93%	80%	100%	85%	100%	88%
	Base +£17	67%	68%	64%	100%	81%	60%	71%
	All groups	78%	84%	81%	100%	88%	80%	84%
Medium P/Q	Base	86%	54%	92%	100%	76%	67%	72%
	Base +£9	60%	76%	87%	100%	69%	80%	77%
	Base +£17	63%	57%	93%	100%	81%	50%	72%
	All groups	70%	61%	90%	100%	75%	67%	74%
High P/Q	Base	56%	67%	61%	67%	59%	100%	62%
	Base +£9	67%	52%	63%	100%	44%	80%	56%
	Base +£17	63%	55%	76%	67%	52%	100%	62%
	All groups	60%	58%	67%	71%	52%	89%	60%

Note: there were no “safe affluent” respondents in the sample who were presented the low P/Q plan with baseline prices. Source: NERA analysis.

The ICS research asked about customers’ preferences for timing of ODI payments. 80% of customers supported in-period ODIs, rather than end-of-period adjustments, consistent with other findings that customers prefer to avoid large, sudden changes in bill level. We also asked customers about the scale of annual ODI (including CMEX) changes, based on the conjoined P10/P90 risk of £4 per annum, individual P10/P90 risk of £9 per annum and full range of £14 per annum.



Customers were asked to rank their preferred bill and incentive option.

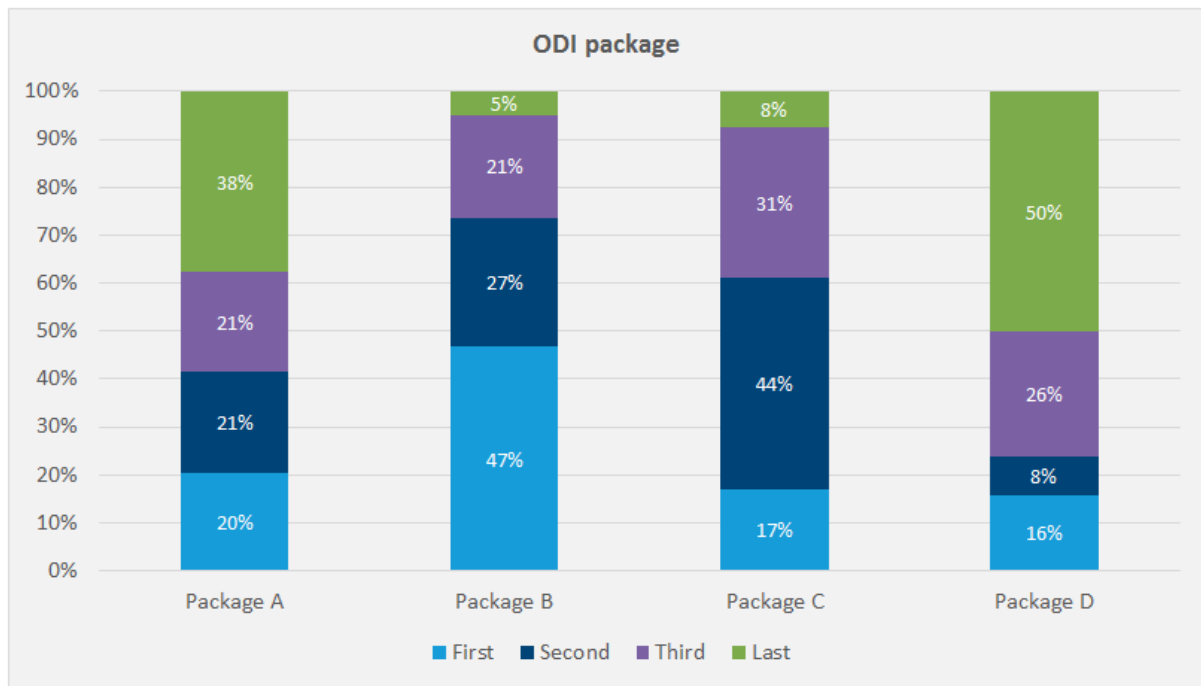
Most preferred = 1
 Least preferred = 4

Results are shown overleaf

For the scale of bill adjustments; the preferences in order were:

1. Package B +/- £4 (c.£2m p.a.)
2. Package C +/- £9 (c.£5m p.a.)
3. Package A (no incentives)
4. Package D +/- £14 (c.£8m p.a.)

C3 - Delivering outcomes for customers

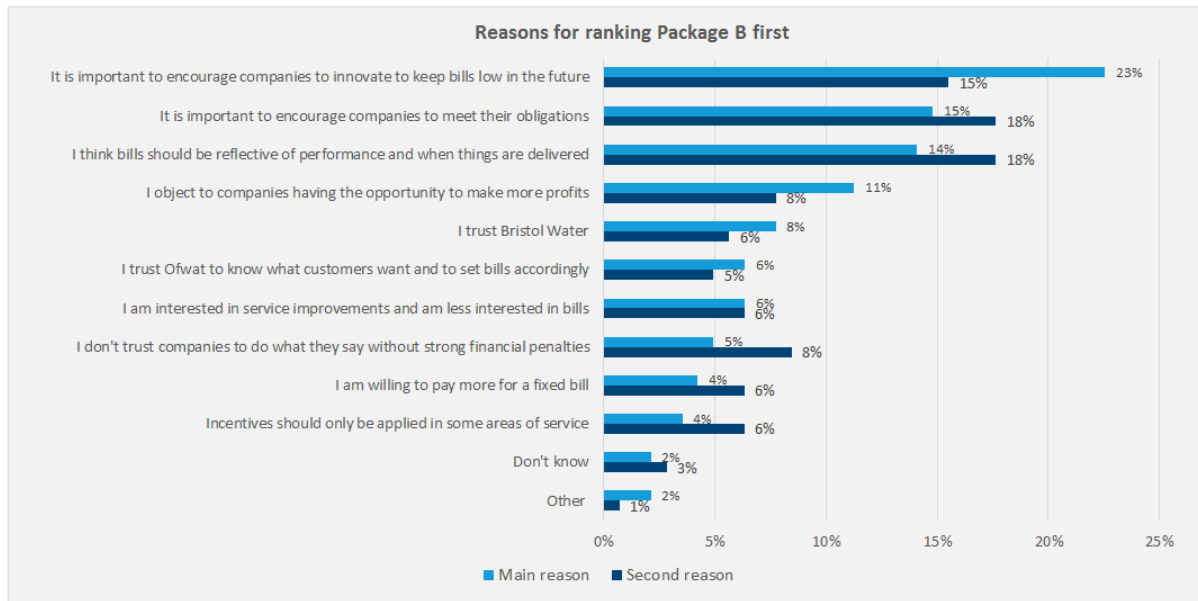


Package B is a clear winner on first and second preferences, and also the least objected to/disliked.

Option	Average Rank
Package A – No incentives	2.8
Package B – Small incentives	1.8
Package C – Medium incentives	2.3
Package D – Larger incentives	3.1

The main reason customers chose package B is because it encourages companies to innovate to keep bills low, supported by encouragement to meet obligations. It also balances those who believe bills should reflect performance, with those who object to performance being reflected in profits.

C3 - Delivering outcomes for customers



For the community initiatives ODI a list of the proposals were presented and the view on the scale of incentives was then obtained. This validates the customer Willingness to Pay for these, and that they will be incentivised.

Community initiatives		£
No incentive	25%	0
£2 rewards and penalties	42%	0.84
£5 rewards and penalties	33%	1.65
Weighted support		2.49

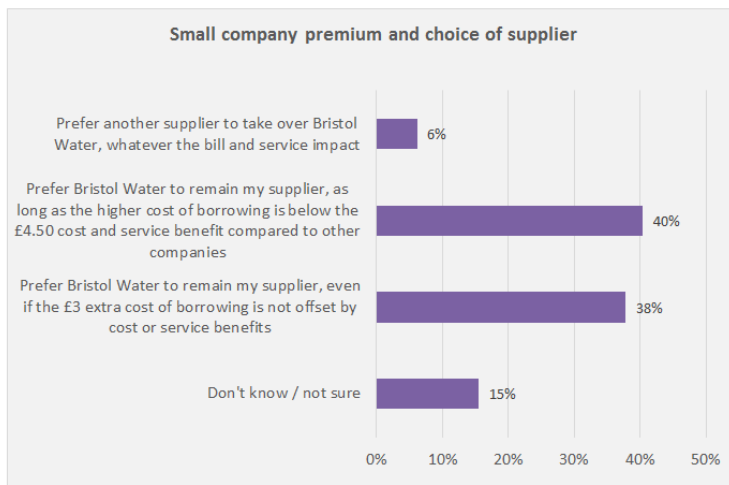
Either the median support of £2, or weighted support of £2.49, is sufficient to justify the scale of community incentives proposed.

The Accent research in the context of industry trust shows 74% support at £2 (v75% in the ICS survey) and 47% support at £5 (v33% ICS survey). Different survey approaches therefore validate the results overall.

Small company additional cost of debt

In our online survey we also explored incentives in the context of the additional financing cost of being served by Bristol Water as a small water company.

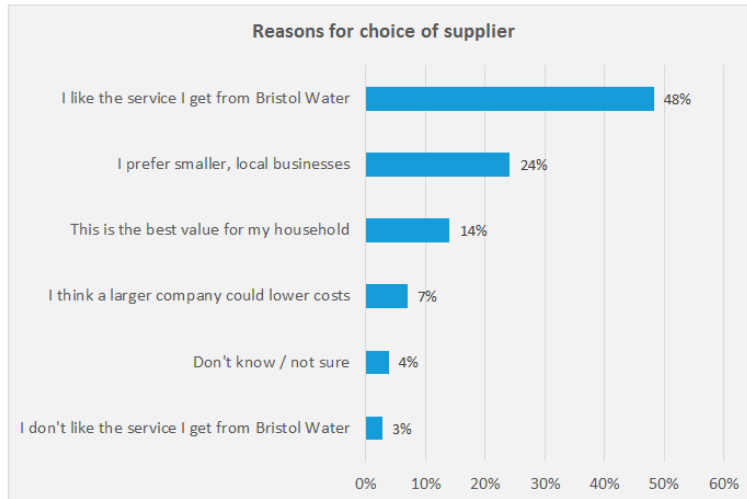
When informed about the higher cost of borrowing 78% of customers prefer Bristol Water to remain their supplier



6% would prefer another supplier with the remainder saying don't know.

For 40% this is conditional on the benefits of a small company exceeding the cost

Reasons for choice of supplier - Majority like the service they receive or prefer their supplier to be a local business



Question excludes those answering don't know when asked about their choice of supplier

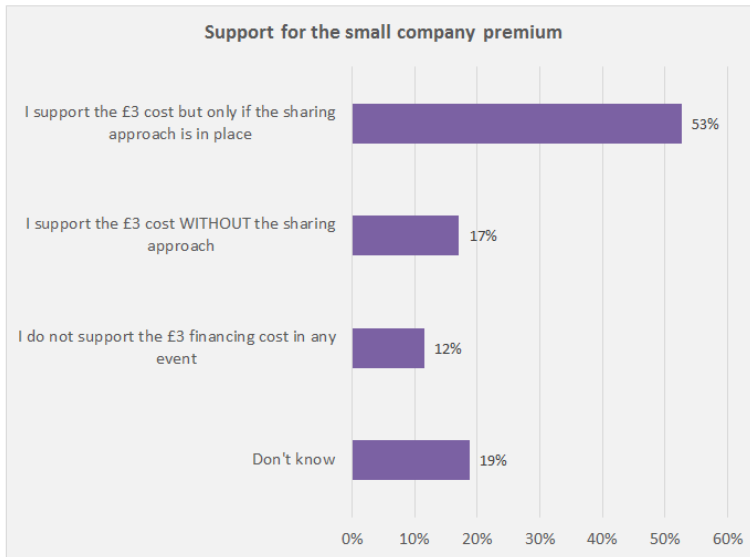
Sample = 257

- 79% prefer Bristol to remain their supplier, despite a £3 cost of finance. This support is 38%, even if there are no offsetting benefits in our service levels, which we value at £4.50.
- Only 12% of people oppose the financing cost, and only 6% prefer another supplier in any case.
- It is our level of service and preference for supporting local businesses that mostly drive acceptance of this higher cost, rather than it being price or value for money driven. This suggests that the benefits test is not crucial. From a customer logic

C3 - Delivering outcomes for customers

perspective, a merger based approach to valuation was strongly disliked as it is inconsistent with customer support for this additional cost.

- 70% of customers support the additional cost of borrowing either with or without the sharing mechanism, with 53% of customers specifying that they support the cost only if sharing is in place. This tells us that customers do largely support the re-investment mechanism. However 19% said they didn't know whether or not they supported the additional cost, suggesting that there is a need for more clarity.

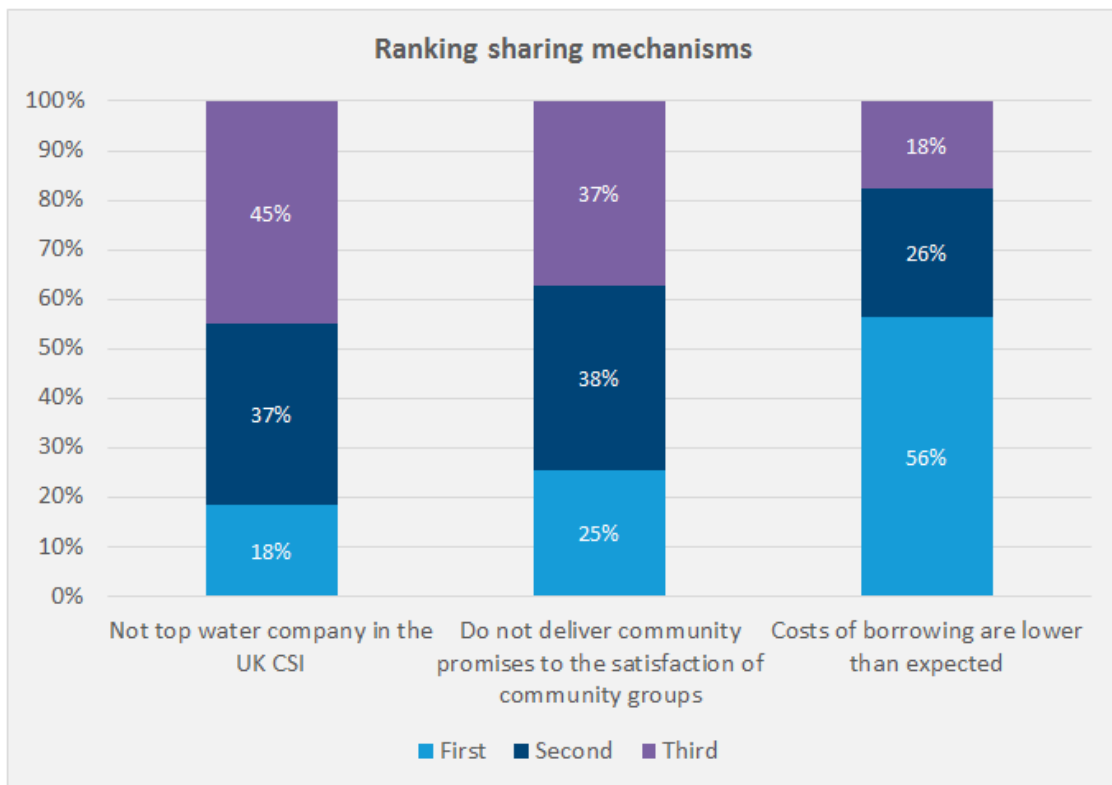


Over half only support support the SCP when the sharing approach is in place

2 in 10 support the SCP without the sharing approach

Only 1 in 10 did not support the SCP with the rest answering don't know

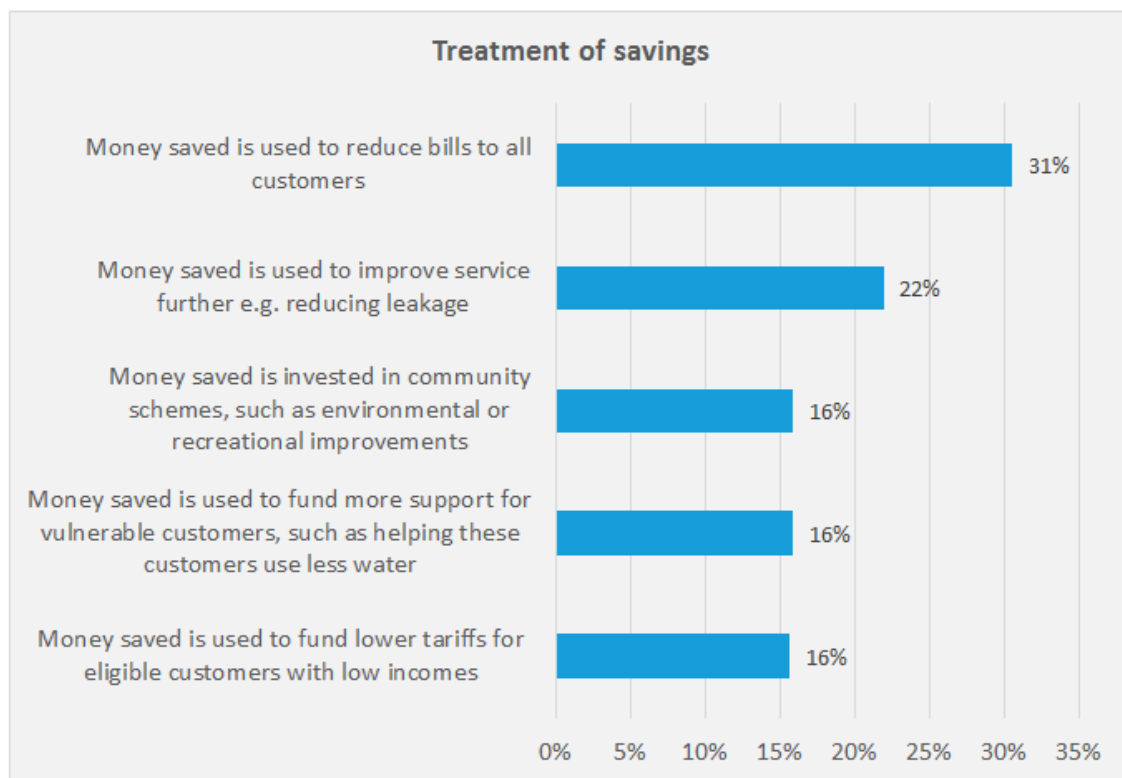
When asked for their views on their preferred triggers for the sharing mechanism, customers favoured a trigger based on borrowing costs, followed by community initiatives and the UKCSI are the ranking of different sharing mechanisms in order ranking, although there are supporters for each trigger being applied.



C3 - Delivering outcomes for customers

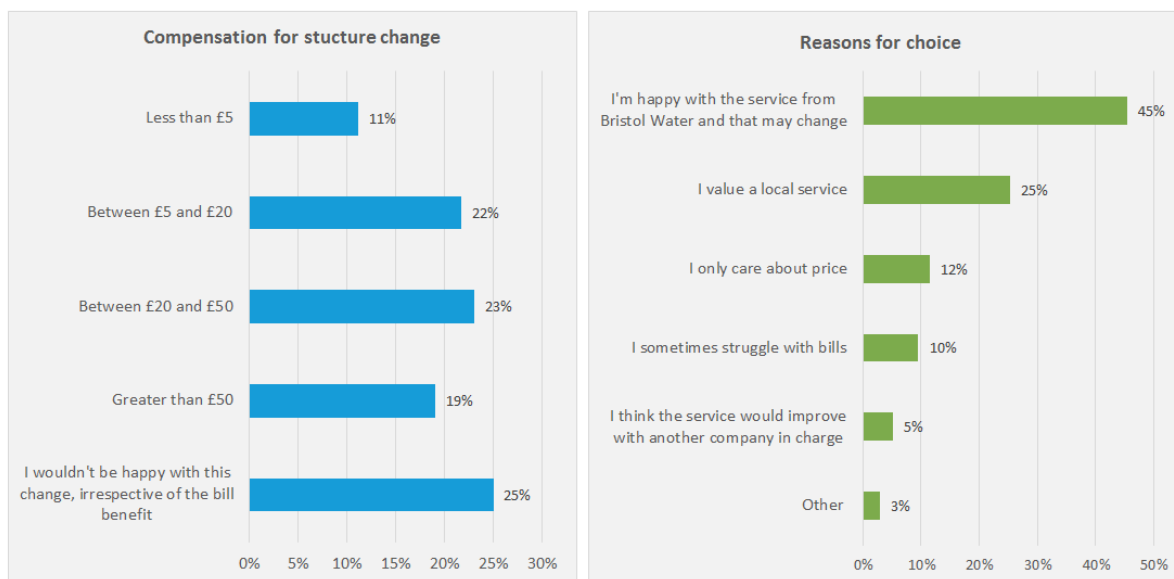
When we asked customers how they would like sharing to be implemented they had mixed views. We asked customers to say how they would allocate sharing across five options, on average customers asked for 31% to be passed on to customers through bill reductions, 22% to be reinvested in service improvements and 16% for each of the three “Bristol Water For All” reinvestment scheme options.

In conclusion, we feel that whilst there is some support for small company borrowing costs to be linked to ODI delivery or offset against ODI rewards, in general the support is not sufficient to justify this greater complexity in the regulatory regime.



Finally, there is very little support for another supplier replacing Bristol Water without a significant bill benefit, suggesting that the above results confirm that for a very small minority further bill reductions are required in order to gain support for a package of risk-reward mechanisms including outcome incentives.

C3 - Delivering outcomes for customers



More customers would want a bill reduction greater than £20 in order to agree to a change of supplier. Even ignoring the 25% who wouldn't want a new supplier whatever the bill reduction was, this cautiously equates to a £20 value of the loss of Bristol Water as supplier, which is significantly higher than £3 small company cost of finance or the value of potential outcome rewards or underperformance payments. This could increase to c£59 if the 25% who wouldn't want any other supplier whatever the bill benefit were considered to value this at the whole bill amount.

Compensation for another company		£	£	£
Don't want anyone else whatever the bill benefit	25%	175	43.75	
Less than £5	11%	0	0.00	0.00
£5 to £20	22%	5	1.10	1.47
£20 - £50	23%	20	4.60	6.13
Greater than £50	19%	50	9.50	12.67
			58.95	20.27
			All	Ignoring no compensation

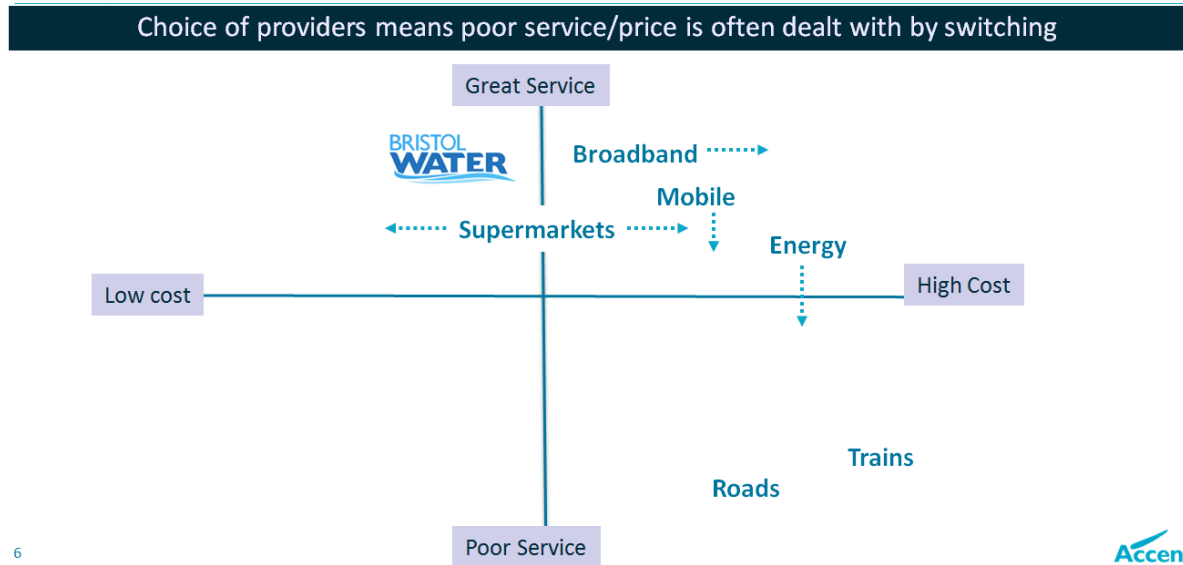
The value of Bristol Water is clear from the 45% who value this because of service, and the 25% whose primary reason is a preference for local suppliers. Only 5% think a larger company would have better services, and price sensitivity is only there for 12%. 12% say they are driven only by price, and 10% say they sometimes struggle to pay their bills, who may be driven by affordability. We think this validates the evidence on our service benefits, and shows that there is little demand for lower bills that a larger company could bring through lower financing costs. However we also recognise that price is a significant factor for some customers, in this case around a quarter, and so our Business Plan delivers efficiency and affordability wherever possible. This survey is in the context of our bill and price proposals, which includes comparative information on both bills and service levels.

[Accent research on the Future of the Water Sector](#)

C3 - Delivering outcomes for customers

The Accent deliberative research explores the topic of trust in Bristol Water, and performance in the context of the wider water industry.

Despite more competition elsewhere Bristol Water fares well in comparison to other utilities



Our research as a whole tells us that most customers find our plans acceptable, in part because they do not have a reason not to trust us. Lack of specific knowledge about what we do limits support for our environmental or community initiatives, but once explained support is strong. This suggests that in research surveys we may not get as much support as we might want, until we demonstrate in practice and the community becomes more aware of why they do not often experience service issues. Those who do experience them, though, tend to retain their trust.

Customers usually claim to trust Bristol Water on the basis of no reason not to do so

Limited reasons to engage means customers tend to lack any detailed company knowledge

- No real visibility in everyday life
- Taken for granted
- Little/no experience of supply interruptions
- Limited interaction with customer services
- No billing issues (though some confusion as to what bill actually covers)
- Positive views of operational effectiveness based on longevity and lack of bad press
- Value for money linked to low cost comparison with other utilities and high water dependence
- Taste and softness could be improved for some
- Mixed perceptions of size of company and whether part of a group
- No specific knowledge of community involvement or future planning

Scores for overall performance: 8-10 (mostly 9-10)
Scores for mobile and broadband: 6-8
Scores for energy providers: 4-8
Scores for trains/roads: 2-4

8

Accent

Plans do not necessarily build trust without service experience, so it is an important part of our plan to communicate more about what we do.

‘Lower’ scores reflect some cynicism and lack of detailed knowledge of current performance

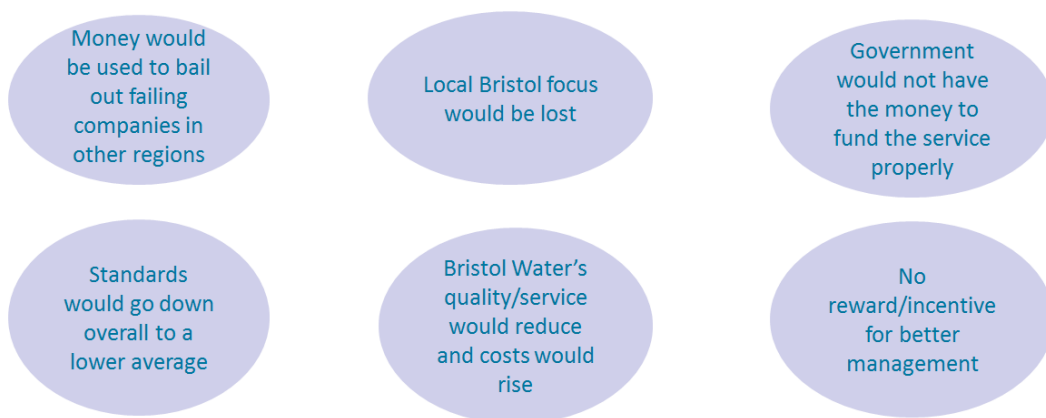


13



Initial discussion reveals customers are largely opposed to nationalisation of the water industry

Some customers admit to ‘selfish’ rather than societal reasons for preferring the status quo



15

When (made) aware of Bristol Water’s history, customers claim no real influence on their views regarding nationalisation



Discussion suggested that a “social contract” was important, and would help to justify fair returns to shareholders. Bill reductions in the context of bill levels that are falling anyway were not preferred to reinvesting in services, as the bill reduction amounts that could arise from financing sharing were too small to be considered significant. This is similar to customers’ lack of desire for the change in supplier, and their expectation that there would need to be significantly lower bills in order to make a change in the status of Bristol Water acceptable to customers.

Sharing Mechanism less appealing than commitment to future improvements and community investment

Customers happy for shareholder dividends to reflect operational efficiency and VFM

- Principle of small refund if planned improvements are not met feels unwieldy
 - Preference for clear communication on underperformance
 - And reinvestment with new commitments
- Sharing of financial success as small bill decrease generally considered unnecessary
 - No voiced resentment of shareholder dividends
- Commitment to successful outcomes preferable to small bill reduction
 - Some feel 'refund' is fair, others prefer reinvestment
- The concept of a social contract to benefit the community appeals overall
 - Some expectations that executive pay and dividends would reflect this

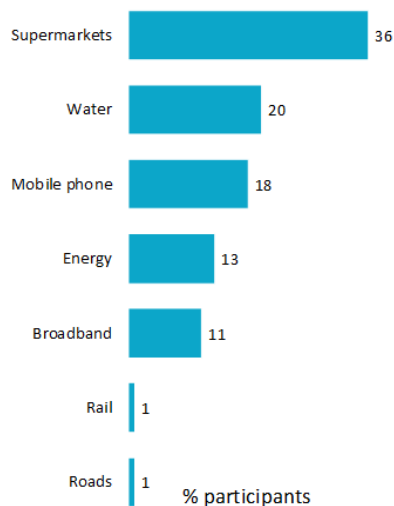
20



Accent trust survey

Deliberative discussions were used to inform a quantified online survey of 400 Bristol Water customers - which confirmed that Bristol Water is seen as providing a better service than other utilities, including markets where choice was available.

Customers consider overall service delivered by water providers to be better than that of most other service providers



1 in 5 customers believe that water service providers offer the **best** overall service of any provider.

- Those who are pro-privatisation are significantly more likely to rank water service providers as offering best service compared with pro-nationalisation individuals
- Males significantly more likely than females, and 55+ significantly more likely than 35 - 54 age group to rank water as best service

6 Q8r1 – 8r7: Please order the following providers in terms of their overall service. Base = 400

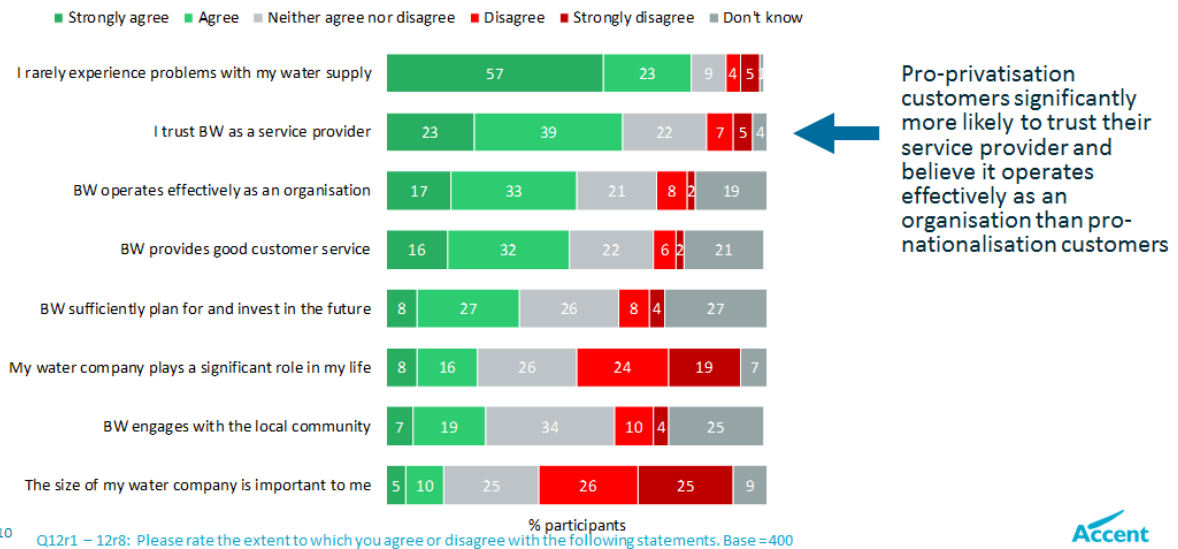


- The survey found that 85% of customers are satisfied or very satisfied with services from Bristol Water, with only 3% dissatisfied or very dissatisfied. However 39% rate the cost of water as high or very high, with 47% believing it to be neither high nor low, and 14% low or very low. Where customers felt that the cost of water was high or they were dissatisfied with service they were more likely to support nationalisation.

C3 - Delivering outcomes for customers

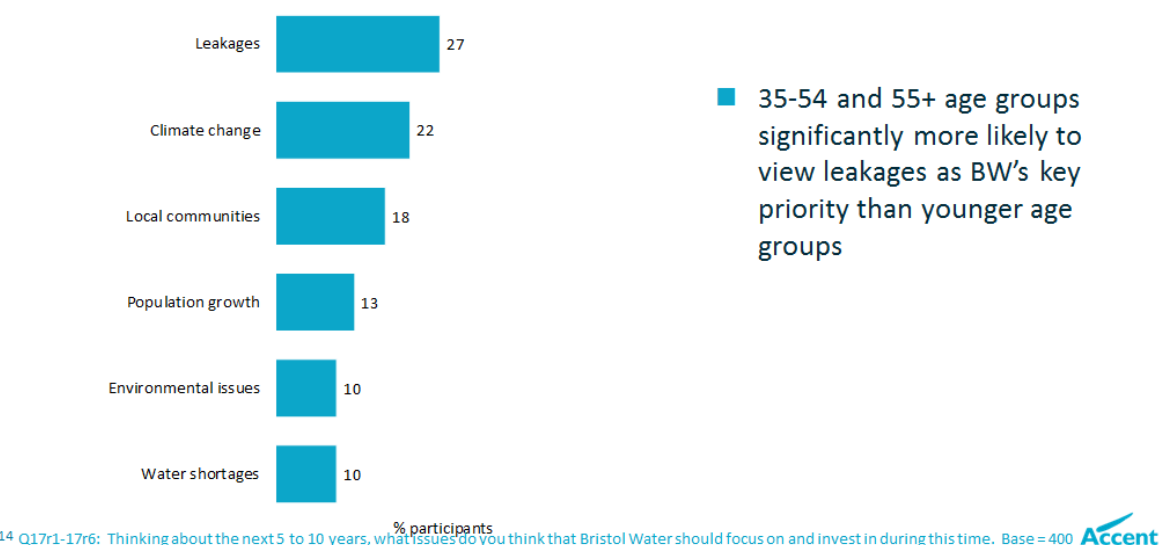
- Lack of trust also drives support for nationalisation. As Bristol Water is more trusted than other utilities and other water companies we can assume that nationalisation is less supported by our own customers based on this research. Of the statements customers were asked, shown below, trust in Bristol Water as a service provider was the second highest ranked, behind rarely experiencing problems with water supply.

More than 60% of customers trust BW and rarely experience problems with their water supply



When asked about their views on what our priorities should be, leakage is seen as a key priority, but supporting local communities also features, ahead of the environment or water shortages. However, customers' awareness of the potential for us to work more with local communities is low, and the opportunities for what we as a small company could do are, not surprisingly, not that important to customers until we have proved how we make this work in practice.

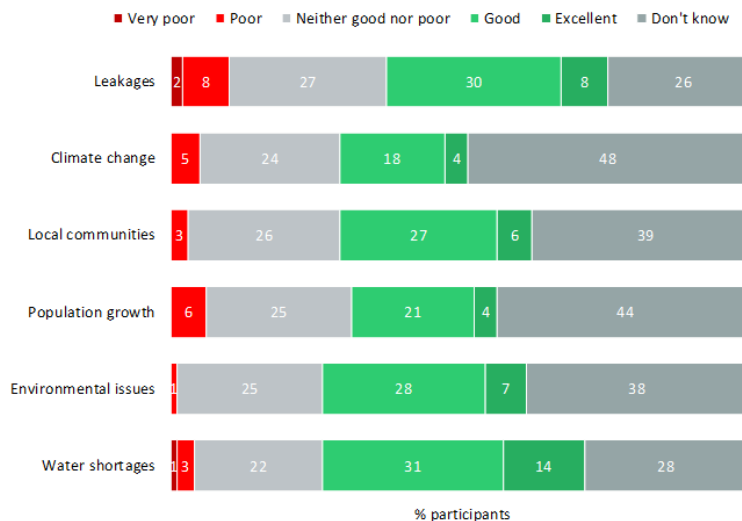
Leakages are considered Bristol Water's key priority to focus on and invest in over the next 5-10 years



C3 - Delivering outcomes for customers

Where customers do have knowledge, or an opinion, though, we are seen throughout as performing well on these challenges. Across the six topics we mentioned, more customers said our performance is good or very good than poor or very poor.

Water shortages currently thought to be dealt with most effectively. 1 in 10 think that treatment of leakages is poor/very poor.

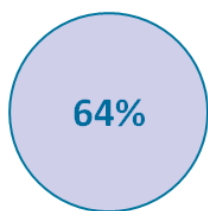


15 Q19r1-19r6: How well do you think Bristol Water is currently dealing with these issues? Base = 400

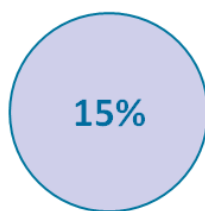


When asked about their preference between nationalisation or private ownership, there was very little support for nationalisation - and we therefore conclude that customers show a preference for fair returns linked to performance.

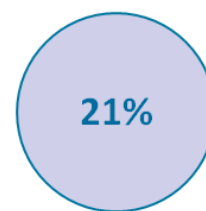
The majority of customers are against nationalisation and would prefer Bristol Water remained private



... of customers would prefer BW to remain private



... of customers would prefer BW to become nationalised



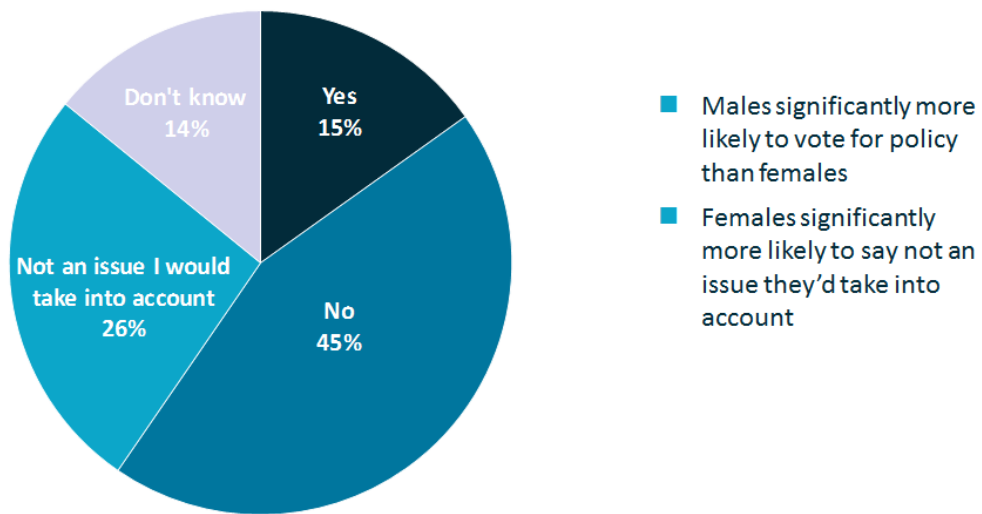
... of customers are unsure

19 Q23: With regards to your clean water provider, would you prefer Bristol Water... Base = 400



The research further revealed that in our supply area, a nationalisation policy might be a vote-loser, with a surprisingly high recognition that it would make a difference at an election (3:1 against nationalising Bristol Water for those who would consider it at election time).

Only 15% would vote for a policy which supports nationalisation in future elections

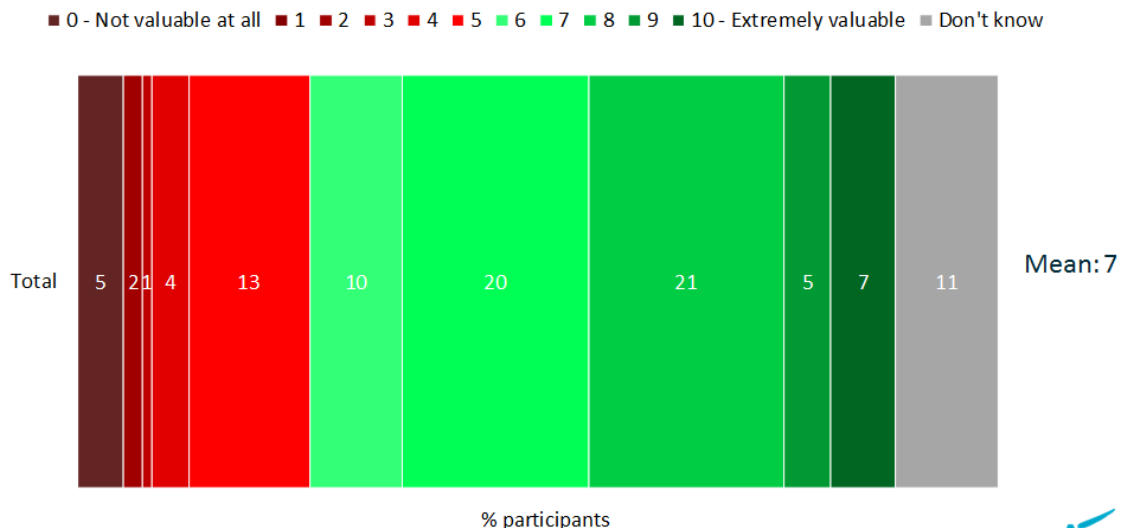


²⁰ Q24: Would you vote for this policy in the next general election? Base = 400



A social contract between a company and its customers is supported, although executive pay (35%) and sharing returns (26%) are more seen as why this would be adopted than retaining local suppliers (22%) and community projects (18%), although all these issues are relevant.

Overall, customers value the idea of some form of social contract

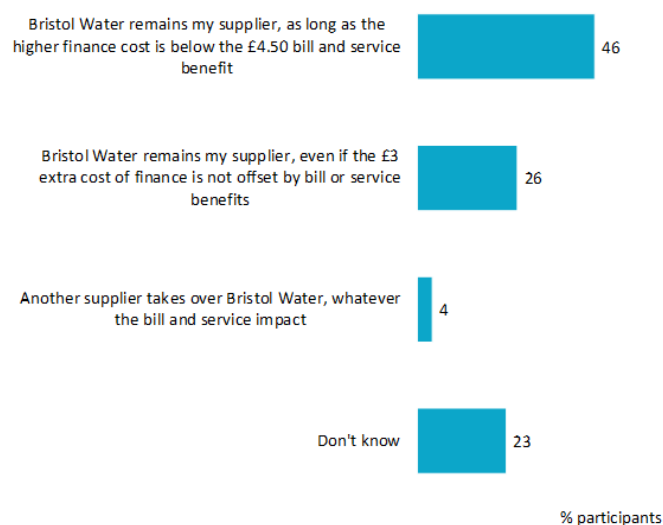


²³ Q30: Base = 400



The Accent research also validates the small company premium, with offsetting benefits. But there is no desire to replace Bristol Water as a supplier.

There is substantial endorsement to keep Bristol Water the size that it is



27 Q30d: Base = 400

% participants



Customer Water Forum July 2018 – Final Plan and ODI Design

Following the ICS research, which suggested that customers supported in-period ODIs and a cap on annual bill changes, we wanted to explore this further with our informed customer forum - who had been with us throughout our Business Plan journey. In July 2018 we met with 24 members of our Customer Forum. This gave us the opportunity to discuss the acceptability of our final plan, but also to consider specific issues related to the design of Outcome Delivery Incentives, such as the use of deadbands, caps and collars. Although the research questions were not specifically on the principle of ODI rewards and penalties, we had a lot of discussion around this. The session focused on our final Business Plan, and the extent to which it met the Forum's expectations and reflected the feedback they had given us.

When we talked about rewards we found that even among these highly engaged customers there were mixed views on the principle of rewards, with some customers favouring reductions only, some advocating league tables, and others supporting the rewards approach to improve performance. However customers generally agreed that the most important thing is to communicate clearly to customers why their bill is going up or down.

When we asked whether customers supported a cap on the amount the bill could vary by in a year, we found that all members of the forum supported the £4 cap we proposed in order to keep bills stable. We also asked whether the incentives proposed reflected customer priorities, and most agreed, although as in other meetings of the Customer Forum some customers felt strongly that environmental measures should be more of a priority. When we talked about the specific penalty areas, some customers questioned how penalties could help to improve performance on asset measures, as the penalty might reduce investment.

When we asked the Customer Forum about bill levels, all 24 members told us that the bill level proposed was acceptable or very acceptable, with many commenting how pleasantly surprised they were to see bill reductions in real terms. The group went on to discuss whether there was an alternative that kept bills flat and saw more investment in improving services. This is consistent with our findings that the more customers engage, the more supportive they are of investment, and when we consider this alongside the level of

C3 - Delivering outcomes for customers

acceptability of our bill from customers with affordability we are confident that we have achieved a good balance of price and service

Customers supported the overall balance at the Forum, with a range of individual opinions as shown below:

Question: Do you agree that we should cap the total amount to £4 each year?

All customers supported the cap approach in general, in order to provide a more stable bill so it is easier to manage. Most agreed with the cost and said that they wouldn't notice the £4 variance so support the cap. However, a few groups thought the £4 cap was low and didn't think that it was much of an incentive. Some customers thought it is good for companies to have to pay penalties when they make mistakes and don't reach their targets, one group suggested that Bristol Water should pay more as a penalty above the £4 cap.

Range of incentives in annual bill	Decrease on your bill	Increase on your bill
Customer service measure – compared to other companies	-£4	+£4
Leakage	-£2	+£2
Supply Interruptions	-£1.50	+£0.50
Water quality & pressure	-£1.00	+£0.50
Long-term asset health (water quality at works and mains bursts)	-£3.50	Nil
Resilience – population protected	-£2	+£2
Metering & water efficiency	-£1.50	+£1.50
Community & Environmental	-£0.50	+£0.50
Total	-£16 (Our worst performance ever)	+£11 (Best in the industry)

Table 3-9 – Range of Incentives

Question: Do the incentives reflect your priorities?

One group suggested swapping the customer services and environmental values as they were much more interested in the environment than reaching particular customer service rankings.

Customers thought that the penalties on everything other than asset health made sense, however they struggled to understand why you would incur penalties on assets of £3.50 and

C3 - Delivering outcomes for customers

recognised that this was the highest penalty. They commented that it seems odd to deprive assets of money that are already not meeting the targets. Rather than the penalty, they would prefer to see money put into re-investments in the assets instead. Some commented that they don't care about the bill breakdowns and the details that make it up, they just want it to be affordable and consistent. One customer wasn't interested in further engagement about this during the AMP.

We also presented customers with our proposed bill profile, both before and after inflation:

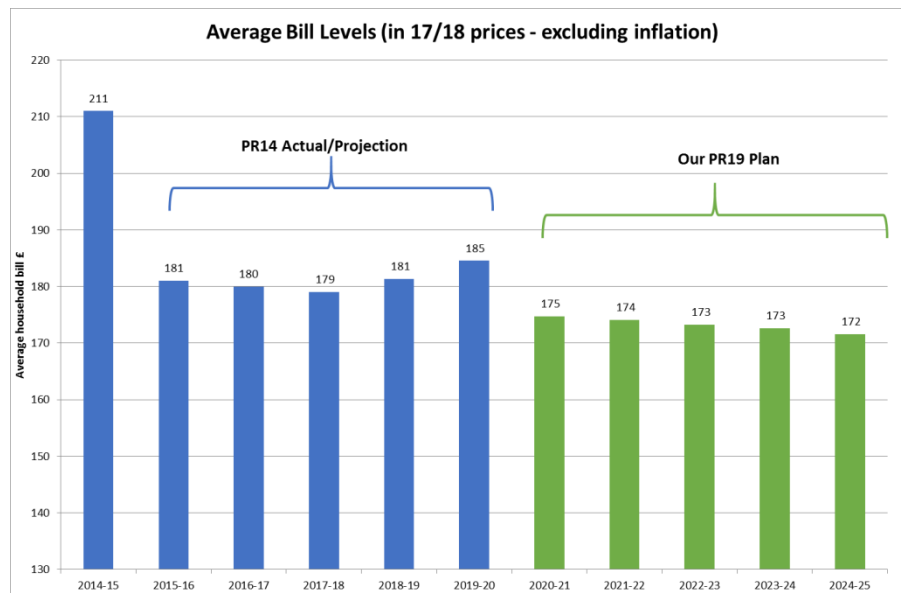


Figure 3-13 - proposed average bill levels in 17/18 prices

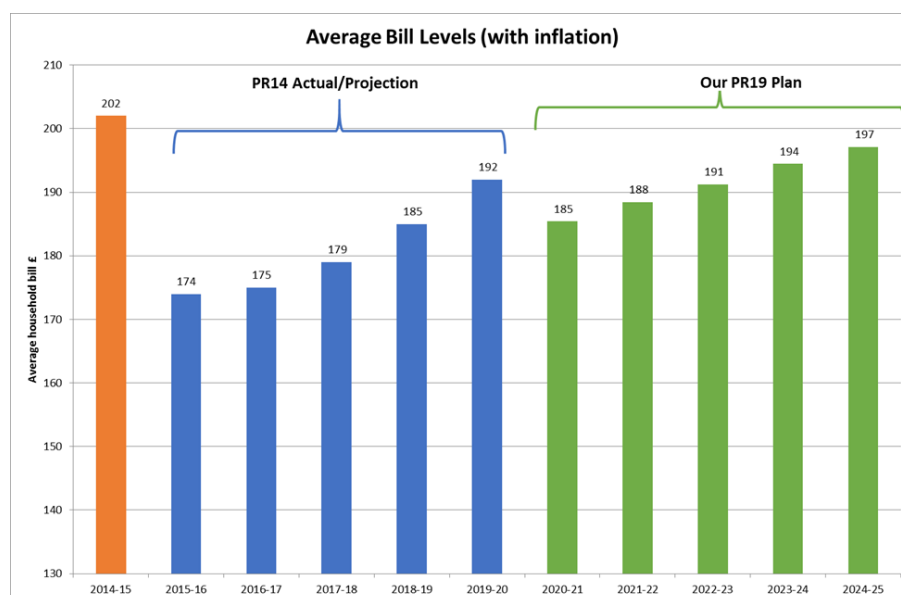


Figure 3-14 - Proposed average bill levels with inflation

Question: How acceptable is the proposed bill to you before inflation (£175 in 2020, £172 by 2025, compared to £185 now)?

C3 - Delivering outcomes for customers

Customers were happy that the bill level is reducing, most customers commented that they did not expect a reduction so they were pleasantly surprised. They recognised that keeping bills flat is quite an achievement and being able to reduce them is brilliant.

Customers expressed that the bill level is the key way to show that the Business Plan is fair, especially as customers don't get a choice regarding who supplies their water. There were questions around where the savings are coming from, and what makes up an 'average household'.

One group were sceptical of the headline 'bills are reducing', if they may actually go up due to other factors, and some commented that they just want to know what their bill is going to be and for us not to say it will be reduced without inflation.

Given the small bill reduction, one group asked why we don't just re-invest in the assets and keep bills flat – this was strongly discussed and agreed by customers in the group.

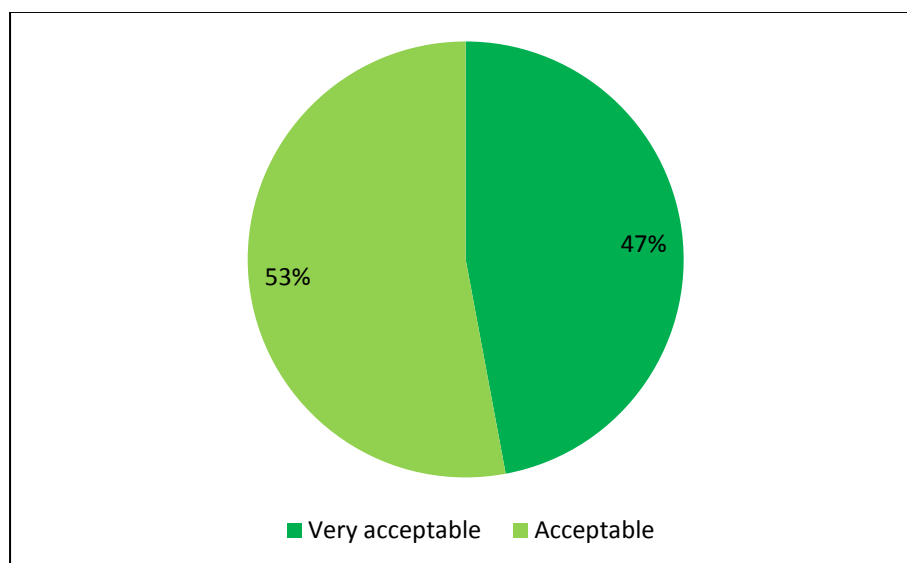


Figure 3-15 - Acceptability of proposed bills in Business Plan

3.3. Our long-term ambition

By committing to our outcomes for the next five years we must also take into account the long-term effects and consequences that these will have on the both the company itself and on our future ability to deliver for our customers and our stakeholders.

We already work closely in collaboration with local communities, local businesses and stakeholders. We are well-placed to continue to build on these relationships to meet the current and future needs of our customers, stakeholders and the environment, fulfilling a role well beyond the basic provision of water.

We published '[Bristol Water... Clearly](#)' in February 2018 - our long-term ambition, looking ahead to 2050. It sets out what we have been doing, who we have been listening to and working with, and what we could do in the future. It sets out some of the options we face for the long term, and how we plan to work with others to address shared challenges. A summary of our long-term objectives outlined within this document is provided below.

Being trusted

- The subject of our reputation runs through the entirety of our strategy and supports all the other strategic objectives.
- It is not only about maintaining legitimacy with customers, consumers, communities and other stakeholders, but also about them having trust in our stewardship of the long-term sustainability and resilience of Bristol Water and our local environment.

Excel at Customer Experience

- Building trust and achieving customer excellence needs to continue.
- This is our top priority.

Developing our people and our business

- Our employees and delivery partners are key to our strategy – they are the source of our customer excellence and innovation. Customer excellence means we need to be ready for the future shape of utilities that provide services that customers want (potentially not just water), rather than just a product.

Leading Efficiency

- We are committed to transforming our cost base.

Our objectives assist management priorities in delivering our PR19 outcomes, as well as keeping focus on delivering on our longer-term targets, as the table below demonstrates.

C3 - Delivering outcomes for customers

Long-Term Objective	PR19 Outcome	Performance Commitment	Unit	2025 Target	2030 Target	2050 Target	Long-Term Plans
Excel at customer experience	Excellent customer experiences	Customer measure of experience (C-MeX)	C-MeX score	TBC	TBC	TBC	<p>Our long-term aim is to keep bills affordable, by</p> <ul style="list-style-type: none"> Improving our communication channels Improving the use of data, e.g. linking asset information to customer data Transforming the way that we deliver so that every interaction with us is positive e.g. reduced traffic disruption from our works Guaranteeing a faster response-rate to our customers Implementing customer centric asset decisions e.g. network geographic location link to customers Giving customers choice of bundled services – e.g. provide water efficiency choice Implementing customer self-service – e.g. Direct Debit payment choices used to help trigger vulnerable service promotion
		Developer services measure of experience (D-MeX)	D-MeX score	TBC	TBC	TBC	
		Percentage of customers in water poverty	%	0	0	0	
		Value for money	%	83	86	90	
		Percentage of satisfied vulnerable customers	%	85	90	100	
		Void properties	%	1.8	1.8	1.8	
Being Trusted	Safe and reliable supply of water	Water quality compliance	CRI Index	0	0	0	<p>Our long-term aim is deliver resilient supplies, by:</p> <ul style="list-style-type: none"> Delivering resilient and high quality water Ensuring all major population centres are served by more than one source Building trust through communicating our longer term plans Continually improving the resilience of water supplies – this requires us to deliver across a wide range of areas, including leakage and water efficiency Undertaking community engagement and leadership in promoting the value of water Sharing our success and partnership working e.g. where customers help to support innovation that ultimately has wider benefits <hr/> <ul style="list-style-type: none"> Ensuring all customers have good water pressure (including end consumers on shared connections) Maintaining the long-term health of our assets as a minimum; improving long-term health as we deliver the service improvements that customers value
		Supply interruptions	Hours: mins: secs / prop/ year	00:1:48	0:01:36	0:01:00	
		Mains bursts	Mains bursts per 1,000km	133	131	130	
		Unplanned Outage	%	1.74	1.64	1.4	
		Risk of severe restrictions in a drought	%	0	0	0	
		Customer contacts about water quality – appearance	Contacts per 1,000 people	0.43	0.34	0.1	
		Customer contacts about water quality – taste and smell	Contacts per 1,000 people	0.25	0.23	0.1	
		Properties at risk of receiving low pressure	No. of properties	60	45	20	
		Turbidity performance at treatment works	No. of failures	0	0	0	
		Unplanned maintenance – non-infrastructure	No. of jobs	3272	3272	3272	
		Population at risk from asset failure	No. of people (population)	290,000	0	0	

C3 - Delivering outcomes for customers

Long-Term Objective	PR19 Outcome	Performance Commitment	Unit	2025 Target	2030 Target	2050 Target	Long-Term Plans
Develop our people and our business	Local community and environmental resilience	Leakage (annual)	MI/d	36.5	36	35	<p>Our long-term aim is to fulfil a role well beyond the basic provision of water, by:</p> <ul style="list-style-type: none"> • Developing cross-utility service offerings that connect with customers and communities • Supporting local academic and entrepreneurial partnerships • Investing in and developing our people and organisation • Building joint ventures and partnership working to get wider benefits to our business and local community resilience • Participating in and encouraging further use of competitive markets, such as for water resources and demand management • Reducing leakage and consumption • Collaborating to deliver resource efficient communities • Actively promote the benefits of metering
		Per capita consumption (PCC) (annual)	l/h/d	135	128.75	110	
		Meter penetration	%	75	82.5	90	
		Raw water quality of sources	Kg P removal/year	531	533.5	541	
		Biodiversity Index	Biodiversity Index	17711	17761	18723	
		Waste disposal compliance	%	100	100	100	
		Water industry national environment programme (WINEP) compliance	%	100	100	100	
		Abstraction Incentive Mechanism (AIM)	MI	2,843.4	2,843.4	2,843.4	
		Local community satisfaction	%	85	85	93	
Leading efficiency	Corporate and financial resilience	-	-	-	-	-	<p>Our long-term aim is improve resource efficiency, by:</p> <ul style="list-style-type: none"> • Optimising our use of water resources and water treatment, in line with our Drinking Water Safety Plans • Delivering on ambitious targets to reduce costs further • Implementing smart technologies in energy cost reduction and increase renewable energy generation • Applying world class asset management processes • Applying continuous improvement and lean cost reduction to everything we do • Continuing to build long-term financial resilience • Achieving a low and efficient cost of financing

Table 3-10 – Long-term plans

C3 - Delivering outcomes for customers

In some ways the challenges we face are familiar – such as driving further efficiency gains to offset new cost pressures, and ensuring that we raise finance as effectively and as efficiently for the long term as possible. And there is much from our current performance to build on, with the UKCSI stating that we are currently the top water company, the most trusted utility, and have the highest net promoter score of all utilities.

Our plan is based on four outcomes that deliver great customer service, it is affordable for all, it includes a wide range of resilience measures, and it requires and embeds innovation. Our plan has been shaped by the communities we service, and this is reflected in “Bristol Water... Clearly” and in our performance commitments. Some of the most innovative features are not just in what we are targeting to achieve, but that we can measure and incentivise it. And the innovation is driven by how we work, essential given how stretching the incentives we are committed to delivering for the long-term are:

- Measuring water poverty, with social tariffs adapting as incomes change
- Our Biodiversity Index, which penalises habitat degradation on sites we own and incentivises improvements, building on the progress we have made since 2015.
- Tackling long-term supply resilience by protecting all population centres over 10,000 by 2030, in line with Defra resilience aspirations. This goes beyond the 25,000 sources of supply we have already delivered, to focus on network risk of interruptions greater than 24 hours.
- Our community stakeholder satisfaction with specific initiatives, which customers have supported as long as the transparency with our partners means we are held to account for their success. This is the core of an outcomes approach, where the trust of stakeholders and customers allows us to innovate in how we work with others, the strength of relationship supporting delivery rather than being linked to capital investment or only to total expenditure under our direct control.

The trust of customers is essential to achieving this balance, and we see bills that are in line with inflation looking ahead, after the reduction we propose in 2020. The main variation in bills appears to be from regulated incentives in delivering this plan (and the reversal in 2026 of penalties from 2015-20 delivery). We see transparency on our trade-offs as part of how we build on the high level of trust we already have, recognising that even though we have high recognition, there is little understanding of how the environment and community initiatives we propose link to maintaining water quality, which remains our key task. We have had to stretch our proposed incentives because we have a maintenance-driven plan, which relies on interlinked small investments and initiatives, but as a package of measures have a large long-term impact on the communities we serve. This has fundamentally driven our outcomes and performance commitments for 2020-25 and beyond.

4. Developing our outcomes

4.1. Overview

Outcomes are the general description of what the company is promising to deliver for its customers and wider stakeholders

Through extensive engagement and research, we have sought to understand the priorities of our stakeholders and customers and have used these, together with our knowledge of minimum legal and regulatory requirements, to develop our outcomes. Targeted research was undertaken to capture customer views on a draft set of outcomes, before feeding into the final set proposed. Review and challenge has been provided by our Executive Team, Company Board and Customer Challenge Group.

4.2. Reviewing our PR14 framework

In 2013 we published our PR14 Business Plan, setting out our priorities for 2015-20. This included the publication of our six aims and nineteen outcomes:

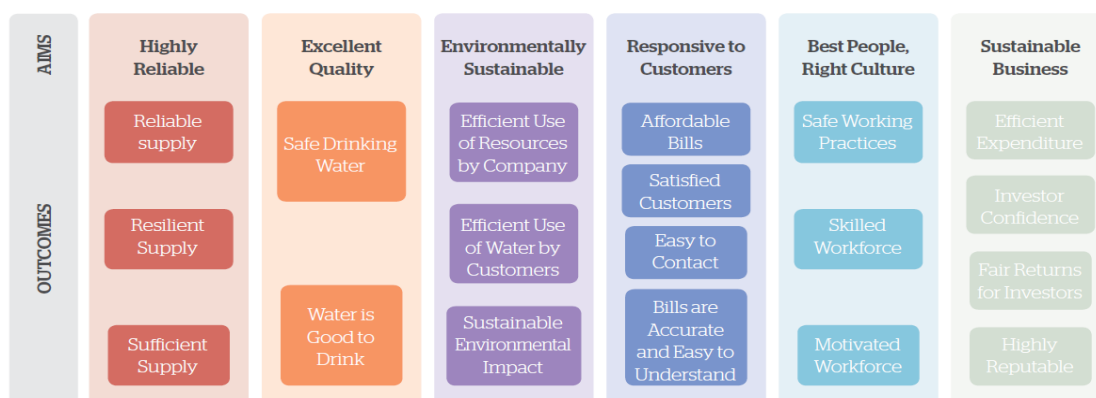


Figure 4-1 - PR14 Aims and Outcomes

These aims and outcomes were supported by our Vision Statement in 2012, which was:

“To meet our customers' expectations by providing an outstanding water service in a sustainable and affordable way.”

The outcomes were also driven by our PR14 customer research, our regulatory and statutory requirements, and the business needs of the Company. To ensure continuity between PR14 and PR19, it was deemed appropriate that this list be the foundation for our PR19 outcomes.

4.3. Initial Development

C3 - Delivering outcomes for customers

Using the PR14 aims and outcomes as the base, we undertook two activities in late 2016. The conclusions of these exercises are summarised below.

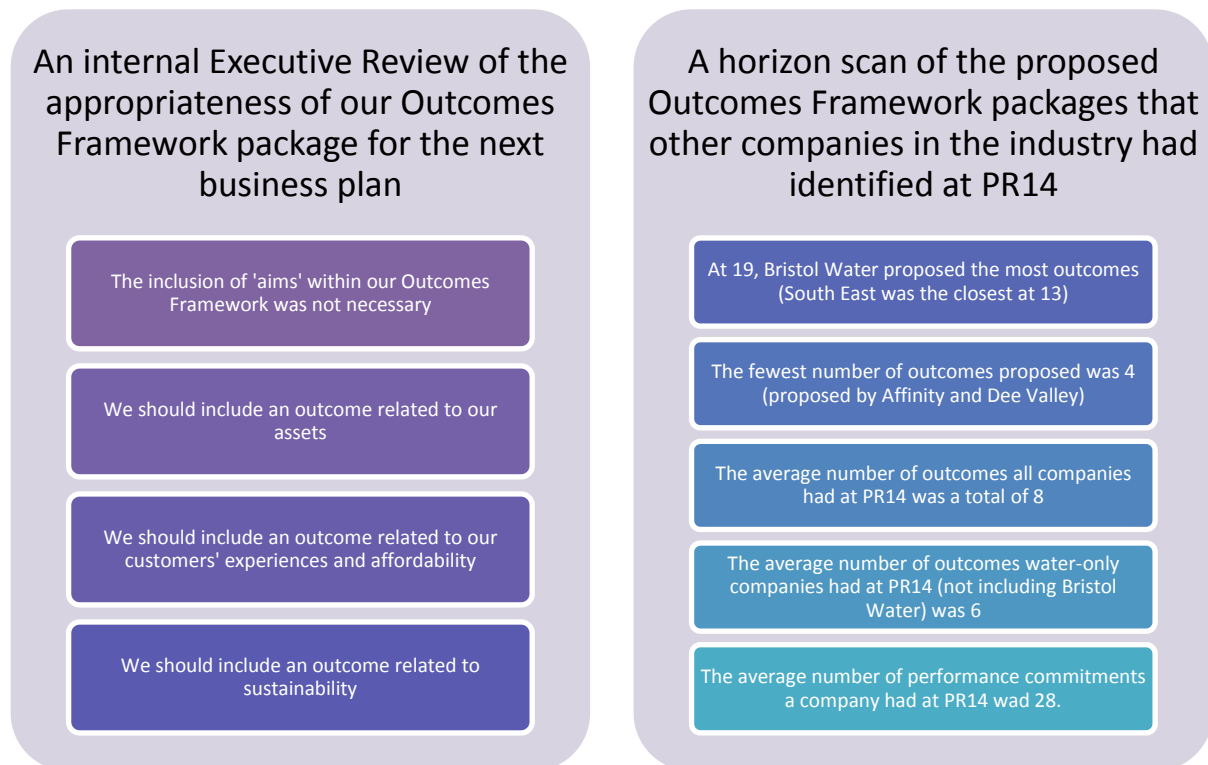


Figure 4-2 - Review of PR14 Outcomes

Following the activities noted above, we reviewed the appropriateness of the PR14 outcomes and concluded that these needed to reflect the following principles at PR19:

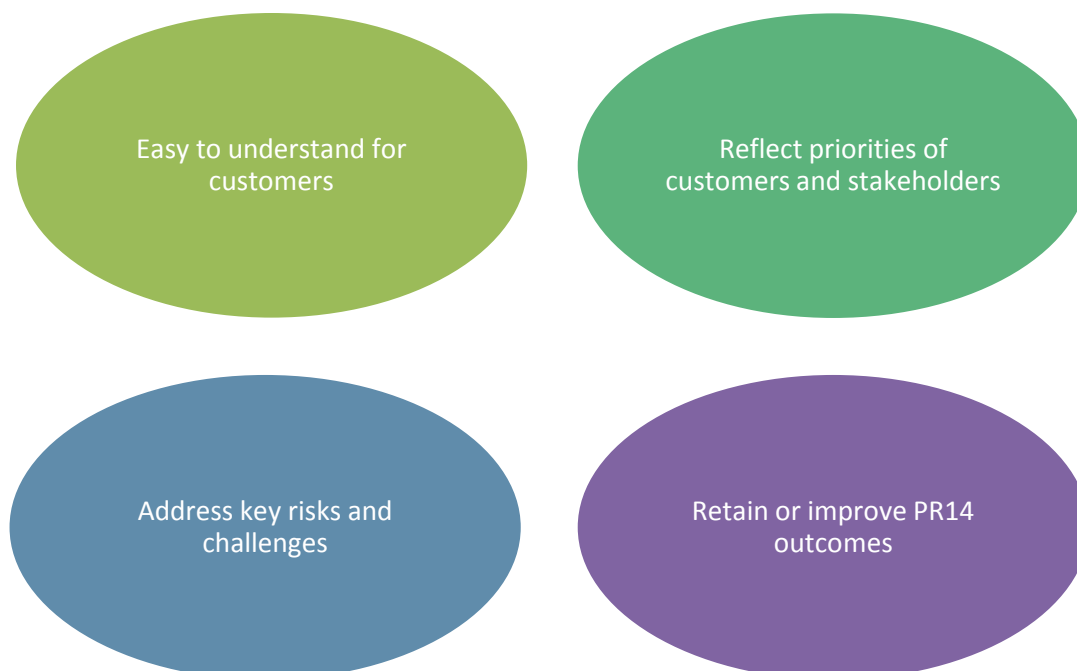


Figure 4-3 - PR19 Outcomes Principles

4.4. Initial customer views

Starting in 2016, we reviewed our PR14 customer research and began to talk to customers about their priorities and experience of our service, as set out in Chapter 3. Reviewing our annual survey, and our customer contact data, we found that customers consistently rate reliability of supply as an area where we perform the best, followed closely by aesthetic attributes (taste, smell and appearance) and ensuring adequate water pressure. These attributes are also top of the list of customers' priorities, which suggests they are key drivers of customer satisfaction. In contrast, we find that customers are less satisfied with our performance on leakage, affordability and responding to problems quickly, although these are still high priorities for over half our customers. Other factors like our contribution to the community, helping those who cannot pay their bills and our impact on the natural environment were less of a priority for customers at this stage. In focus groups with a range of customers, including those who had experienced interruptions and those on low incomes we found that beyond reliability and affordability customers had varied views on issues like reducing water use, metering and drought measures. Our first Customer Panel surveys, with around 1,000 customers, showed similar views.

Figure 4-4 below shows our customers' priorities and their perceptions of our performance, based on our 2017 annual survey.



Figure 4-4 - Customer priorities from 2017 annual survey

4.5. Initial Outcomes

By spring 2017 we had identified three outcomes to discuss with customers:

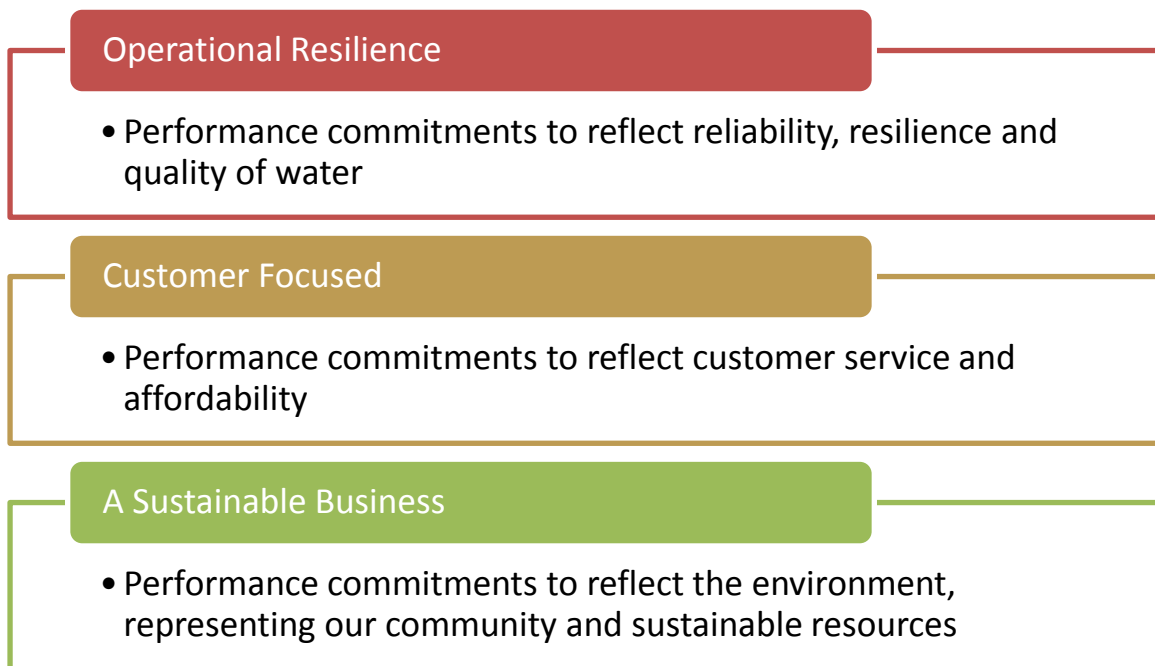


Figure 4-5 - Initial Outcomes

This initial list of outcomes was then reviewed at regular intervals over the next few months, taking into account further customer feedback.

4.6. Further customer views

In June 2017 we sought feedback on our initial outcomes. This consultation was undertaken in the form of an online survey completed by 863 customers.

- 89% of panel members agreed that the operational resilience outcome reflects what customers value, 2% disagreed. 74% of panel members were happy that the description of this outcome was easy to understand, 26% were not.
- 93% of panel members agreed that the customer focused outcome reflects what customers value, 1% disagreed. 93% of panel members were happy that the description of this outcome was easy to understand, 7% were not.
- 91% of panel members agreed that the sustainable business outcome reflects what customers value, 1% disagreed. 91% of panel members were happy that the description of this outcome was easy to understand, 9% were not.
- 91% did not think that anything had been missed from the list of outcomes. 9% thought that something was missing (of those who commented, education, road disruption, affordable bills, leaks and quality of water were mentioned as additional outcomes).

At the same time we began to carry out targeted research with customers to explore water resource options, the experiences of vulnerable customers and how customers value the services we provide through Willingness to Pay research. These findings continued to influence the development of our outcomes, as did discussions with our Challenge Panel. Customers told us that inclusion of outcomes on reliability and quality of water, customer service and our wider impact matched their expectations of us, but challenged us to be clearer about what our outcomes meant and what was distinctive about them.

4.7. Final Outcomes

Through the process of gathering feedback on our initial set of outcomes and the development of our long-term ambitions, by early 2018 we had identified four outcomes:

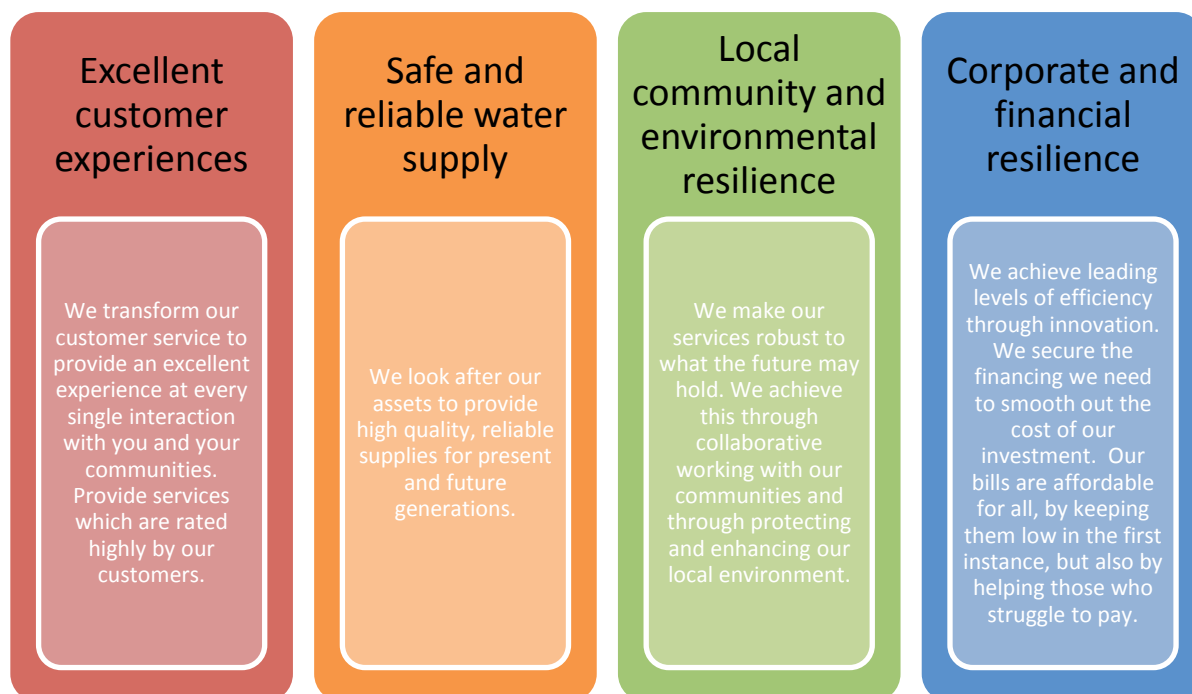


Figure 4-6 - Proposed Outcomes for PR19

These outcomes will set the long-term strategic direction of the company and were included within “Bristol Water... Clearly”. As a result of the significant amount of research and engagement leading to the publication of our outcomes, we believe that they are an appropriate reflection of the priorities of our customers and stakeholders.

4.7.1. How our plan outcomes deliver customer priorities

There is a clear line of sight between our Business Plan and our customers’ views, priorities and preferences. Our plan to deliver our customers’ priorities is based around four outcomes. The outcomes, and our actions for delivering them before 2025, are described below.

Outcome 1: Excellent customer experiences

Our customers have told us that they want a fast, easy and efficient response when they contact us, and that they want to be kept informed. They have also told us that our services should be inclusive, reflecting the differing needs of individuals in our communities and that we should support those customers who struggle to pay.

Our plan builds on the successful partnership we have with Wessex Water, through our joint venture billing company “Pelican”, to maintain a low retail cost to serve. Through changing the way we connect with our customers, via our operational staff, we will improve responsiveness and reduce cost. These changes are underpinned by system improvements

C3 - Delivering outcomes for customers

which provide a 'single view' of our customers as individuals - a move away from the view of properties or assets.

We already provide a range of extra care services for our customers whose circumstances mean that they require additional support or help to pay their bill. We plan to expand the reach of these services by trebling the number of customers on our Priority Services Register and offering social tariffs to *all* of those eligible (up to an additional 12,000 customers). We explain our plan for supporting vulnerable customers further in Section C2 – Addressing affordability and vulnerability.

We aim to build on our position as the top water company on the UK Customer Satisfaction Index, aspiring to become the top utility. Our plan also responds to the needs of our business customers and their retailers, as well as developers, by making the improvements they have told us they would like to see, including both service levels and lower costs.

Outcome 2: Safe and reliable water supply

Our customers have told us that water quality and reliability is important to them. Our plan reduces customer concerns about appearance and taste of water by 50%, and aims to improve on our drinking water Compliance Risk Index which is already one of the lowest in the industry.

Our continued investment for long-term operational resilience provides system flexibility and redundancy to respond to the impact of our most significant risks to the continuity of supply. We completed one of our largest engineering projects in 2017/18 which made our supply network resilient to system failures for communities with population of over 25,000. Our plan expands the scope and reach of our resilience schemes to protect population centres of over 10,000 from risk of single point failures. We have tested these proposals with our customers and they have told us that they agree with this ambition, while preferring it delivered over 2020-2030, rather than by 2025, to balance with affordability.

When things go wrong, our customers appreciate a rapid and personal response from us. During the recent major burst at Willsbridge and the precautionary boil water notice in Clevedon in January 2018, we demonstrated how customer trust and satisfaction can be retained by responding quickly and effectively to operational issues. We have reflected our recent experiences in our plan to improve our operational response and recovery further. This means that we will reduce total interruptions to water supplies by 85%.

Our plan uses an optimal combination of operational strategies and capital investment to improve resilience of our supply by preventative, as well as response and recovery, measures. This integrated approach builds on best practice in resilience-management. In contrast to our previous plans which relied on major enhancement investments, our wholesale plan is predominantly based on maintenance and operating cost interventions, increasing as a proportion of total expenditure from 55% to 75%.

Outcome 3: Local Community and Environmental Resilience

Our customers have told us that leakage remains at the forefront of their concerns. We agree - this is a key measure of the performance of the company, and is critical to our legitimacy in the eyes of our customers and stakeholders. We will deliver a 15% reduction in leakage through improving the productivity of current leakage detection and repair activities as well as using new technologies for detection and management of leakage. These include dynamic network control, real-time data collection and analysis, and innovative leak-detection techniques. In addition to reducing leakage, we will continue to help maintain the

C3 - Delivering outcomes for customers

short, medium and long-term balance of water demand and supply through reductions in demand for water by increasing the number of residential properties that are metered to 75%. These plans will more than offset the projections for population growth within our area. No new water resources will be required until at least 2045.

We will also build further operational resilience by looking to the market and our community partners to help our customers reduce water wastage. We will drive this water efficiency and behaviour change by working with other local energy and service providers in the “Resource West” partnership initiative. This regional collaboration will provide our customers with better and more integrated information on how to reduce water, energy, waste and household costs through choice on all their resource needs.

We have a long heritage, and strong legacy of providing clean and reliable water for the wellbeing of society. Today, we continue to make an important contribution to our vibrant local communities. Our contribution goes beyond providing an essential service; as a small local water company, we will work through our partnerships to provide our communities with free public access to drinking water, provide our customers improved access to our recreational facilities and create closer links with local schools and universities.

We will work in partnership with local communities to benefit customers and the environment. If we don't deliver to the satisfaction of the community and customers, our innovative “Bristol Water For All” approach will hold us to account.

Outcome 4: Corporate and financial resilience

Our corporate and financial resilience outcome underpins the delivery of our other three customer-facing outcomes; and together with operational and service resilience, they deliver ‘resilience in the round’.

Since the last price review, and the subsequent ‘Prescribed’ status of the company under Ofwat’s monitoring framework, we have substantially improved our corporate resilience and governance. Our assurance partners have confirmed the strength of our assurance plan. This resilience is embedded throughout our organisation by improving our employee engagement and customer excellence culture, and it is delivered through our connections with the communities we serve. We care greatly about the wellbeing of our employees, demonstrated (for example) by our zero tolerance for health and safety accidents and injuries at work. Since 2015, our journey has seen major changes in our organisation, its people and our processes. However, our employee readiness for future changes is essential to providing customer excellence and long-term resilience. Our Transformation Programme includes a further substantial increase to both the numbers and competencies of our employees.

Our financial resilience is founded on transparency and long-term viability. We have carried out extensive risk assessment, scenario planning and stress testing of our financial plan. We demonstrate that we are financially resilient for the long-term to a wide range of risks. This resilience is founded in our financial prudence, having gearing (currently 64%) close to Ofwat’s assumed level.

4.7.2. Alignment of Outcomes with Ofwat Priorities for PR19

It is also important that our proposed outcomes are aligned to Ofwat’s key themes for the price review, which are:

- Great Customer Service;

C3 - Delivering outcomes for customers

- Long-term resilience in the round;
- Affordable Bills; and
- Innovation and new ways of working.

We think that we have matched these priorities with our chosen outcomes and performance measures.

We will aim to deliver great customer service through provision of a safe and reliable supply of water, with measures and incentives designed to provide stretching performance. Through the C-MeX and D-MeX incentives we will capture customers' views on the service they receive, as well as our own value for money survey and tracking of the satisfaction of vulnerable customers in particular.

Resilience is addressed in terms of supply resilience through our asset health and supply interruptions measures, and in particular through our ambition to reduce the dependency on a single asset for 543k customers. But we have also considered resilience more widely, through our impact on the environment and work with our communities and local partners. Our Corporate financial resilience will also provide the transparency and confidence to stakeholders that our business is being well-run and adopting an appropriate risk appetite.

Our plan delivers a reduction in bill levels of 4.5% in 2020/21 and means that bills will still be lower in 2025 than they were in 2015, after inflation. This will help demonstrate the affordability of our bills to all our customers, and the value for money and C-MeX surveys will assess that. We will continue to use our measure of water poverty to track our bills against customers' disposable income, and use our social tariff assistance programmes to keep our customers out of water poverty. Our local community measure will also include the work we do with Wessex Water and other utilities to support our most vulnerable customers, and we will specifically track their satisfaction with our services.

Innovation is a key driver of our Business Plan and in the transformation of Bristol Water. Our plan sets challenging targets for both expenditure and performance levels, representing significant improvements from current levels. These will only be achieved through finding new ways of working, embracing new technologies and constantly seeking to do things better and more efficiently.

A summary of how innovations will contribute to our future plans is presented in the table below.

[Table 4-1 –How innovation will contribute to our future plans](#)

C3 - Delivering outcomes for customers

Innovation			
Customer priorities	Customer promises	Heat map - how innovation has contributed to what we have achieved so far	Heat map - how innovation will contribute to our future plans
We give you a bill which you can afford	Lower bills for customers - affordable for all	We have reduced costs across the business, leading to lower customer bills. For example, we are reducing our energy bills by optimising our pumping activity and generating our own energy from low cost sources and we are reducing the costs of our office activities by deploying robotic process automation.	Our plan targets are stretching and require innovation to deliver them with the efficiencies we are proposing. We have built innovation into our transformation programme and will seek cost reductions by innovatively improving the effectiveness of our processes, for example pursuing minimal dig solutions on our network.
You get the best possible experience every time you need us	Achieving excellence customer	We developed the award winning water bar to engage customers around the value of water and the importance of our environment, encouraging them to reduce plastic waste.	We continue to innovate our digital offering to meet the evolving expectations of customers across the different communication channels. Using API integration of data across our supply chain will help us provide a single view of the customer
	Inclusive services that meets customers' individual needs, especially when they are most vulnerable. Aiming for zero water poverty	We work in close collaboration with our customers. Our 'Beat the Bill' campaign is a way for households to see if they could save money on their bill by using a meter.	We plan to expand our social tariff offering it to those who receive a bill via a third party rather than directly from us, such as those in supported accommodation. We will also develop a water efficiency choice platform and include vulnerability monitoring within our "smart city Bristol" contributions, through Resource West.
Saving water before developing new supplies	15% leakage reduction	We have deployed Pipe Minder technology to drive leakage down. It is the next generation of automated critical trunk main monitoring solution for leak detection and risk mitigation.	We plan to improve leakage identification through solutions such as Machine Learning enabled leakage identification. We will also pursue technologies such as advances in satellite imagery and drone technology to identify leaks.

C3 - Delivering outcomes for customers

Innovation			
Customer priorities	Customer promises	Heat map - how innovation has contributed to what we have achieved so far	Heat map - how innovation will contribute to our future plans
	Metering and water efficiency promotion and support	<p>We are using innovative, quick-to-deploy metering solutions to meet our ambitious AMP6 metering targets.</p> <p>We have conducted the largest study in Europe, in partnership with the University of West England of customers' behaviours in water use in order to guide our activities to promote efficient use of water.</p>	We aim to take a community leadership role for broader issues of resource efficiency and through our Resource West group, a partnership of local stakeholders such as local government, universities, other water companies and energy organisations. The aim in order to bring together the shared knowledge and capacity of these organisations to deliver greater collective gains for local communities in issues of water efficiency, waste plastic reduction, energy efficiency and local resilience.
	Accountable to the community partners we work with for the wellbeing of society – 'Bristol Water For All'	We engage with our local community through activities such as STEM (science, technology, education and mathematics), Refill campaigns, water fountains, Water Bar and Spawn to be Wild.	We will continue to participate in community activities through initiatives such as our business incubator: The Workshop, which partners with local public bodies such as West of England Growth Hub and Business West to promote growth in the local economy
Trust beyond water – helping you to improve your communities and the local environment	Building biodiversity and protecting our environment	<p>We developed a unique approach to managing biodiversity which we have rolled out across our major construction programs such as the Southern Resilience Water main.</p> <p>We were an early adopter of the Refill campaign helping to promote the removal of plastic waste from our environment</p>	We continue to deploy and promote the Biodiversity Index as well as future community based environmental programs (such as Spawn to be wild). Through extending our catchment management schemes we will improve water quality and protect the environment.

C3 - Delivering outcomes for customers

Innovation			
Customer priorities	Customer promises	Heat map - how innovation has contributed to what we have achieved so far	Heat map - how innovation will contribute to our future plans
Keeping top quality water flowing to your tap	Improving water quality (including contacts for discolouration and taste)	<p>We are exploring emerging technologies such as bio-bullets to control Zebra Mussels at our treatment works.</p> <p>We are working with Sheffield University on a 2 year project called PODDS to explore prediction and prevention of discolouration in distribution systems</p>	We will continue to pursue emerging technologies such as calm DMA and real time bacteriological monitoring. We will also use better communication tools to keep our customers informed of changes in the source of water which may affect its taste
	Reducing supply interruptions to 1.8 minutes per customer (our forecast of industry top quartile)	We have undertaken a collaborative study with Imperial College London and Cla-Val to understand how we can operate our DMAs dynamically to calm the network and improve the life of our assets	<p>We continue to apply continuous improvement to our incident response activities to ensure that issues are resolved as rapidly as feasible with the latest technology and ways of working.</p> <p>Reversing valves and injection tankering – applying innovations and learning from other companies including Welsh Water and United Utilities in 2015-20 features in this plan, and allows us to cut supply interruptions by 85%.</p>
	Resilience – boosting protection for population centres of more than 10,000	Our single supply failure ODI during 2015-20 is in itself innovative. Completion of the Southern Resilience Scheme has allowed us to make more use of our varied water resources which reduces the risk of supply interruptions and drought measures being required.	We will continue to utilise sophisticated optimisation of our assets to enhance their life by deploying more instrumentations and interrogating the improved data sets. We anticipate a change in the skillsets of our staff as we build capability in areas such as data science

High contribution

Medium contribution

Low contribution

5. Developing our performance commitments

Performance Commitments are the levels of service which they company commit itself to delivering by 2025. These should reflect customers priorities as well as views of regulators and stakeholders. We will regularly publish our performance against these commitments.

5.1. Overview

Performance commitments have been developed for three out of the four outcomes for inclusion within our PR19 Business Plan. Delivery of performance against the fourth outcome, ‘corporate and financial resilience’, will be evidenced through our financial reporting and transparent statements made by our Board, such as the ‘Trust Beyond Water’ statement published alongside our 2017/18 Annual Performance Report, as well as the contribution that our corporate and financial resilience makes to delivery of the other performance commitments.

The performance commitments we intend to use in our plan were defined in the early submission to Ofwat on 3rd May 2018.

In this chapter we describe how we developed the performance commitments that will demonstrate delivery of the outcomes of excellent customer experiences, safe and reliable supply and local community and environmental resilience.

5.2. Reviewing our PR14 framework

Similarly to our initial review of our outcomes, we used our PR14 performance commitments as the foundation for creating our long-list of performance commitments.

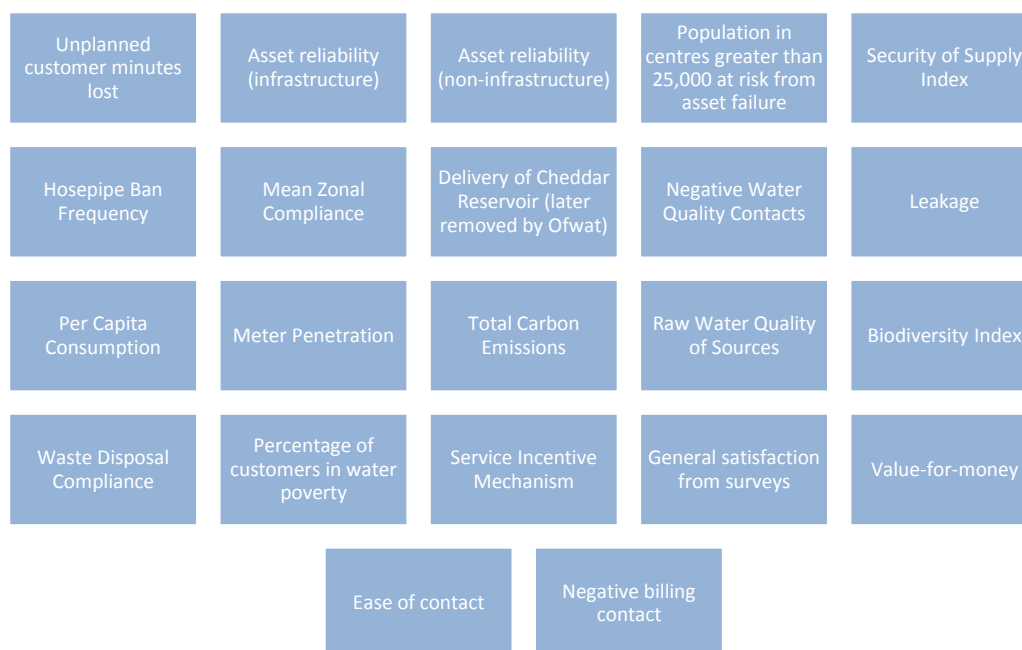


Figure 5-1 – PR14 Performance Commitments

5.3. Ofwat’s Draft Methodology

Ofwat published its PR19 draft methodology consultation in June 2017, which introduced a number of new challenges that had to be considered, but in particular Ofwat prescribed a number of the performance commitments it expected companies to adopt. Ofwat set out a large number of common measures (fourteen) across companies, nine of which were relevant for water only companies (shown in blue):

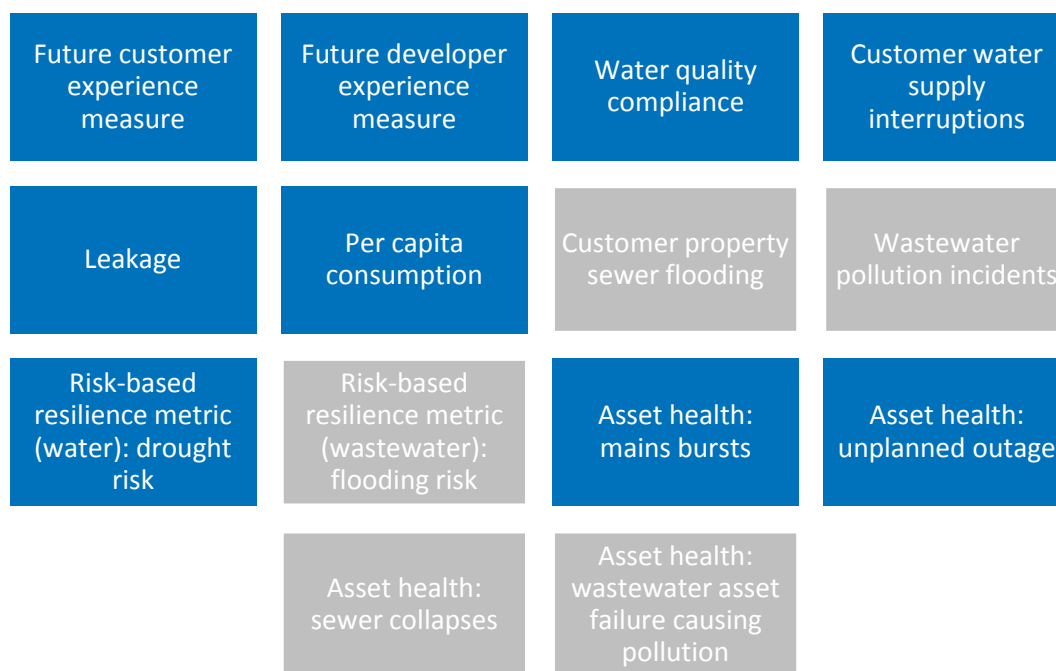


Figure 5-2 – PR19 Common Measures

In addition to the common measures, Ofwat set an expectation that companies must cover a number of areas with their bespoke commitments:

Area	Rationale
Asset health ⁷	Companies need to ensure that assets are being maintained appropriately for the benefit of current and future generations. Metrics for asset health bespoke performance commitments must <ul style="list-style-type: none"> a) Include one that has been selected from Ofwat’s long list of asset health metrics with standard definitions enabling their customers to compare performance and challenge their company on those selected; and b) include at least one other performance commitment outside of the long list of measures
Vulnerability	Ofwat want companies to provide sensitive, well-designed and flexible support to customers in situations of vulnerability. They have suggested companies choose from a standard range of metrics
Environment	Companies’ engagement with customers in PR14 has shown that customers value improvements to the environment.
Resilience	Whilst Ofwat has proposed two common performance commitments for resilience (one relating to a water only company), the regulator has stated that these do not fully cover resilience. Ofwat therefore expects companies to reflect the resilience issues that are most relevant to their region and customers in their bespoke performance commitments

⁷ Ofwat proposed to “partially standardise companies’ asset health performance commitments”, rather than include this as a specific area our bespoke performance commitments must cover

C3 - Delivering outcomes for customers

Area	Rationale
AIM	AIM intends to encourage water companies to reduce the environmental impact of abstracting water at environmentally sensitive sites during defined periods of low surface water flows.

Table 5-1 –Required Areas for Performance Commitments

Ofwat also stated that a company would need to justify why it does not intend to continue with any of our PR14 performance commitments.

5.4. Bristol Water Staff Views

Recognising that most (88%) of our staff are also our customers and have an informed view about their water service, we sought their expertise and feedback as to which areas we should prioritise. Their suggested priorities for performance commitments are summarised below:

Measures on road work interruptions and notifying customers

Protection from flooding

Retail market performance

Proportion of customers eligible for social tariffs

A measure on customer debt

The number of hazards addressed

Lake-side visitor experience

Energy efficiency

Figure 5-3 - Priorities for Performance Commitment

5.5. Initial Customer Views

Overall, the top priorities of our customers have remained largely unchanged from PR14, with reliability, water quality, and affordability consistently prominent across most of the research. Valuation data demonstrates an overall slight decrease in customers' willingness to pay since PR14, which, when combined with qualitative insights about customers' expectations for their supply, suggest that they want Bristol Water to do more, for less.

Our customer research focused on a number of themes, which covered both customer priorities and areas Ofwat had identified for inclusion. In this chapter we present a brief overview, with more detail against the relevant performance commitments in Chapters 7, 8 and 9 of this document.

Water quality and reliability of supply

- Water quality is the top priority for our customers and they are happy to pay for demonstrable improvements in taste and appearance.
- Reliability of supply is another high priority, although we find that customers are understanding of one-off events and often focused more on how we could improve our response to them.
- When we started to talk to customers about investment water quality and reliability were areas they felt most comfortable investing in.

Vulnerability and affordability

- Affordable bills are a high priority for our customers, and we know that some customers struggle with their bills.
- When we asked customers about our support for vulnerable customers, including the financially vulnerable, we find that the majority are supportive of our efforts.
- When we asked vulnerable customers about their experiences with us they were generally positive and keen for us to make more people aware of the options open to them.
- We also asked customers about how we should finance our service, and they told us that they were keen for bills to stay low and steady, that borrowing was favoured only when it helped keep bills low, and that we should aim to pay off investment in assets during their lifetime, not storing up costs for future generations.
- We also explored how the bill level affects customers preferences for investment, and found that a lower bill overall does make customers more comfortable investing in service improvements, particularly for those in difficult financial circumstances.

Resilience and the long term

- Resilience is not a topic that customers immediately raise as a priority when we ask them about the role of the water company and so we carried out targeted research that gave them time to explore the issues with Bristol Water staff before giving their views.
- When we talk to customers about securing adequate supplies of water in the Bristol area in the long term they tell us that we should prioritise reducing demand before increasing supply, which they see as having greater impacts and costs. Leakage and water efficiency are the key mechanisms customers want us to use to reduce demand.
- Our customers have more mixed views on metering with some customers strongly in favour and others concerned about fairness and the effects on those already struggling with bills. When we ask customers about drought risk they tell us that they don't see it as a concern for the Bristol Water area, having rarely experienced it. They tell us they are happy with the current level of risk.

The natural environment and our role in the community

- While some of our customers know about our environmental activities through visits to the lakes, or other programmes, like resilience it is not top of priority lists for many customers. However for some customers, particularly the most engaged like our customer forum, and many stakeholders, the natural environment is an area where they want Bristol Water to show leadership.
- We also know from our valuation studies that customers are willing to pay for environmental improvements, but we need to be clear about what's proposed to get a precise valuation.
- Our role in the wider community is a priority for some of our stakeholders, including those with an interest in the environment. We find that customers don't tend to prioritise community impact over more concrete services like water quality, but they do see it as a positive aspect of Bristol Water.

Low pressure and lead pipes

- Low pressure comes up fairly often in discussions with customers and is a source of some complaints.
- It is understandably more of a priority for those affected than for customers more generally, and it's not seen as an area for high investment.
- When we asked customers about lead pipes they were keen that we identify and mitigate health impacts but were not aware of it as a widespread cause for concern.

Customer experience

- We were pleased to find that many customers reported good experiences of our customer service, reflecting positive results in the national customer service benchmarking survey we commissioned. Customers did identify areas for improvement, particularly around speed of resolution and keeping customers informed.
- Traffic disruption was an area that caused some dissatisfaction, although we had mixed feedback from customers about whether it was something we should invest to address.

5.6. Initial Performance Commitments

Following these activities, we reviewed our initial list of performance commitments against Ofwat's methodology and the list of customer priorities; by July 2017 we had identified the following 23 performance commitments.

Performance commitment	Source	Additional information
Bursts	PR14 performance commitment and PR19 draft methodology	Previously a sub-measure of Asset reliability (infrastructure), as the draft methodology stipulated that performance commitments that included sub-indicators must be disaggregated to improve transparency
Properties at risk of receiving low pressure	PR14 performance commitment	Previously a sub-measure of Asset reliability (infrastructure), as the draft methodology stipulated that performance commitments that included sub-indicators must be disaggregated to improve transparency

C3 - Delivering outcomes for customers

Performance commitment	Source	Additional information
Turbidity at water treatment works	PR14 performance commitment	Previously a sub-measure of Asset reliability (non-infrastructure), as the draft methodology stipulated that performance commitments that included sub-indicators must be disaggregated to improve transparency
Unplanned maintenance events	PR14 performance commitment	Previously a sub-measure of Asset reliability (non-infrastructure), as the draft methodology stipulated that performance commitments that included sub-indicators must be disaggregated to improve transparency
Population in centres greater than 25,000 at risk from asset failure	PR14 performance commitment	
Negative Water Quality Contacts	PR14 performance commitment	
Leakage	PR14 performance commitment and PR19 draft methodology	Ofwat proposed that this would become a common performance commitment
Per Capita Consumption	PR14 performance commitment and PR19 draft methodology	Ofwat proposed that this would become a common performance commitment
Meter Penetration	PR14 performance commitment	
Raw Water Quality of Sources	PR14 performance commitment	
Biodiversity Index	PR14 performance commitment	
Waste Disposal Compliance	PR14 performance commitment	
Percentage of customers in water poverty	PR14 performance commitment	
Value for money	PR14 performance commitment	
Future customer experience measure	PR19 draft methodology	Ofwat proposed that this would become a common performance commitment
Future developer experience measure	PR19 draft methodology	Ofwat proposed that this would become a common performance commitment
Water quality compliance	PR19 draft methodology	Ofwat proposed that this would become a common performance commitment
Customer water supply interruptions	PR19 draft methodology	Ofwat proposed that this would become a common performance commitment

Performance commitment	Source	Additional information
Risk-based resilience metric (water): drought risk	PR19 methodology draft	Ofwat proposed that this would become a common performance commitment
Asset health: mains bursts	PR19 methodology draft	Ofwat proposed that this would become a common performance commitment
Asset health: unplanned outage	PR19 methodology draft	Ofwat proposed that this would become a common performance commitment
Lake-side visitor experience	Staff feedback	
Energy efficiency	Staff feedback	

Table 5-2 – Initial Performance Commitments

Reasons for excluding performance commitments in our first draft are provided in Appendix 1.

5.7. Ofwat’s Final Methodology

Following publication of its final methodology statement for the upcoming PR19 price review, Ofwat adapted its requirements to provide even more prescription on some of the measures companies should use, to increase standardisation with the aim of improving comparability. In summary, we had to take into account the following...

- 1) Nine common performance commitments that all water companies must adopt:

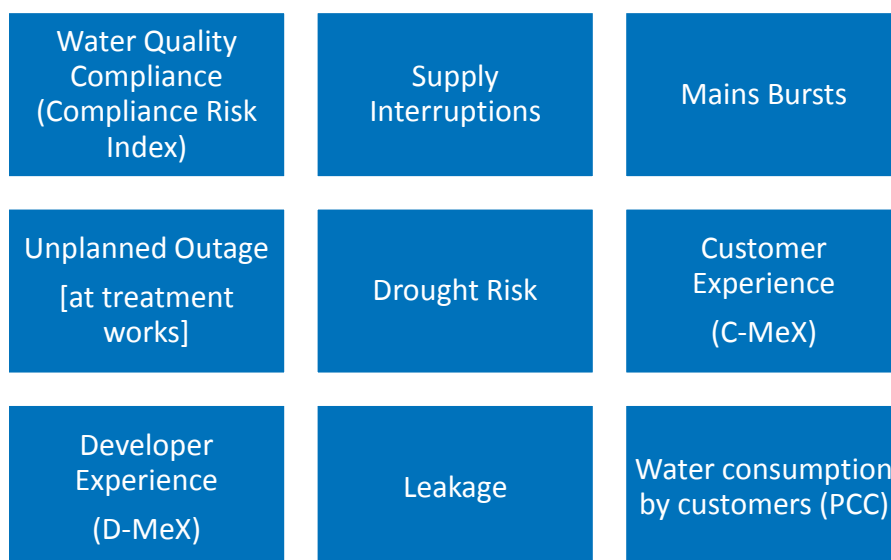


Figure 5-4 - Common performance commitments applicable to water only companies

C3 - Delivering outcomes for customers

- 2) Five areas where companies must propose a commitment, but have some choice over which measure to use. Ofwat also set an expectation that we propose a performance commitment on Gap Sites⁸ and Voids⁹, although this is not mandatory.



Figure 5-5 - Areas where a commitment is required

- 3) Existing measures from the previous price review should be retained, unless we could provide a justifiable reason to discontinue them. Our review of our PR14 measures is explained above.
- 4) That any new performance commitments may be proposed.

We included consideration of the requirements of the methodology as we developed our final PR19 performance commitments.

⁸ A gap site (sometimes referred to as a 'missing property') is a property where water services are being consumed, but the property is not on our system and is therefore not billed

⁹ Voids are properties classed by the company as being vacant

5.8. Final Performance Commitments

Through the process of gathering feedback on our initial performance commitments and the development of our long-term ambitions, we have identified twenty-six performance commitments.

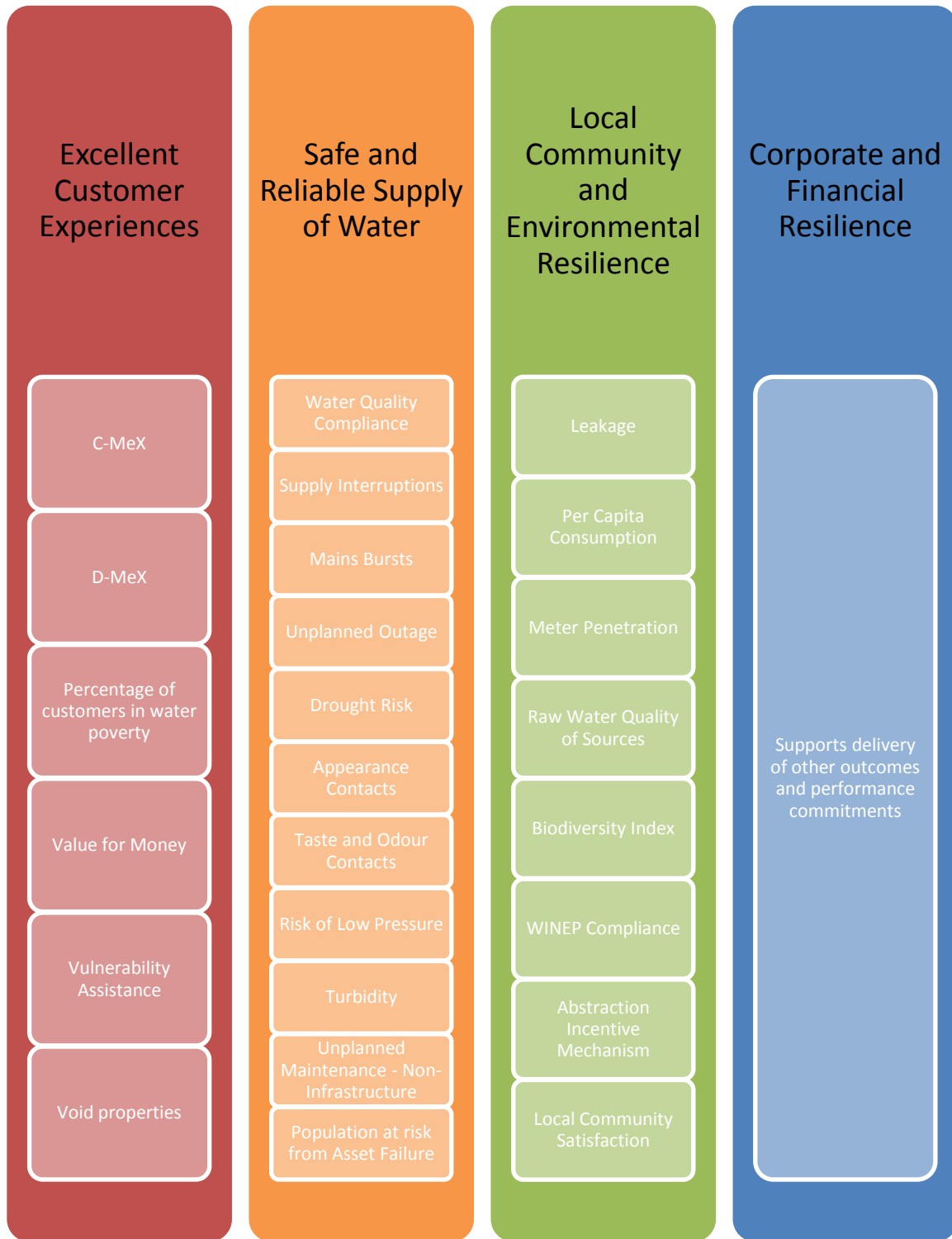


Figure 5-6 - Bristol Water PR19 Performance Commitments

We set out below our reason for including each performance commitment:

C3 - Delivering outcomes for customers

Performance commitment	Source	Additional information
Water quality compliance	PR19 final methodology, New measure	Common PC
Supply interruptions	PR19 final methodology, Alignment of industry standard measure	Common PC
Mains bursts	PR19 final methodology, PR14 PC	Common PC
Unplanned Outage	PR19 final methodology, New	Common PC
Risk of severe restrictions in a drought	PR19 final methodology, New	Common PC
Customer contacts about water quality – appearance	PR19 final methodology, PR14 PC	Disaggregated from Negative Water Quality Contacts PC Included in Ofwat’s long-list of asset health PCs
Customer contacts about water quality – taste and smell	PR19 final methodology, PR14 PC	Disaggregated from Negative Water Quality Contacts PC Included in Ofwat’s long-list of asset health PCs
Properties at risk of receiving low pressure	PR19 final methodology, PR14 PC	Disaggregated from Asset reliability (infrastructure) Included in Ofwat’s long-list of asset health PCs
Turbidity performance at treatment works	PR14 PC	Disaggregated from Asset reliability (non-infrastructure)
Unplanned maintenance – non- infrastructure	PR19 final methodology, PR14 PC	Disaggregated from Asset reliability (non-infrastructure) Included in Ofwat’s long-list of asset health PCs
Population at risk from asset failure	PR19 final methodology, PR14 PC	Mandatory requirement for at least one ‘resilience’ PC
Customer measure of experience (C-MeX)	PR19 final methodology, New	Common PC
Developer services measure of experience (D-MeX)	PR19 final methodology, New	Common PC
Percentage of customers in water poverty	PR14 PC	
Value for money	PR14 PC	
Percentage of satisfied vulnerable customers	PR19 final methodology, New	Mandatory requirement for at least one ‘customer vulnerability’ PC
Void properties	PR19 final methodology, New	Ofwat expectation that this be included
Leakage	PR19 final methodology, PR14 PC	Common PC
Per capita consumption (PCC)	PR19 final methodology, PR14 PC	Common PC
Meter penetration	PR19 final methodology, PR14 PC	Mandatory requirement for at least one ‘environmental’ PC
Raw Water Quality of Sources	PR14 PC	New definition from PR14
Biodiversity Index	PR14 PC	
Waste Disposal Compliance	PR14 PC	

C3 - Delivering outcomes for customers

Performance commitment	Source	Additional information
WINEP Compliance	New	Environmental Measure
Local Community Satisfaction	New, bespoke	
Abstraction Incentive Mechanism	PR19 final methodology	Mandatory requirement for at least one 'AIM' PC. This measure awaits confirmation from local area Environment Agency.

Table 5-3 – PR19 Performance Commitments

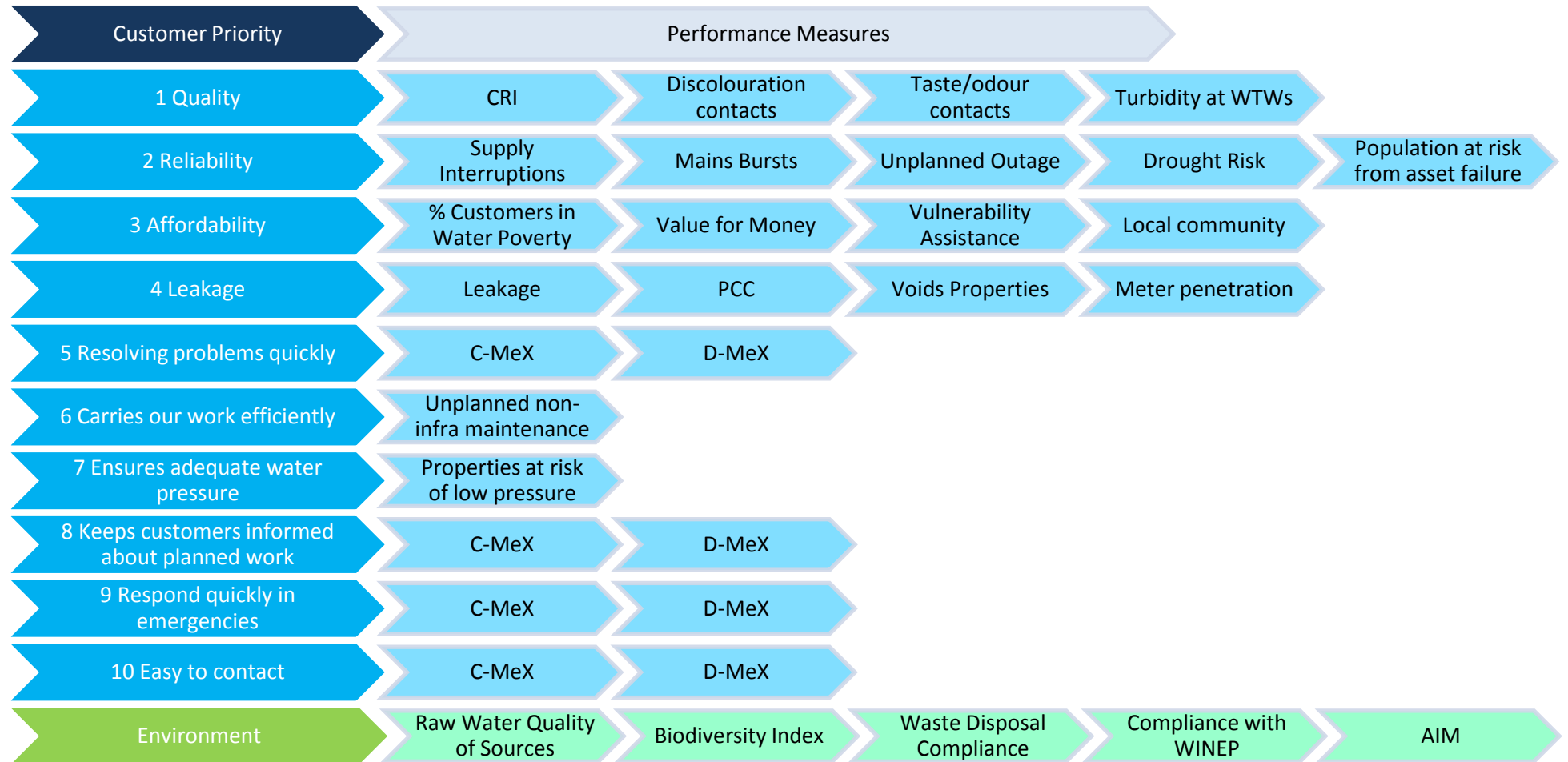
5.9. Mapping Performance Commitments to Customer Priorities

As above, our customer engagement indicated that leakage also remains a high priority for customers. In contrast, drought measures are a low priority for customers, probably due to the lack of experience of drought, and the low risk of drought in the Bristol area. In terms of water resource options, customers have expressed a strong preference towards demand-reduction measures such as leakage, metering, and water efficiency efforts over investment in developing new supply options. Customer service is valued, but less so than reliability, and customers do want us to deliver beyond our core services as long as we are clear about the costs and benefits.

Figure 5-77 shows how the performance commitments we have developed map against our customers top ten priorities, as measured in our annual surveys, whilst also recognising the importance of including environmental measures.

C3 - Delivering outcomes for customers

Figure 5-77 - Mapping Customer Priorities to Performance Measures



C3 - Delivering outcomes for customers

In App1 we have provided an assessment of the relative priority or importance of each of our proposed performance commitments. For this assessment we have used the acceptability testing on our final plan carried out by ICS Consulting, which revealed the percentage of customers agreeing with our proposed plan for twelve of our performance commitments. Where performance commitments were not included within that research, we have used the percentage of customers who agreed with the suggested plan for that commitment from our acceptability testing on our draft Business Plan. For the five commitments which were not included in either piece of acceptability testing we have provided the view that these are of low priority to customers, based on other discussions through forum and focus group events. The exception is the Developers measure of experience (D-MeX) which whilst a low priority for residential customers is naturally a very high priority for developers.

Table 5-4 – Customer Priority of Performance Commitments

PC name	DBP research - Customer preference for preferred investment package	ICS Acceptability - % Agree with proposed change	Customer Priority shown in App1
Water quality compliance	46%	87%	87%
Supply Interruptions	33%	67%	67%
Mains Bursts	51%		51%
Unplanned Outage	51%		51%
Risk of severe restrictions in a drought			Low
Customer contacts about water quality – appearance	54%	72%	72%
Customer contacts about water quality – taste and smell	72%	68%	68%
Properties at risk of receiving low pressure	51%		51%
Turbidity performance at treatment works	51%		51%
Unplanned maintenance – non-infrastructure	51%		51%
Population at Risk from Asset Failure	47%	75%	75%
Customer measure of experience (C-MeX)	60%	68%	68%
Developer services measure of experience (D-MeX)	Very high for developers		
Percentage of customers in water poverty	64%		64%
Value for money	66%	66%	66%
Percentage of satisfied vulnerable customers	64%	77%	77%
Void properties			Low
Leakage	56%	83%	83%
Per Capita Consumption (PCC)	48%	71%	71%
Meter penetration	56%		56%
Raw Water Quality of Sources	60%		60%
Biodiversity Index	60%	73%	73%
Waste disposal compliance			Low
WINEP Compliance	60%		60%
Local community satisfaction	44%	75%	75%
Abstraction Incentive Mechanism (AIM)			Low

Priority key:

>70%	60-70%	50-59%	Low
------	--------	--------	-----

A decision framework for ensuring our proposed performance commitments align to our proposed outcomes is included in Appendix 2.

5.10. Our Early Submission to Ofwat and updates to the Performance Commitment Definitions

We were required by Ofwat to submit bespoke performance commitment definitions and an initial view on our ODIs in May 2018. The full list of amended bespoke definitions can be found in Appendix 3 (the definitions for the common metrics were not required as part of this submission). Based on Ofwat feedback, we have changed our water quality metrics for appearance and taste and odour to be per 1,000 population rather than per 10,000 population. We show comparatives in this document per 10,000 as that measure is used on the discoverwater.co.uk website. We have also provided further information on the following performance commitments:

- the value for money survey methodology;
- the measurement for meter penetration and definition of household, non-household, voids and multiple properties served by a single meter;
- the numeric calculation for raw water quality of sources;
- the measurement of the Biodiversity Index score; and
- the delivery of investigations that will be measured and reported on for WINEP compliance.

In addition, we have also amended our submitted definition on the percentage of customers in water poverty performance commitment, to ensure that it more closely aligns to the definition we have been reporting on in AMP6.

Finally, two performance commitments, 'void properties' and 'local community satisfaction', were still under development at the time of the early submission. The finalised definitions for both these performance commitments are included in Appendix 3.

Table 5-5 – below summarises the changes made since the early submission.

Table 5-5 – Changes made to Performance Commitments since early submission

Performance commitment	Ofwat feedback	Changes since early submission
Water quality compliance	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Supply interruptions	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Mains bursts	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Unplanned Outage	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Risk of severe restrictions in a drought	No feedback provided as this is a common performance commitment.	No change made
Customer	Ofwat recommended that we	Our original submission adopted the

C3 - Delivering outcomes for customers

Performance commitment	Ofwat feedback	Changes since early submission
contacts about water quality – appearance	consider reporting our performance in line with the DWI definitions, per 1,000 population, to two decimal places: http://www.dwi.gov.uk/stakeholders/information-letters/2006/01_2006.pdf	definition used on the Discover Water website, which measured the number of contacts per 10,000 people. We have amended our definition to reflect Ofwat’s recommendation.
Customer contacts about water quality – taste and smell	Ofwat recommended that we consider reporting our performance in line with the DWI definitions, per 1,000 population, to two decimal places: http://www.dwi.gov.uk/stakeholders/information-letters/2006/01_2006.pdf	Our original submission adopted the definition used on the Discover Water website, which measured the number of contacts per 10,000 people. We have amended our definition to reflect Ofwat’s recommendation.
Properties at risk of receiving low pressure	No feedback provided.	No change made
Turbidity performance at treatment works	No feedback provided.	No change made
Unplanned maintenance – non-infrastructure	No feedback provided.	No change made
Population at risk from asset failure	No feedback provided.	Although no feedback was provided we have clarified that the population figures used to determine the targets have been fixed from the time they were compiled
Customer measure of experience (C-MeX)	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Developer services measure of experience (D-MeX)	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Percentage of customers in water poverty	No feedback provided.	Although no feedback was provided, we have included additional information about how this performance commitment is reported as net water poverty (after taking into account the support we provide via our Assist social tariff) after a gross water poverty figure has been determined by a population analytics company, using our water poverty definition. This is in line with our current definition
Value for money	Ofwat recommended that further information be provided on the survey methodology planned, as no detail was provided beyond the fact that satisfaction from a random sample of all domestic (household) customers would be captured from an annual survey.	Information on the survey methodology has been expanded.
Percentage of satisfied vulnerable	No feedback provided.	No change made

C3 - Delivering outcomes for customers

Performance commitment	Ofwat feedback	Changes since early submission
customers		
Void properties	Ofwat noted that this performance commitment was incomplete and was still in development at the time of submission.	In our submission we noted that we were investigating whether this performance commitment could be set in reference to local authority information on vacant properties. We noted that this may change the definition of the performance commitment, or may be a dynamic reference to how any incentives would be set. We can confirm that our definition has not changed from the information we submitted as part of the early submission (this is still aligned to the definition of void properties used in Ofwat's Annual Performance Report guidance). We have however set our targets using comparative information on void levels.
Leakage	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Per capita consumption (PCC)	No feedback provided as this is a common performance commitment.	As this is a common performance commitment it was not included in our early submission bespoke proforma.
Meter penetration	Ofwat recommended that we provide further definitions on household, non-household, voids and multiple properties served by a single meter, as well on the measurement definition, annual (cumulative – annual assessment based on cumulative position).	Information on the terms have been added to the definition and the measurement definition has been clarified.
Raw water quality of sources	Ofwat recommended we provide further explanation on our numeric calculation and why it was an improvement on the text performance reporting.	The definition has been substantially amended since the early submission, to take into account Ofwat's feedback but also the feedback from our CCG; although this performance commitment has the same name as our AMP6 performance commitment, our proposal is a revision.
Biodiversity Index	Ofwat recommended we provide further details on how the overall Biodiversity Index score will be measured and verified on an annual basis, as well as further details on how targets will be measured, assessed and assured annually.	The definition has been substantially amended since the early submission, to take into account Ofwat's feedback but also the feedback from our CCG.
Waste disposal compliance	No feedback provided.	No change made
Water industry national environment programme (WINEP) compliance	Ofwat recommended we provide further information regarding how the delivery of investigations will be measured and reported, including whether this will include part delivery and how weightings will be used.	The definition has been substantially amended since the early submission, to take into account Ofwat's feedback but also the feedback from the Environment Agency. This specifically includes all individual WINEP lines as we originally intended, rather than the 8 types of schemes originally worded

C3 - Delivering outcomes for customers

Performance commitment	Ofwat feedback	Changes since early submission
Abstraction Incentive Mechanism (AIM)	No feedback provided.	No change made
Local community satisfaction	Ofwat noted that this performance commitment was incomplete and was still in development at the time of submission.	The definition now includes information on the survey that will be used as part of this performance commitment and the specific initiatives that it will measure.

Our finalised definitions can be found in Appendix 3 of this document.

We have not identified any performance commitment as being scheme specific or related to a special cost factor.

Ofwat introduced scheme-specific performance commitments at PR14 to protect customers from the non-delivery of major schemes for which companies had received additional allowed totex due to a successful special cost factor claim. None of our PR19 performance commitments match this criterion - where there is a close link to a group of investment schemes we are proposing monitoring the outcome rather than the scheme delivery, including performance commitments such as WINEP that require EA sign off that the obligations have been delivered, not just a completed project..

Ofwat has also said that for PR19 we may accompany our applications for special cost factor claims with our proposed approach to protect customers in the event of delay or non-delivery of the performance commitment subject to the special factor cost claim. None of our PR19 performance commitments match this criterion.

5.10.1. Allocation of Performance Commitments to Price Control

We have allocated our performance commitments between the three price controls that apply to Bristol Water: Water resources, Water Network Plus and Residential Retail. The basis for the allocation is set out in the table below:

Table 5-6 –Allocation of Performance Commitments to Price Control

Performance commitment	Price Control Allocation	Justification
Water quality compliance	Water Network plus	The performance commitment has been allocated to the water network plus price control because CRI substantially depends on water treatment and distribution activities
Supply Interruptions	Water Network plus	The performance commitment has been allocated to the water network plus price control because it is driven by the activity of maintaining the network.
Mains Bursts	Water Network plus	The performance commitment has been allocated to the water network plus price control because it is driven by the activity of maintaining the network.
Unplanned Outage	Water Network plus	The performance commitment has been allocated to the water network plus price control because of the link to water treatment activity

C3 - Delivering outcomes for customers

Performance commitment	Price Control Allocation	Justification
Risk of severe restrictions in a drought	Water resources	The performance commitment has been allocated to the water resources price control because the activities covered include raw water storage.
Customer contacts about water quality – appearance	Water Network plus	The performance commitment has been allocated to the water network plus price control because of the link to water treatment and network distribution
Customer contacts about water quality – taste and smell	Water Network plus	The performance commitment has been allocated to the water network plus price control because of the link to water treatment and network distribution
Properties at risk of receiving low pressure	Water Network plus	The performance commitment has been allocated to the water network plus price control because the activity relates to the network
Turbidity performance at treatment works	Water Network plus	The performance commitment has been allocated to the water network plus price control because the activity relates to water treatment
Unplanned maintenance – non-infrastructure	Water Network plus	The performance commitment has been allocated to the water network plus price control because of the activity relates to water treatment
Population at Risk from Asset Failure	Water Network plus	The performance commitment has been allocated to the water network plus price control because of the investment relates to network distribution and resilience of supplies.
Customer measure of experience (C-MeX)	Residential Retail	The performance commitment has been allocated to the residential retail control in line with Ofwat instruction in App1 guidance, as it measures customer experience
Developer services measure of experience (D-MeX)	Water Network plus	The performance commitment has been allocated to Water Network plus in line with Ofwat instruction in App1 guidance – as Developer Services are within the network plus price control
Percentage of customers in water poverty	Residential Retail	The performance commitment has been allocated to the residential retail price control because our support for vulnerable customers with affordability issues is carried out as a retail activity.
Value for money	Residential Retail	The performance commitment has been allocated to residential retail because it primarily measures customer-facing activities

C3 - Delivering outcomes for customers

Performance commitment	Price Control Allocation	Justification
Percentage of satisfied vulnerable customers	Residential Retail	The performance commitment has been allocated to the residential retail price control because our support for vulnerable customers is carried out by our customer-facing teams as a retail activity
Void properties	Residential Retail	The performance commitment has been allocated to the residential retail price control because void management is an activity within the retail control.
Leakage	Water Network plus	The performance commitment has been allocated to the water network plus price control because it is driven by the activity of maintaining the network.
Per Capita Consumption (PCC)	50% Water Network plus, 50% Residential Retail	The performance commitment has been partially allocated to the residential retail price control because it covers customer-related services that we provide through water efficiency information. It is also partially allocated to Water Network plus due to the impact of metering activity on consumption.
Meter penetration	Water Network plus	The performance commitment has been allocated to the water network plus price control because metering is included as an activity within the network plus control.
Raw Water Quality of Sources	Water Resources	The performance commitment has been allocated to water resources as it relates to activities within the water resources control
Biodiversity Index	50% Water Network plus, 50% Water Resources	The performance commitment has been equally allocated to the water resources and water network plus price controls because the activities cover land around reservoirs and treatment works, and biodiversity of the environment relates to both network and water resources.
Waste disposal compliance	Water Network plus	The performance commitment has been allocated to the network plus control because the activities relate to water treatment
Water Industry National Environment Programme (WINEP) Compliance	Water Resources	The performance commitment has been allocated to the water resources price control because the activities covered include raw water abstractions, rivers and reservoirs, catchment management and biodiversity action plans substantially.

Performance commitment	Price Control Allocation	Justification
Local community satisfaction	Water Network plus	The performance commitment has been allocated to the water network plus price control because the activities undertaken through community and stakeholder engagement are within the network plus control
Abstraction Incentive Mechanism (AIM)	Water Resources	The performance commitment has been allocated to the water resources price control because it relates to raw water abstraction activity.

5.10.2. Data Improvements and Methodology Changes

In 2018 we submitted a request following the process outlined in Ofwat’s information notice IN 16/07 to update the definitions of a number of our PR14 performance commitments. These updates were confirmed in a corrigenda published by Ofwat in April 2018¹⁰. This is further explained in Section C7 – Track record of delivery.

Our intention is that the definitions set out in this document will apply unchanged during 2020-25 and that no similar update will be required. However, in the event that due to unforeseen changes are required, we will follow the process as set out in IN16/07 unless it is replaced by Ofwat.

Our corrigenda to our PR14 definitions included the commitment that we would not benefit from improvements in the underlying assumptions underpinning our leakage calculation, and that ODI calculations would only take account of real performance changes. We make this same commitment for PR19, that ODI payments will only relate to real performance changes, and not definitional, methodological or data changes.

¹⁰ <https://www.ofwat.gov.uk/wp-content/uploads/2018/04/Corrigenda-Bristol-Water-Limited.pdf>

5.11. Performance Commitment Targets

Targets are the pledges we make for each year, in order to achieve a certain level of service for each performance commitment

For each performance commitment we have set a target level to achieve by 2025. Within our App1 data table submission we also set out the annual targets from 2020.

Ofwat requires performance targets to be stretching and has mandated targets for some performance commitments.

The approach used to set stretching performance target levels is shown below.

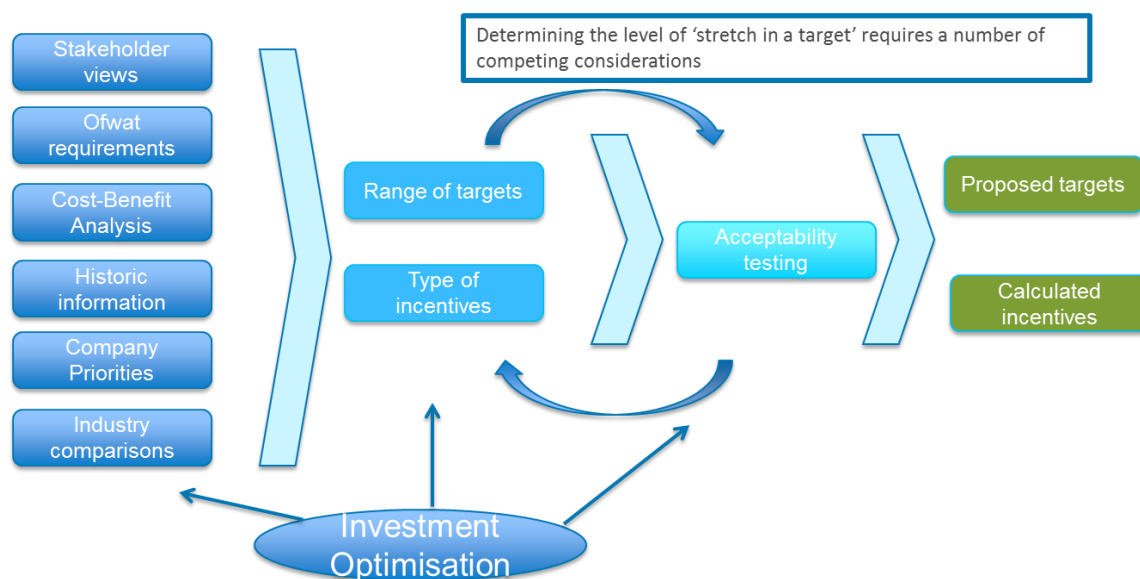


Figure 5-8 - PR19 Setting Stretching Performance Target Levels

To set a stretching target for each performance commitment we have used a number of sources of information. These are described in the table below.

Source of information	How the information was used
Customer and stakeholder views	Through a management review process, research summaries were used together with customer valuation results to develop target options to be tested through our investment planning process.
Legal and regulatory requirements	Through a management review process, legal and regulatory requirements we used to identify a minimum programme of activity.
Cost-benefit analysis	All target options are analysed in the Company's optimisation process to produce the optimal set of interventions to meet performance targets that are acceptable to our customers. The avoidance of risk plays a substantial part of this analysis.
Comparative information	Using robust comparative information on other companies' performance (and sometimes other sectors') to inform service levels.

C3 - Delivering outcomes for customers

Historical information	Using information on our previous performance to inform our service level.
Minimum improvement	Using a minimum improvement based on improvements seen in the past.
Maximum level attainable	Using the maximum possible level of performance as the reference point for setting the service level.
Expert knowledge	Considering expert knowledge about possible improvements that are not captured in the above approaches. For example, asset health performance commitments may be informed by engineering expertise and/ or models about what improvements can be made in the future.

Table 5-7 - Approaches for assessing performance commitment levels

We have used a decision framework to determine whether comparative information is an appropriate approach to take, this is summarised in the figures below.

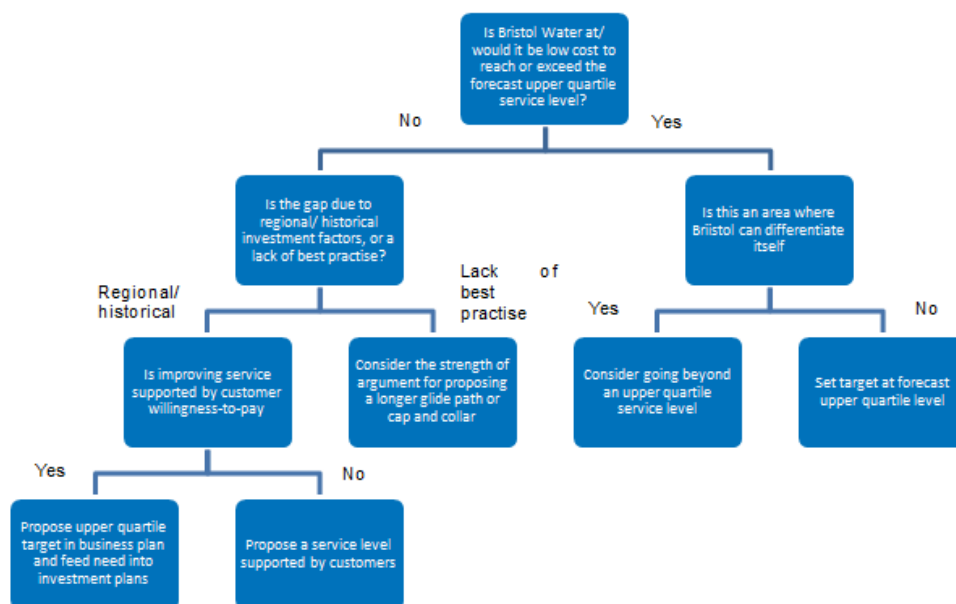


Figure 5-9 - Performance Commitments where comparisons exist

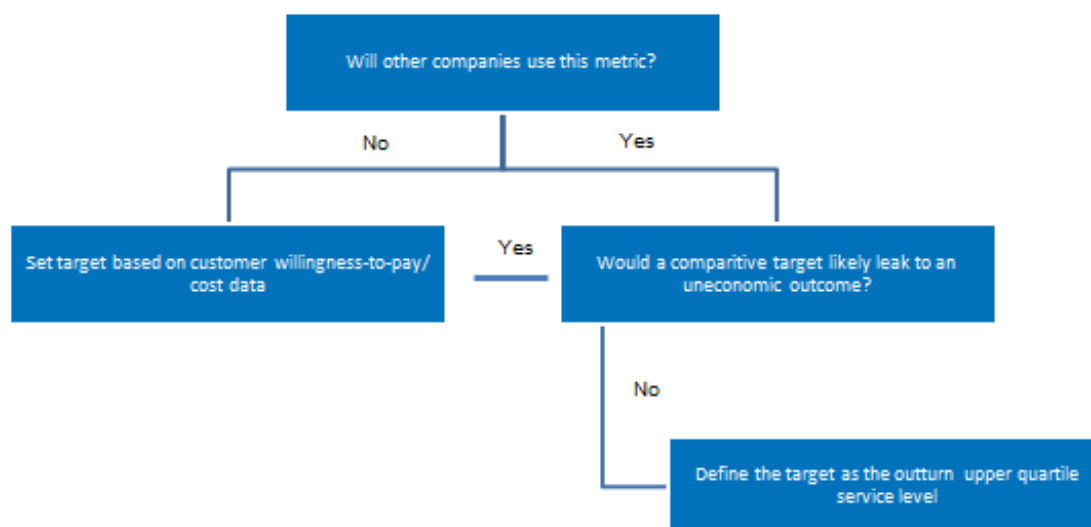


Figure 5-10 - Performance commitments where comparisons do not exist

5.12. Cost/ Benefit Analysis

At the heart of the process for deriving asset related intervention options is the assessment of risk to maintaining or improving performance. Interventions can have one or more links to performance commitments that are quantified in terms of the measurement unit. For example, an identified potential of a water main failing in the AMP7 period will have a risk of bursts assessed in terms of bursts per 1000 km, supply interruptions in terms of minutes, leakage reduction in terms of MI/d and possibly other measures as well.

All options are analysed in the optimisation process to produce the optimal set of interventions to meet performance targets. The avoidance of risk forms a substantial part of these assessments.

Interventions are grouped into asset types and investment cases for ease of delivery. This categorisation is shown in Table 5-8

Asset Type or Investment Case	Comments Performance Commitment contributed to
Trunk Mains	Supply interruptions, asset health, leakage, discoloured water, resilience
Distribution Mains (inc. DOMS)	Supply interruptions, asset health, leakage, discoloured water
Service Reservoirs and Towers	Supply interruptions
Treated Water Pumping Stations	Supply interruptions
Air Valves	Leakage, supply interruptions
Bulk Meters and PRVs	Leakage, supply interruptions
Customer Meters	Metering, leakage, water efficiency
Network Ancillaries	Asset health
Network Monitoring	Leakage, supply interruptions, asset health, low pressure
Leakage	Specific initiatives to address leakage
New Development	Specifically for new development purposes

Asset Type or Investment Case	Comments Performance Commitment contributed to
Water Resources	Raw water quality
Raw Water Distribution	Resilience, drought risk
Raw Water Pumping Stations	Resilience, drought risk
Treatment Works Strategic Maintenance	Asset Health
ICA and Telemetry	Asset Health
Resilience	Specific initiatives to address resilience
IT	Customer Experience. Water quality taste and odour
Environment	WINEP, Biodiversity Index, Stakeholder satisfaction

Table 5-8 - Asset Types or Investment Case Categories

We used the cost/benefit approach to develop initial target levels for each performance commitment. Chapter 6 explains how the approaches have informed our targets and ODIs for each commitment. In summary, for each performance commitment we input suggested targets into our investment optimiser to develop the least cost overall programme to deliver our overall package of performance commitments. We were then able to compare the cost of delivering performance commitments to customer valuation data. We were also able to use the valuation data in the optimiser directly to develop performance levels based on customer valuations.

Through this analysis we developed three alternative programmes, which were all within the bounds of the customer valuation data. The first programme represented the regulatory minimum level of investment and a slower programme of delivery towards the achievement of our long-term ambitions. The middle programme which we called our “suggested programme” and represented a central view of our proposed target levels. The upper programme was towards the upper bounds of valuation data and represented a faster programme of delivery of our long-term ambitions.

We consulted on these three programmes in our draft Business Plan, which was published on 29th March 2018.

5.12.1. Water Quality Compliance

Water Quality Compliance is measured by the DWI’s new metric: Compliance Risk Index (CRI). This assesses the effects of failures of assets on service levels and their total impact on customers and the environment.

CRI deterioration can be affected by incidents in the network and, to a small extent, in water treatment. Asset related risks that have the potential to influence CRI performance were identified through our risk assessment process and the possible impacts are shown in Table 5-9 and Figure 5-11.

Asset Grouping	CRI Impacts
Trunk Mains	0.7869349
Distribution Mains (inc. DOMS)	0.1599916
Air Valves	0.0499000
Network Ancillaries	0.0001213
Treatment Works Strategic Maintenance	0.0000004

Table 5-9 - CRI - Identified Potential Impacts

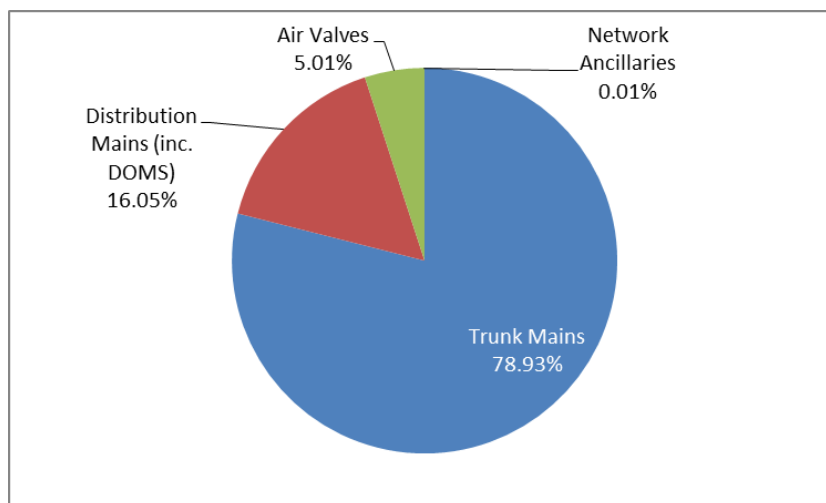


Figure 5-11 - CRI - Identified Potential Impacts - Proportions by asset category

Following optimisation, only the majority of Trunk Mains intervene

The intervention options shown above were selected, providing a benefit equivalent to a CRI score of 0.61.

5.12.2. Supply Interruptions

Supply Interruptions are expressed as minutes lost per customer per year. The performance commitment definition is used to assess risks of performance impacts. The majority of risk is associated with planned and unplanned work on water mains. A small proportion is linked to other aspects such as pumping station failures. As many interventions have multiple risk associations, there are identified subsidiary benefits linked to interventions primarily derived for dealing with other PCs.

The values for all available options are shown in Table 5-10 and Figure 5-12

Asset / Investment Grouping	CML Impact Minutes
Trunk Mains	12.159
Distribution Mains (inc. DOMS)	9.441
Treated Water Pumping Stations	0.611
Network Monitoring	2.516
ICA and Telemetry	0.029
Resilience	0.341

Table 5-10 - Supply Interruptions - Potential Impacts

C3 - Delivering outcomes for customers

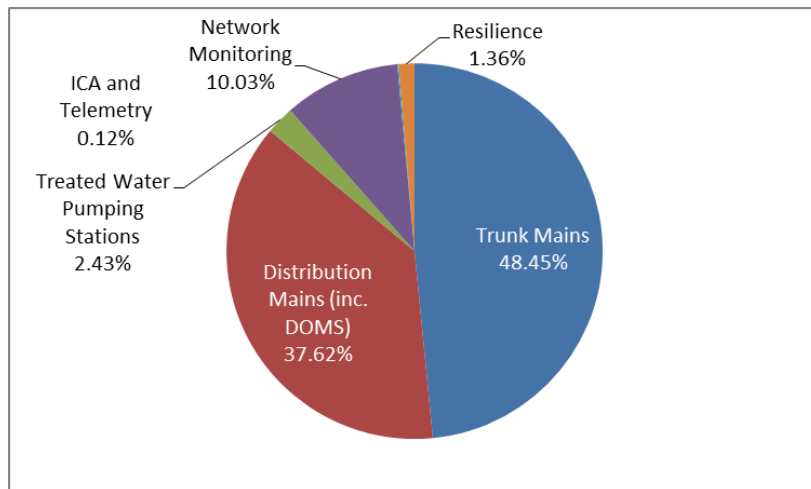


Figure 5-12 - Supply Interruptions Potential Impacts - Proportions by asset and investment category

The optimised investment plan selected interventions in the asset or investment categories as shown in Table 5-11 and Figure 5-13:

Asset / Investment Grouping	CML Impact Minutes
Trunk Mains	5.688
Distribution Mains (inc. DOMS)	4.127
Treated Water Pumping Stations	0.403
Network Monitoring	1.677
ICA and Telemetry	0.029
Resilience	0.341

Table 5-11 - Supply Interruptions - Benefits from Selected Interventions

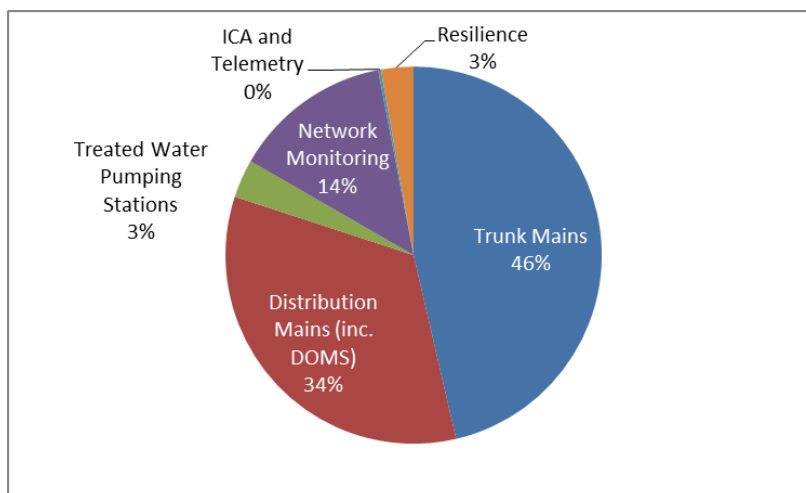


Figure 5-13 - Supply Interruptions - Investment Plan by Asset or Investment category

Although there is a major set of activities related to delivering the 15% projected reduction in leakage in AMP7, many other interventions have a small impact on leakage and contribute

C3 - Delivering outcomes for customers

to the overall benefit. Table 5-12 Figure 5-14 show the total available impact on leakage reduction in our overall intervention option pool.

Asset / Investment Grouping	Leakage Impact MI/d
Trunk Mains	0.082
Distribution Mains (inc. DOMS)	1.088
Bulk Meters and PRVs	0.115
Network Ancillaries	1.803
Network Monitoring	0.361
Leakage	6.450

Table 5-12 - Leakage - Potential Impacts

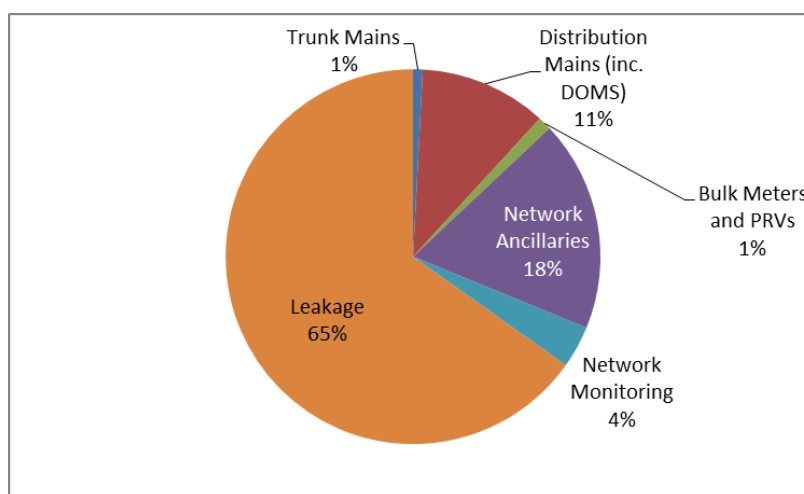


Figure 5-14 - Leakage - Potential Impacts - Proportion by asset or investment type

Following optimisation of the available options, the leakage target was found to be best-met by the selection of interventions in the asset or investment categories shown in Table 5-13 and Figure 5-15.

Asset / Investment Grouping	Leakage Impact MI/d
Trunk Mains	0.016
Distribution Mains (inc. DOMS)	0.562
Bulk Meters and PRVs	0.115
Network Ancillaries	0.291
Network Monitoring	0.240
Leakage	6.450

Table 5-13 - Leakage - Investment Plan by Asset or Investment Grouping

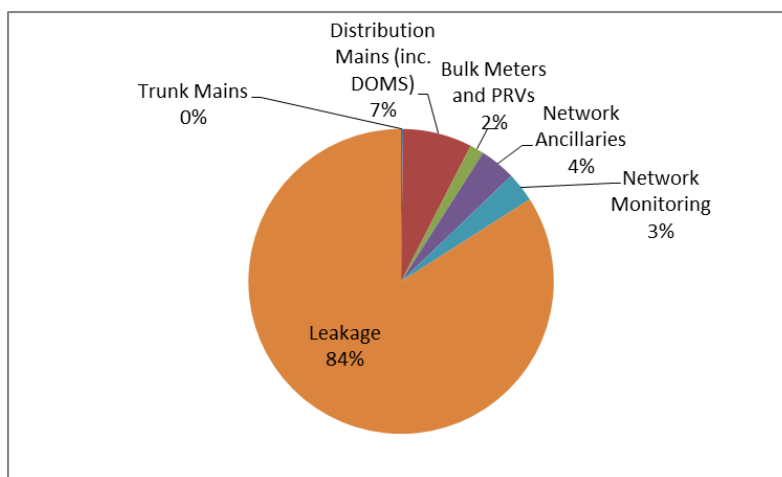


Figure 5-15 - Leakage - Investment Plan by Asset or Investment Type

5.12.4. Bursts

The performance commitment for Bursts is measured as bursts per 1000 km of total mains length. Impacts on this metric are generated within the trunk and distribution systems. Table 5-14 shows the available benefits within all intervention options. It can be seen that, as would be expected, the vast majority of benefit is associated with distribution mains.

Asset Type	Bursts Impact Per 1000 km
Trunk Mains	0.292
Distribution Mains (inc. DOMS)	27.314
Network Monitoring	0.600

Table 5-14 - Bursts - Potential Impacts

The selected interventions in the investment plan are categorised in Table 5-15.

Asset Type	Bursts Impact Per 1000 km
Trunk Mains	0.065
Distribution Mains (inc. DOMS)	8.478
Network Monitoring	0.400

Table 5-15 - Bursts - Investment Plan by Asset Grouping

5.12.5. Unplanned Outage

Unplanned Outage is a new measure which conveys the impact of treatment works or raw water supply stoppages on the overall supply potential of the company. It is stated as a percentage of total output. As the definition suggests, it is limited to production assets. Table 5-16 shows the available benefits from the relevant asset or investment categories. Figure 5-16 illustrates the proportion of benefits that are available within those categories.

Asset / Investment Grouping	Outage Impact %
Bulk Meters and PRVs	0.268
Raw Water Pumping Stations	0.084
Treatment Works Strategic Maintenance	0.145
ICA and Telemetry	0.129

Table 5-16 - Unplanned Outage - Potential Impacts

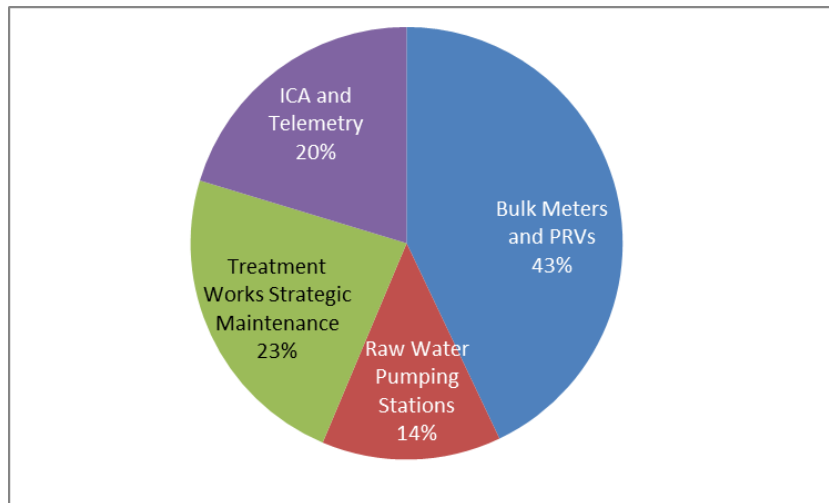


Figure 5-16 - Unplanned Outage investment plan by asset category

Following optimisation, Table 5-17 shows the values of benefits selected.

Asset / Investment Grouping	Outage Impact %
Bulk Meters and PRVs	0.000
Raw Water Pumping Stations	0.037
Treatment Works Strategic Maintenance	0.076
ICA and Telemetry	0.065

Table 5-17 - Unplanned Outage - Investment Plan by Asset or Investment Category

Figure 5-17 illustrates the way those selected interventions are apportioned across the asset categories.

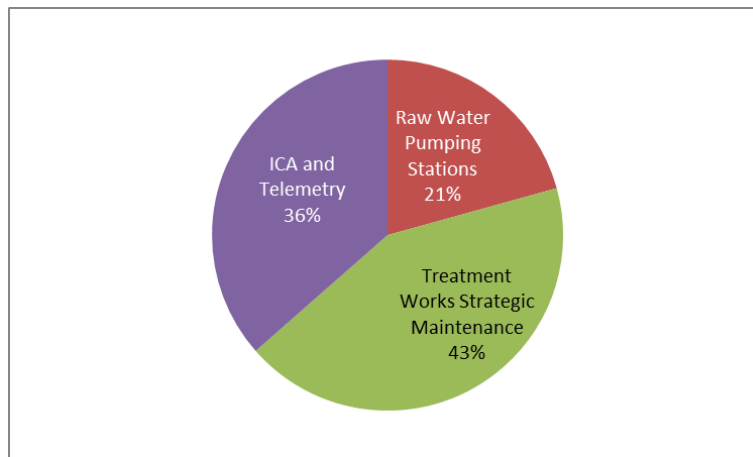


Figure 5-17 - Unplanned Outage - Investment Plan by Asset Category

5.12.6. Discoloured Water (Appearance) Contacts

Appearance Contacts are customer calls to report on water supplied to them that is not clear. Within BW, the majority of such contacts relate to iron discolouration. The sources of such issues are normally fine deposits of iron from old pipelines that have been washed through distribution systems. The solutions that help reduce such contacts are therefore mainly in pipeline systems.

Table 5-18 lists the asset types that have interventions addressing this performance commitment. As can be seen, the vast majority of benefit lies in the distribution mains options.

Asset Grouping	Contacts Impact Per 10,000 population
Trunk Mains	0.97
Distribution Mains (inc. DOMS)	9.9
Network Monitoring	0.5

Table 5-18- Appearance Contacts – Potential Impacts

The optimised plan selected interventions to meet the performance requirements in the groupings shown in Table 5-19. Again, the majority of benefit is delivered within the distribution mains options.

Asset Grouping	Contacts Impact Per 10,000 population
Trunk Mains	0.57
Distribution Mains (inc. DOMS)	4.55
Network Monitoring	0.35

Table 5-19 - Appearance Contacts - Investment Plan by Asset Groupings

5.12.7. Taste and Odour Contacts

This PC relates to customers contacting the Company to report issues with the smell or taste of water. Similarly to appearance contacts, it is measured as contacts per 1,000 customers.

No asset related intervention options were identified to affect this measure, it is a side benefit of other options and largely delivery will lie on improved customer communication as resilience means water supplies come from alternative sources, through improved information.

5.12.8. Meter Penetration

Not all customers have meters installed for measuring water consumption. The benefits of metering for reducing demand are well established and Bristol Water aims to increase the proportion of meters installed. There are several initiatives in place or planned that will improve the situation. A few of these involve asset related work in AMP7 under the umbrella classification of Customer Meters.

The total impact identified for the Customer Meter investment case was an increase in metering of 9.1%.

The selected interventions in this category provide a benefit of 9.1% increase in meter penetration from 65.9% to 75% by 2025.

5.12.9. Raw Water Quality

This measure is a company-specific PC that aims to demonstrate how we improve raw water quality in some circumstances in order to avoid increased long-term expensive end-of-pipe treatment being necessary. This PC is served entirely by in the Environment investment case. It relates to the mass of phosphorous removed from raw water.

The relevant intervention has a benefit of 531 kg of phosphorous .This intervention was selected for the investment plan.

5.12.10. Properties at risk of Low Pressure

There are a number of properties that are registered as having the potential for experiencing mains pressure lower than the nationally agreed baseline level. The net removal expected in AMP7 is 9 properties.

The solutions to this issue are provided by benefits shown in Table 5-20.

Investment Category	Properties
Network Monitoring	2.91
Leakage	7.06

Table 5-20 - Low Pressure - Potential Benefits

The selected interventions provided the required benefits as shown in Table 5-21.

Investment Category	Properties
Network Monitoring	1.94
Leakage	7.06

Table 5-21 - Low Pressure - Investment Plan by Investment Category

5.12.11. Waste Disposal Compliance

This PC relates to our ability to dispose of our waste material from production in a satisfactory and compliant way.

At present we aim to maintain 100% compliance throughout AMP7.

Interventions with secondary benefits related to waste disposal compliance were identified in the Treatment Works Investment case at a small value of 0.4%. However, none of the associated interventions were selected for inclusion in the investment plan. It will be delivered through base maintenance and operations.

5.12.12. WTW Turbidity

This measure is not considered to have any significant risk. No interventions were therefore developed to address this factor. As an asset health measure, it is delivered through base maintenance and operations

5.12.13. Per Capita Consumption

Reductions in per capita consumption are largely planned to be driven by non-asset related initiatives. Promotion of meter options through water efficiency campaigns will deliver the remainder of the 5% reduction being targeted, with investment on its own delivering only c1%. However, some interventions will provide some benefit for this performance commitment. These are listed in Table 5-22.

Investment Category	PCC Reduction
Network Monitoring	0.03
Customer Meters	1.85

Table 5-22 - PCC - Potential Benefits

Most of the relevant interventions were selected for the investment plan as shown in Table 5-23.

Investment Category	PCC Reduction
Network Monitoring	0.02
Customer Meters	1.85

Table 5-23 - PCC - Investment Plan

5.12.14. Unplanned Maintenance Events

This PC refers to reactive M&E maintenance jobs. Several interventions related to production assets were identified as having the potential to reduce such activity. This highlights the benefits of planned refurbishment offsetting the risk of increased unexpected maintenance in an optimised programme. This measure was not directly targeted, as effectively it is the outcome of the least cost asset programme targeting other customer performance commitments that confirms that asset health will continue to be maintained at a least cost to customers. The summary is shown in Table 5-24.

Asset Category	Event Reduction
Treated Water Pumping Stations	84
Raw water Pumping Stations	30
Treatment Works	917

Table 5-24 - Unplanned Maintenance - Potential Benefits

5.12.15. Biodiversity Index

This PC is a company-specific measure designed to illustrate our commitment to protecting the environment. The index relates to environmental protection aspects. The interventions related to this index are all in the 'Environment' investment category. They were all included in the investment plan and provide an improvement to the index of 26 points. The remainder of the performance commitment target of 53 points is a stretching target that goes beyond the legal minimum reflected in the investment programme. It reflects side benefits of land management at our works and reservoirs, and the potential for continued innovation (as previously undertaken with the national hedge-laying championship).

5.12.16. Resilience

Several specific schemes have been included in the investment plan to improve resilience of customers' supplies. Details of these interventions can be seen in the Resilience investment case.

6. Developing our Outcome Delivery Incentives (ODIs)

ODIs are a mechanism to ensure that the Company is incentivised to achieve the targets it pledges

6.1. Overview

This chapter sets out our outcome delivery incentives, and the process we have followed to set them, for the twenty-six performance commitments set out in Chapter 5.

All performance commitments have an associated outcome delivery incentive (ODI) to incentivise the company to achieve its committed service level (or 'target') for each performance commitment.

ODIs aim to ensure that we deliver for our customers. These incentives can be reputational or financial. Financial ODIs include underperformance penalties if we do not deliver our performance commitments for our customers and, where appropriate, outperformance rewards for going beyond the 'stretching' performance commitment level and delivering additional value for our customers i.e. rewards are reserved for going 'above and beyond' our customers' expectations. All performance commitments are accompanied by reputational ODIs. By reporting our performance to customers and CCGs, we have an incentive to fulfil our service levels to customers. Rewards and penalties, which should be supported by customer engagement, align customer, management and shareholder interests by increasing the focus on improving the services that customers care about.

The ODI package, along with the allowed cost of capital, other incentives mechanisms and tools like return on regulated equity (RoRE) and financeability, play a key role in determining the overall risk and reward package. The ODI package is therefore critical to achieving an appropriate balance of risks and rewards between customers, management and our shareholders.

Each ODI essentially determines what risks customers take and the compensation they can expect to receive if they do not receive the committed performance level (the target) the Company has committed itself to achieving. Not only must each of these ODIs be appropriately calibrated, but when aggregated together, the package of ODIs must also allocate risks to those areas where we can be comfortable with bearing the risk.

Setting the wrong incentives may mean that management are subject to performance risk in areas beyond their control, or are overly incentivised to perform on certain areas. Subjecting management to too much risk has the potential to increase financing costs. Our incentives package should therefore be aimed at areas that our customers value, be proportionate in terms of willingness-to-pay and the impact on RoRE and reflect the regulatory framework we must operate within.

Our financial outcome incentives have been developed using customer Willingness to Pay (WTP) information thereby focussing our incentives on the services that customers value.

Each underperformance payment determines what compensation customers can expect to receive if they do not receive the target performance level we are committing to in our plan. The underperformance payments are based on customer WTP and forecast efficient costs

C3 - Delivering outcomes for customers

allocated to outcomes from the company's investment programme. The approach takes account of the overlap with the totex menu incentive (for wholesale).

The outperformance payments are based solely on customer Willingness to Pay and provide an incentive to drive further innovation and cost efficiencies where customers prioritise service improvements the most. This too recognises the impact of the totex menu incentive (for wholesale)

Our incentives are supported by customer engagement throughout the process. Our engagement on ODIs has included a series of focus groups, customer forums and a quantitative survey. It is also supported by our valuation research and acceptability testing. The overall ODI package reflects what is important to customers, but also the wider risk and reward balance that links to long-term resilience.

In some cases we propose that our additional reward levels will be set based on the higher ranges of customer WTP, and that the penalty ranges will be based on our forecast costs and WTP. This proposal is supported by the findings of the acceptability testing on the DBP carried out by NERA and Traverse. The updated WTP triangulated by NERA has been used in most cases in the WTP design. The exception was leakage, where the strength of customer priority ultimately meant that WTP outweighed actual costs by a large degree, and did not reflect views that tackling leakage should reduce bills. Therefore we used the lower range of WTP and targeted where marginal cost and benefit were balanced at the point where the investment plan as a whole saw bill reductions and long-term stability. The long-term ambition for leakage will therefore be revisited with innovation, which is appropriate given our position at or beyond the current industry upper quartile.

6.2. Approach and engaging with customers

The figure below shows our approach to setting outcome delivering incentives around our stretching performance commitments that are discussed in Chapter 5. The figure demonstrates that we have moved away from reliance on Willingness to Pay (WTP) and have instead placed a greater weight on building a robust, balanced and proportionate evidence base.

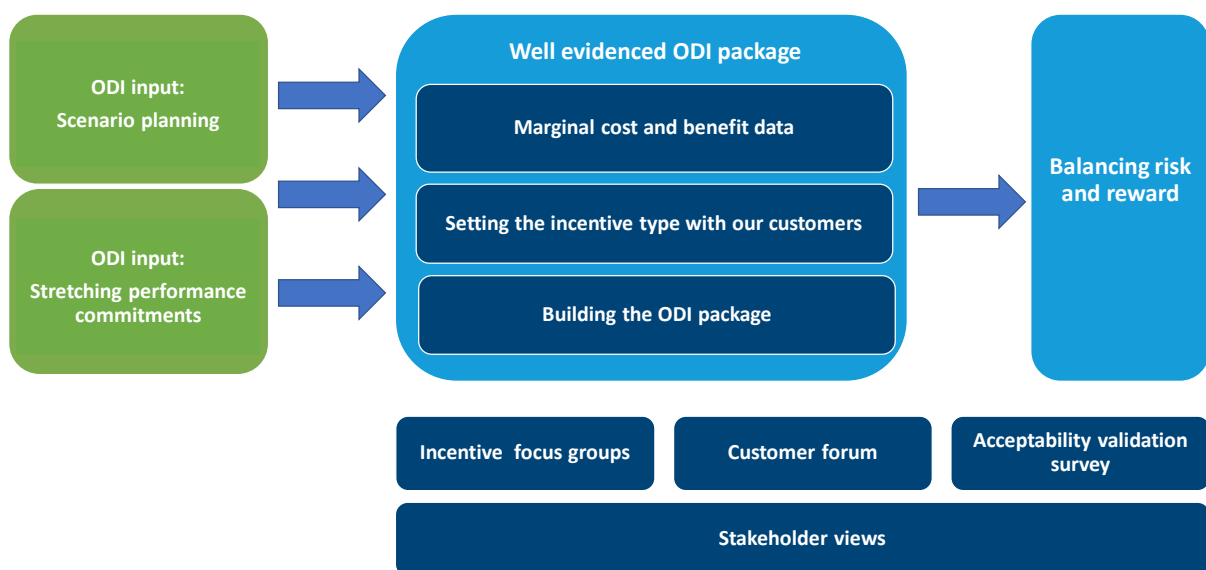


Figure 6-1 - Approach to setting ODIs

- **ODI Input: Scenario planning** – We used scenarios to understand the range of service improvements we could include in our Business Plan. These scenarios have been used to inform the marginal costs and benefits that underpin our incentives. The scenarios have been influenced by comparative information, historical information, minimum improvement levels, cost benefit analysis, maximum attainment levels and expert knowledge. Full details of our scenario planning are covered in this chapter.
- **ODI Input: Stretching performance commitments** – The stretching service levels are influenced by our customer acceptability testing and customer research as well as the cost-benefit calculations within our investment planning. Full details of how we have defined stretching and set our targets are covered in Chapter 5. The ODIs are set around these targets.
- **Marginal cost and benefit data** – We have applied cost-benefit analysis to understand the cost and customers' marginal willingness to pay and wider societal benefits for changes to service levels.
- **Setting the incentive type with our customers** - Our ODIs include both financial and reputational incentives which we have set through discussion with our customers.
- **Building the ODI package** – Our financial incentives apply the marginal cost and benefit information and take into account Ofwat's 'baseline' formula for incentives and Ofwat, stakeholder and customer expectations for the form and timing of the ODIs.
- **Balancing risk and reward** – We have assessed the RORE range and balance of the incentives, including asset health, and compared this to our customer research on the overall package of incentives.

The remainder of this chapter provides further details on these steps to demonstrate why our incentives form a well evidenced ODI package and how we have balanced risk and reward.

6.3. Setting the Incentive Type with our Customers

It was important for us to understand how our customers wanted us to use incentives, as they have a direct impact on customers' bills. We have worked with our customers to allocate our performance commitments to one of three types of incentive: reputational, underperformance penalty only financial incentive or underperformance penalty and outperformance payment financial incentive.

We held a series of focus groups with customers in October 2017, where we explained the concepts of outcome delivery incentives using a mix of analogies, games and examples; and asked them for their views on what type of incentives were appropriate for different performance commitments. The full results can be found in Section C1 – Engagement, communication and research.

The first step was to allocate the incentives to either financial incentives or reputational incentives. Our default position in line with the Ofwat guidance and supported by our customers is to set financial incentives to ensure that our customers are protected should we not deliver. We have only set reputational incentives for 4 of our 26 performance commitments.

Full details of our customers' views and how this has influenced our decision on the type of incentive are set out in Chapters 7, 8 and 9 for each performance commitment.

Our reasons for selecting reputational incentives are:

C3 - Delivering outcomes for customers

- Customer, regulator and stakeholder expectations;
- Whether a financial incentive would lead to a perverse incentive ; and
- Whether the performance commitment has willingness to pay value and/or costs allocated e.g. value for money.

Our findings from the focus groups are below.

Customers participating in the focus groups thought reputational incentives were appropriate for:

- Biodiversity Index – due to the perceived difficulty of measuring biodiversity. Their objection was based on a concern over transparency of the measurement. Since the focus group we have agreed with Ofwat a more transparent approach to reporting this performance commitment.
- Drought risk – due to Bristol Water’s lack of control over the wider climate. Ofwat also recommended this performance commitment be reputational in its methodology statement. We have adopted this recommendation.
- Raw Water Quality – due to Bristol Water’s lack of control over agricultural practices and a desired focus on improving the quality of treated water. Our customers' objection to a financial incentive was therefore based on the metric’s measurement at PR14. This has been revised for PR19.
- Water Quality Contacts (taste/odour) – due to the subjective nature of taste. At PR14 a majority of companies, as well as Bristol Water, set a financial ODI for this metric. As this measure reflects both asset health and customer satisfaction, we feel that it is appropriate to again set a financial ODI for this metric.

Figure 6-2 – Findings on reputational incentives from ODI focus group (October 2017)

We have included underperformance penalties for all of the financial incentives. The second step was to decide which of the financial incentives should also have outperformance payments. Our customers thought that the majority of incentives should have both underperformance and outperformance payments. Our criteria for setting outperformance payments include:

- Whether an improved level of service is feasible e.g. if the performance commitment is at the maximum attainable level then an outperformance payment is not possible;
- Whether our customers support an outperformance payment for the incentive and want to see innovation to drive further improvements;
- Whether we can value the improvement using customer willingness to pay or a societal value; and
- The outperformance payment covers stretching level of performance.

We have chosen to set our asset health incentives as underperformance-only penalties. By asset health we refer to mains bursts, unplanned outage, properties at risk of receiving low pressure, turbidity performance at treatment works and unplanned maintenance – non-infrastructure. Water quality indicators (water quality compliance and water quality contacts) are considered to be partly related to asset health and are therefore not included. Our approach to adopting underperformance only penalties for these metrics has been driven by our customers’ priorities and our longer-term vision. The purpose of our asset health penalties is to ensure our customers are protected from long-term deterioration in the health of our assets and are guaranteed a high level of service in the future. No outperformance payments have been proposed because the service associated with these metrics should be

C3 - Delivering outcomes for customers

provided as a minimum. This is consistent with our customers' priorities expressed in the extensive research carried out for our Business Plan.

Our findings from the focus groups are below.

Customers participating in the focus group thought that the majority of incentives should use the penalty and reward system. Customers also recommended a number of penalty-only performance commitments:

- C-MeX and D-MeX, however as the incentives for these metrics will be set by Ofwat, we did not adopt our customers' recommendation
- Water Quality Contacts (appearance). However at PR14 a majority of companies, as well as Bristol Water, set a reward and penalty ODI for this metric, which we have again adopted at PR19.
- Value for Money. Bristol Water has proposed this be one of the four reputational metrics at PR19. CCWater have added their support for this approach

Figure 6-3 - Findings on type of incentives from Focus Group (October 2017)

In the ICS Acceptability testing (as noted in Chapter 3), it was also found that customers supported in-period incentives.

6.4. Marginal cost and benefit data

Marginal cost and benefit data are a key input into the incentive rate calculation. The marginal benefit is the value customers place on a unit change in service and the marginal cost is the impact of the investment to make that change in service on customers' bills. Our business-planning process has involved developing a number of scenarios. Chapter 5 sets out our approach to developing and challenging the scenarios, optimising and balancing the plan and testing scenarios with customers to inform our stretching performance commitment targets.

The costs and benefits that underpin our incentives are based on the change in costs between our base scenario and our proposed Business Plan. The change in costs and benefits are therefore aligned with the range over which the incentive rates apply.

Marginal benefits relates to the customer and societal values that have been used to inform our performance commitments and set the ODIs.

Our PR19 valuation research has involved the following:

C3 - Delivering outcomes for customers

PR14 data	<ul style="list-style-type: none"> We reviewed the willingness to pay valuations from PR14
PR19 willingness to pay stage 1	<ul style="list-style-type: none"> A joint approach with Wessex Water using a new and innovative Max-diff approach
PR19 willingness to pay stage 2	<ul style="list-style-type: none"> Using the same max-diff approach as stage 1, we obtained specific valuations for water resource options to inform our Water Resources Management Plan
Benefits Transfer	<ul style="list-style-type: none"> We looked at valuation data from existing sources such as PR14 industry valuations and published government guidance to understand the range of valuations for the industry. The analysis provides a benchmark against which to compare our PR19 valuation research eg. to assess where valuations sit compared to previous research or research from other companies or sources during the triangulation process
Macroeconomic analysis of drought impacts	<ul style="list-style-type: none"> We drew on macroeconomic data to estimate the amount of economic output in our supply area that would be lost following severe water use restrictions
Revealed preference	<ul style="list-style-type: none"> We asked customers after three supply interruptions how much they spent on alternative activities including direct expenditure such as eating/drinking and additional travelling costs to calculate the average cost of interruptions for customers. Using information on demand for prices of other good to value water service improvement including assertive behaviour, value of lost economic output, hedonic pricing methods and travel cost methods
Slider game	<ul style="list-style-type: none"> Our innovative stated preference survey via an online game produced customer valuations in a fun and engaging way
Mini stated preference at deliberative resilience events	<ul style="list-style-type: none"> We used voting key pads at our deliberative event both at the beginning of the day and the end of the day to understand how customers valuations may change once they have spent the full day learning about issues

Figure 6-4 - Approaches taken to valuation research

Our primary triangulation exercise (explained in Section C1 – Engagement, communication and research) combined these values to produce a set of values that could be used in Business-planning and to inform the ODIs.

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 6-5 - Customer WTP Values

The triangulation exercise provided values for a number of key service impacts that underpin our performance commitments. As the exercise was completed in November 2017, and we have continued to engage our customers we have supplemented the primary exercise with additional findings and a broader base of evidence to develop an overall incentive package.

We have used the following sources to inform the marginal benefit incentives rates:

1. Primary triangulation exercise;
2. Our customer research on the draft Business Plan, including the NERA/Traverse acceptability that provides information on the minimum customer willingness to pay for improvements;
3. Crosschecks against Bristol Water and other company’s ODIs from PR14;
4. Cost and wider valuation evidence where available e.g. the EA National Water Environment Benefit study; and
5. Information on Bristol Water’s customers’ relative priorities.

The combination of our primary triangulation exercise with the above sources has resulted in a rich set of information that has informed the performance commitment values. The details of how the values are linked to each performance commitment are set out in Chapters 7, 8 and 9.

The proposed Business Plan costs drive the marginal costs that are used to set the underperformance incentives.

C3 - Delivering outcomes for customers

Our business-planning process has focussed on developing a plan that delivers service at the most efficient cost where our customers prioritise it the most. We have challenged how we deliver the service improvements as well as the costs of delivering to ensure that the incentives are based on efficient costs. This has included:

- Challenging the scope of our plans;
- Optioneering where possible to ensure we are applying the most efficient approach to improving the range of performance commitments;
- Comparison of unit costs to available benchmarks including the findings of the previous CMA referrals; and
- Top down review of our costs using comparative benchmarking models.

We took a long-term view of progress and our approach to delivery to inform our plan development, summarised on our consultation on the long-term ambitions that we developed with customers and stakeholders in “Bristol Water... Clearly”. We optimised the cost and service performance for the triangulated range of customer Willingness to Pay, and then consulted in a developed “slower, suggested and faster” programmes that reflected the low, central and high estimates for this Willingness to Pay. The cost of these programmes and initial customer acceptability testing allowed us to consider individual investments in the context of an efficient integrated package. The research allowed our cost curve for different integrated service packages to be compared to the demand curve from customers as it varied with bill levels (either driven by service levels of efficiency assumptions). This enabled the development of the plan to be overseen by the Bristol Water Board in the context of the customer evidence being reviewed by the Bristol Water Challenge Panel. Both the customer evidence and cost modelling of the “slower, suggested and faster” programmes that were included in our draft Business Plan consultation therefore were directly used in the design of outcome incentives, having established service levels where marginal costs equals marginal benefits for a package of performance commitments.

The incremental totex costs informing the ODIs have been expressed as the revenue requirement in AMP7 which is consistent with the bill impact within the AMP over which the ODIs will apply. The weighted average cost of capital assumed is 2.3%. The incremental revenue is divided by the change in performance it delivers to produce the marginal cost that feeds into the incentive calculation.

The approach for determining the marginal benefits is summarised below. We set out in the description of each performance commitment the approach taken to applying the benefits values to incentive calculations.

Performance Commitment	Approach to Marginal benefits valuation
Water quality compliance	WTP (assumption of a 1 in 1000 chance each year of a do not drink notice on a property, based on the upper range for a 24 hour supply interruption)
Supply Interruptions	WTP (Triangulation)
Mains Bursts	N/A
Unplanned Outage	WTP linked to water restrictions
Risk of severe restrictions in a drought	WTP (Triangulation)
Customer contacts about water quality – appearance	WTP (Triangulation)
Customer contacts about water quality – taste and smell	WTP (Triangulation)
Properties at risk of receiving low pressure	WTP (Mean triangulated)

Performance Commitment	Approach to Marginal benefits valuation
Turbidity performance at treatment works	WTP linked to water restrictions
Unplanned maintenance – non-infrastructure	WTP linked to water restrictions
Population at Risk from Asset Failure	WTP (based on >24hour supply interruption) per 1000 population
Customer measure of experience (C-MeX)	N/A
Developer services measure of experience (D-MeX)	N/A
Percentage of customers in water poverty	N/A
Value for money	N/A
Percentage of satisfied vulnerable customers	N/A
Void properties	Cash flow
Leakage	WTP (Triangulation - lower and median)
Per Capita Consumption (PCC)	WTP (Triangulation)
Meter penetration	WTP (Triangulation) and water saving
Raw Water Quality of Sources	Benefit transfer EA NWEBS - Assumes 10kg/km P
Biodiversity Index	Benefit transfer from habitat study
Waste disposal compliance	N/A - cost based
Water Industry National Environment Programme Compliance	N/A - cost based
Local community satisfaction	WTP and acceptability testing
Abstraction Incentive Mechanism (AIM)	Benefit transfer from abstraction environmental value

Table 6-1 - Approach to Marginal benefits valuation

6.5. Compliance with the PR19 Methodology

For PR19, Ofwat has introduced a greater level of prescription for the design of the incentives than applied at PR14. Ofwat’s intended direction is to increase the exposure of companies to outcomes. For example, for comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance. A summary of the methodology requirements is shown in Figure 6-6:

Stretching targets	Stronger incentives	Incentives design	Comparative performance commitments
<ul style="list-style-type: none"> •Forecast upper quartile challenge for supply interruptions •A 15% reduction for leakage •A full compliance (0 CRI score) for water quality •For all common measures, Ofwat expects the company to consider the forecast upper quartile level 	<ul style="list-style-type: none"> •Ofwat has lifted the previous +/-2% RoRE cap •Averaging actual levels of performance for leakage and per capita consumption •Cap and collar on individual ODIs may be proposed if supported by customers •Deadbands are being discouraged •P10/P90s should be designed to represent realistic high and low scenarios (not extreme possibilities) 	<ul style="list-style-type: none"> •Ofwat's default position is that ODIs should be financial, in-period revenue adjustments •This position could impact financeability and customer bills 	<ul style="list-style-type: none"> •Ofwat has set out ine common measures •Other measures that are reported on to aid transparency, for example Discover Water, are actively encouraged •As comparisons will exist, Ofwat will be able to challenge the company on its targets

Figure 6-6 - PR19 Methodology Requirements on Performance Commitments

Ofwat’s broad expectation is that outcome incentives will amount to +/- 2 to 3% of regulated equity (RORE), excluding the industry-standard measures of service to developers (D-MeX) and customers (C-MeX) for which separate incentives will be set. This range is expected 80% of the time (for each individual performance commitment), so there may be potential rewards and penalties outside of this range for specific measures. Ofwat also specifies that some measures will be “underperformance only” metrics, which includes sufficient weight on defined asset health metrics being penalised, effectively to protect customers from worse performance than past investment.

As part of its methodology, Ofwat set out a ‘baseline’ formula for calculating ODIs, but explicitly recognised that “companies can use other customer evidence to propose changes to the ODI outperformance and underperformance payment rates calculated according to the existing formulas, provided the changes are well justified”¹¹. The baseline formulae are:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

Where p is the customer sharing rate from the wholesale totex menu incentive.

We have applied these formulae to a large number of our incentives using a customer sharing rate of 50% for wholesale incentives and 0% for retail incentives.

¹¹ Ofwat (2017) ‘Delivering Water 2020: Our methodology for the 2019 price review -Appendix 2: Delivering outcomes for customers’, pages 90-93

C3 - Delivering outcomes for customers

We have not applied the formula for our asset health incentives which are underperformance penalties only. For these incentives we have chosen not to apply the Willingness to Pay values, but to base the incentives on a multiple of the marginal costs. The rate we have set using this approach has been compared to the alternative incentive rate using the Ofwat formula. We have deliberately set the incentive rate higher than the alternative rate to ensure that our underperformance penalties protect customer as a minimum but also go beyond this in terms of compensation. Chapters 7, 8 and 9 explain when the standard formula has not been applied.

For three of our performance commitments (supply interruptions, customer contacts appearance, customer contacts taste and smell) we have included a second outperformance incentive rate based on the service levels and analysis underpinning the different Business Plans we tested with customers – slower, preferred and faster. For these performance commitments we have used the upper willingness to pay value, which is the value that would drive the faster plan, to produce a higher incentive rate for levels of service beyond the service level that the faster plan would deliver. This reflects a level of service where Bristol Water was performing at the forecast upper quartile level of performance.

Figure 6-7 below summaries the considerations that must be taken into account.



Figure 6-7 - Approach to developing ODIs

6.6. Enhanced ODIs

Bristol Water is not proposing enhanced outperformance payments or underperformance penalties for any of our PR19 performance commitments. This approach has been taken because of the feedback from our customers from our acceptability testing. We used tiered rates for outperformance in some of our incentives where there is customer WTP for further improvements, but this is in line with our WTP range for further improvements based on our customer research, such as described with the NERA study and draft Business Plan consultation, and is consistent with these investment options and the range of WTP that was tested through this study.

6.7. Caps and collars

Caps have been justified on the grounds that as our performance commitments have an in-period ODI, we have taken into consideration the importance of bill smoothing to reflect customers' preferences.

When combining all data sources from the draft Business Plan consultation we found that there was least support for the faster plan, and broadly a 50/50 split between preferences for the slower and suggested plan. We took from this that our customers did not want bills to be increased by any more than the faster plan, and there was a strong customer preference to deliver the suggested plan, at a lower cost.

The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of caps and collars, as a whole.

We discussed as described earlier the final incentives approach, including general discussion on caps and collars for a number of bundles of incentive types such as asset health, at our customer forum in July 2018. There was a wide range of views, but overall an acceptance that for asset health and measures closely related to investment, penalty caps were appropriate as customers prefer the money to be spent on investment rather than through lower bills. However, the range of incentives, with a mitigation to prevent bill volatility, was strongly supported in all our research and tested comprehensively in the ICS research.

6.8. Deadbands

Ofwat has discouraged the use of deadbands in its PR19 methodology and recognises the impact that these can have on dampening incentives. We have therefore only applied deadbands in certain circumstances.

We have applied underperformance penalty deadbands to our asset health incentives where we have chosen to apply incentive rates that provide greater compensation to customers than the Ofwat formula would allow. This avoids penalising customers that are less customer facing whilst also protecting customers from shortfalls in investment that may take a period of time to arise. For transparency, we prefer deadbands to severe weather exclusions and other ways of mitigating risks for exceptional events outside management control. We have also applied deadbands to compliance penalty only metrics such as waste discharge compliance and CRI. The rationale for the inclusion for these metrics is expanded in Chapters 7, 8 and 9.

For outperformance payments we have applied deadbands where our proposed target is below the upper quartile where this can be assessed. This ensures that we are only incentivised to improve service for customers beyond upper quartile performance.

6.9. Timings and form of incentives

Following discussions with our customers have adopted in-period revenue ODIs as this aligns changes in customer bills with the service they experience. It is also Ofwat's preferred approach. Customers participating in the ODI focus groups opted for a mix of in-period and end-of-period revenue adjustments. In the ICS Acceptability testing, it was also found that 80% customers supported in-period incentives with only 20% opting for end of

period only changes to bills. The separate ODI focus group discussions showed that end of period incentive choices is driven by affordability and budgeting concerns about year on year bill impacts. To manage customers concerns about bill changes we are proposing to cap the application symmetrically at £2.5m (2017/18 prices) in any one year, with the balance rolled forward to subsequent years (or to RCV at 2025). This reflects customer views on risk and bill profiles and is considered further in the financial risk and reward section of our plan, as well as in the acceptability summary in Chapter 3.

6.10. Balancing risk and reward

We have assessed the combined impact of our incentives to understand the range and balance of the overall risk and reward package associated with our incentives. We have sought customers' views on what is an acceptable level of risk and combined this with stakeholder and regulator information to set the overall balance.

As part of our ICS acceptability testing we consulted customers' views on the package of incentives. Customers were showed the range of impact of different incentive packages on their bill and were asked to rank four different packages of incentives in order of preference. The exercise included three packages with different sizes of incentive and a package with no incentives. Whilst a range of views were observed, the most popular package had a range of +/- 1.2% RoRE. The least popular package had a range of +/- 4.0% RoRE. The package with no incentives was, on average, ranked third.

Customers were asked their reasons for selecting their first choice package. Their top three responses for the most popular package were:

- It is important to encourage companies to innovate to keep bills low in the future;
- It is important to encourage companies to meet their obligations; and
- Bills should be reflective of performance and when things are delivered.

6.11. P10/P90 Scenario Analysis

To assess the impact of our incentives we have looked at the performance commitment sensitivity based on a high and low probability of events occurring. We set this analysis out in Section C6 – Financeability, risk & return, and affordability, where we also consider how the individual ranges interact. Our P10 and P90 views have been estimated using a mixture of historical evidence and expert judgement from our investment analysis. We explain in Chapters 7, 8 and 9 how these levels have been estimated for each performance commitment.

6.12. Our Risk and Reward Package

Ofwat's broad expectation is that outcome incentives (for the P10 to P90 range) will amount to +/- 2 to 3% of regulated equity (RORE), excluding the industry-standard measures of service to developers (D-MeX) and customers (C-MeX) for which separate incentives will be set. This range is expected 80% of the time (for each individual performance commitment), so there may be potential rewards and penalties outside of this range for specific measures. Ofwat also specifies that some measures will be "underperformance only" metrics, which includes sufficient weight on defined asset health metrics being penalised, effectively to protect customers from worse performance than past investment.

C3 - Delivering outcomes for customers

Our evidence for the individual ODIs and risk and return balance as a whole results in an overall ODI package with an overall range (excluding C-MeX and D-MeX) of -4.0% to +2.1% and -2.3% to +1.1% for the central 80% confidence range (looking at individual metrics). The impact of each performance commitments' ODIs are discussed in Chapters 7, 8 and 9 but the table below summarises our position.

ODI Package	Under performance as % of RORE	Out performance as % of RORE	Under performance £m (average) p.a.	Out performance £m (average) p.a.
Maximum range	-5.1%	3.2%	-10.8	6.7
Range excluding C-MeX and D-MeX	-4.0%	2.1%	-8.5	4.5
10% to 90% probability (excluding C-MeX and D-MeX)	-2.3%	1.1%	-4.9	2.3
Range excluding asset health and C-MeX / D-MeX	-1.9%	1.1%	-4.0	2.2
PR14 range (12/13 prices) ¹²	-3.2%	0.6%	-10.9	3.3

Table 6-2 - RoRE range of ODI Packages

The total incentive range across the different performance commitments is illustrated in Figure 6-8 - below (excluding C-MeX and D-MeX). This also shows the stretching outperformance and underperformance payments which are unlikely to operate in practice.

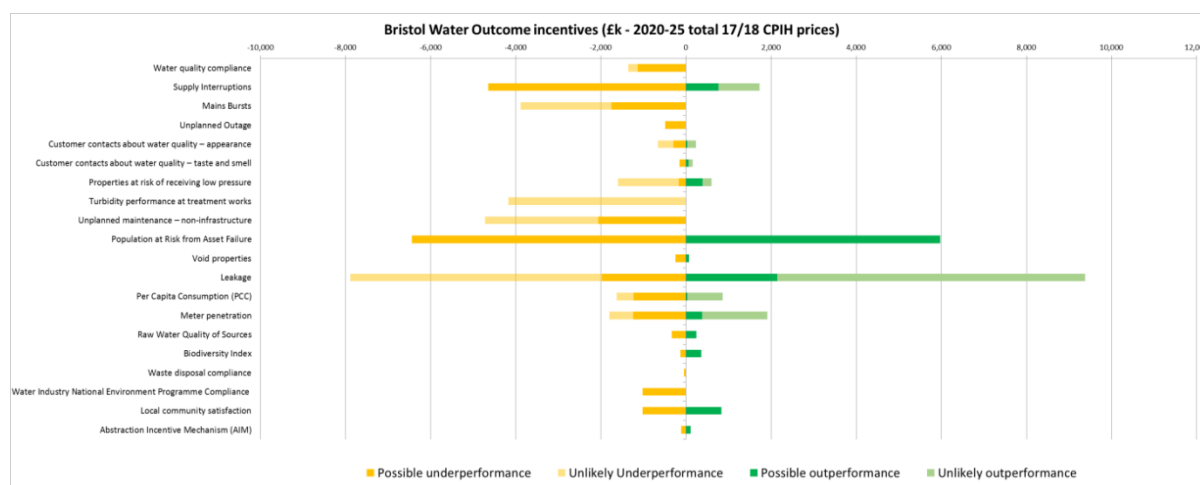


Figure 6-8 - Incentive range by measure

This range provides a significantly more even spread of potential rewards and penalties compared to the incentives currently in operation, as shown in Figure 6-9 - :

¹² PR14 RORE lower due to RCV rather than revenue impact.

C3 - Delivering outcomes for customers

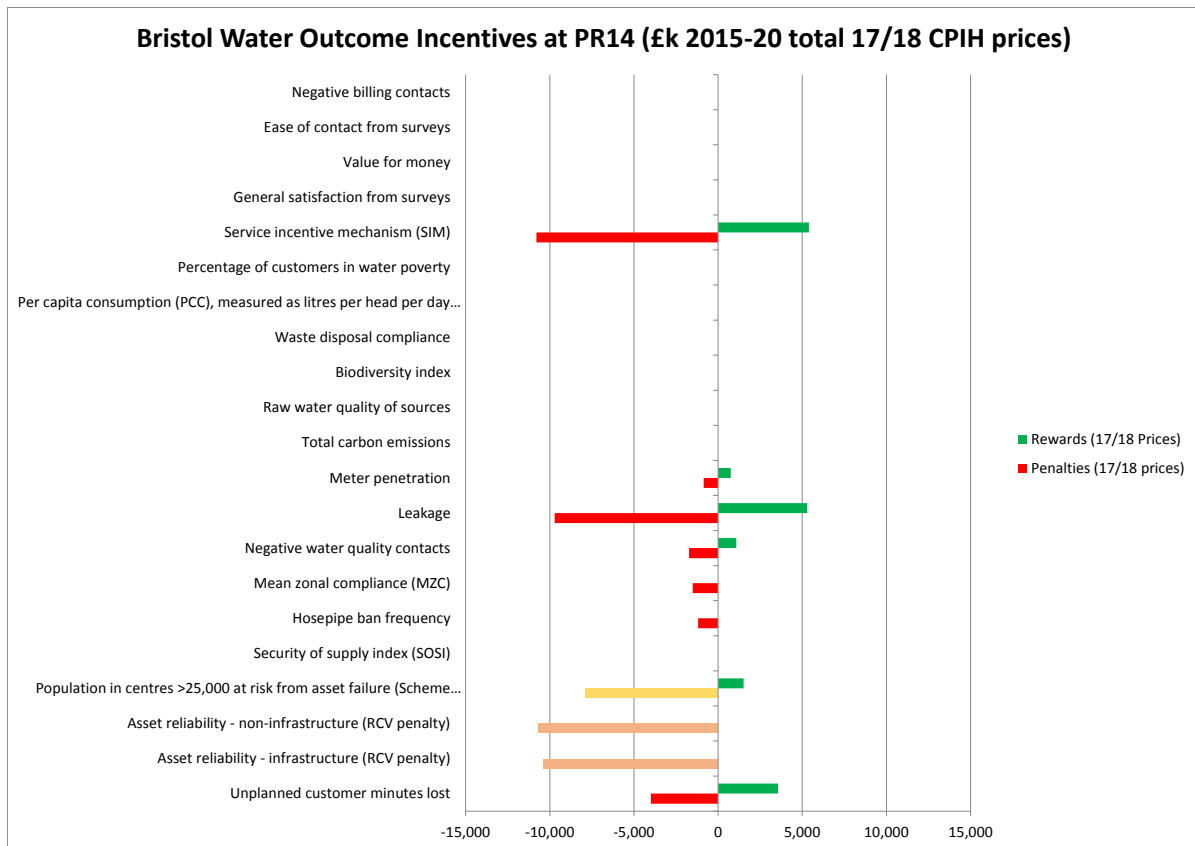


Figure 6-9 - PR14 Outcome Incentives

Analysis of the ODIs set at PR14 for other companies also shows that our PR19 proposals provide a more balanced package, as shown in Figure 6-10 - :

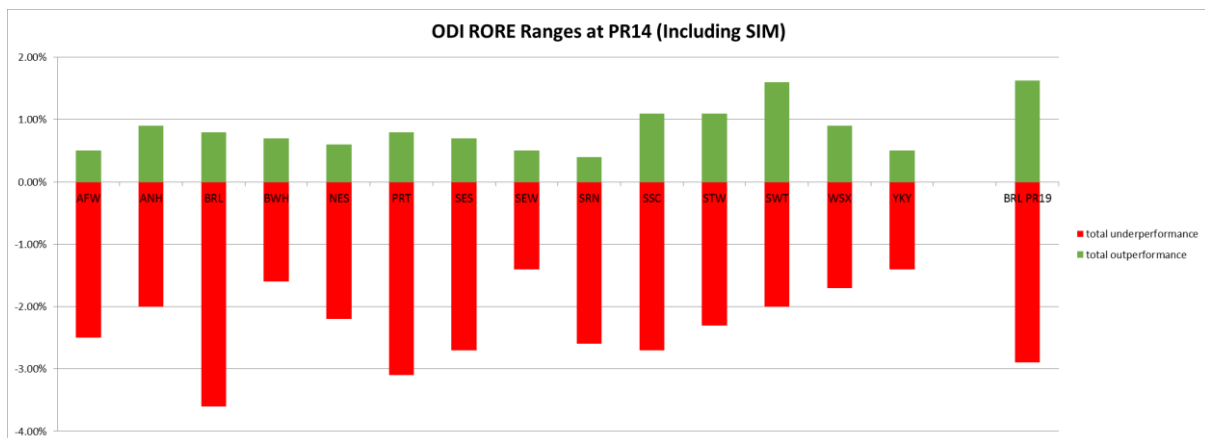


Figure 6-10 - PR14 ODI RORE Ranges¹³

¹³ These are the ODI ranges calculated before the impact of the RORE cap was applied, to allow consistency with the BW PR19 figures presented

C3 - Delivering outcomes for customers

The contribution of each component to the central and full RORE ranges is shown in Figure 6-11 - 45 and Figure 6-12 - 46 below:

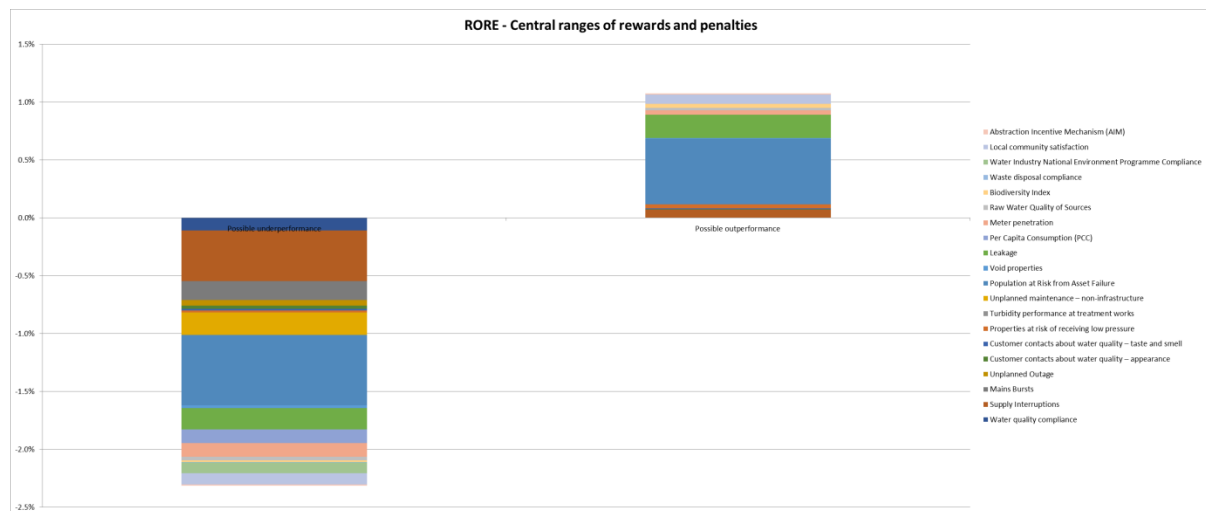


Figure 6-11 - ODI impact on RORE (central range)

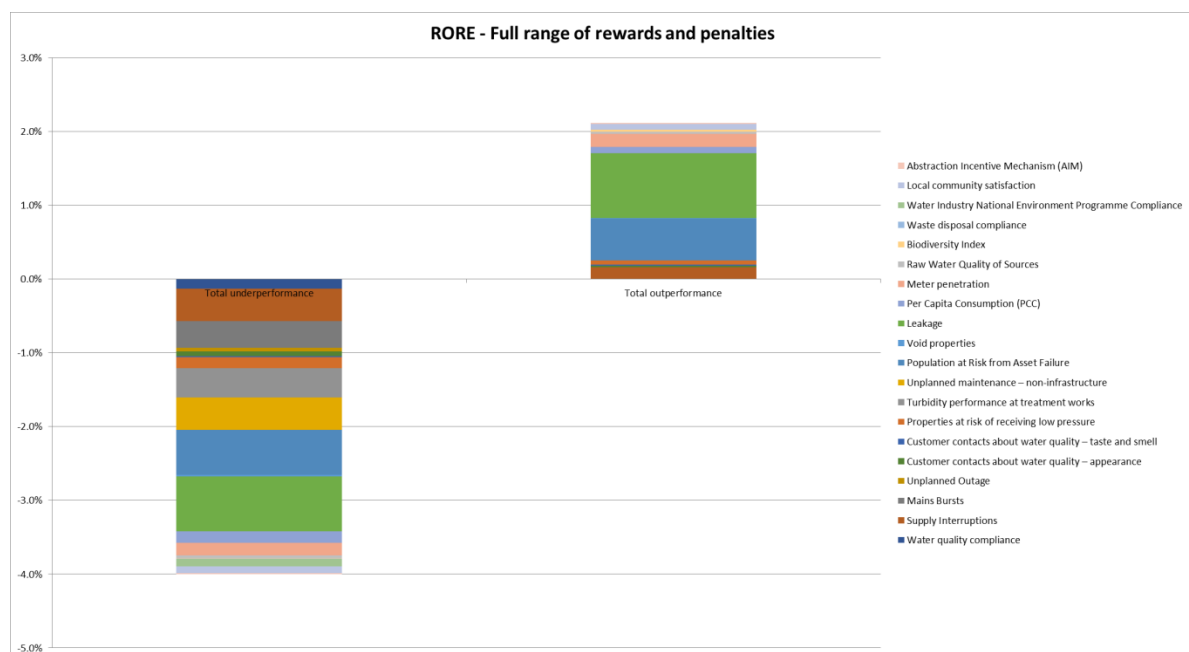


Figure 6-12 - ODI impact on RORE (full range)

6.13. Summary of Proposed ODIs

The table below summaries our proposed ODIs. It summarises each performance commitment, the type, form and timing of incentive. It takes into account the views expressed by customers at the working group, as well as our regulatory duties. We have also added a further column highlighting additional commentary where appropriate in light of the feedback we have received from Ofwat in response to our May submission.

As we suggested in our initial submission, we have adjusted our approach to AIM and updated our local community satisfaction measured definition marginally.

C3 - Delivering outcomes for customers

Performance Commitment (PC)	ODI Type	ODI Form	ODI Timing	Commentary
Water quality compliance	Under	Revenue	In-period	
Supply interruptions	Out and under	Revenue	In-period	
Mains bursts	Under	Revenue	In-period	Asset health measure; decision taken not to propose outperformance payments as it is not being targeted with customer support for improvement
Unplanned Outage	Under	Revenue	In-period	Asset health measure; decision taken not to propose outperformance payments as it is not being targeted with customer support for improvement
Risk of severe restrictions in a drought	Reputational	-	-	New metric – data is not sufficiently mature to provide sufficient confidence in target setting. Ofwat has suggested in its methodology statement that this is appropriate to set as reputational and our customers at the focus group agreed with this position
Customer contacts about water quality – appearance	Out and under	Revenue	In-period	
Customer contacts about water quality – taste and smell	Out and under	Revenue	In-period	Our customers at the focus group recommended this be set a reputational ODI. At PR14 a majority of companies, as well as Bristol Water, set a financial ODI for this metric. As this measure reflects both asset health and customer satisfaction, we feel that it is appropriate to again set a financial ODI for this metric
Properties at risk of receiving low pressure	Out and under	Revenue	In-period	Although this is an asset health measure outperformance payments have been proposed as it is being targeted because there is customer support for improvement
Turbidity performance at treatment works	Under	Revenue	In-period	Asset health measure; decision taken not to propose outperformance payments as it is not being targeted with customer support for improvement

C3 - Delivering outcomes for customers

Performance Commitment (PC)	ODI Type	ODI Form	ODI Timing	Commentary
Unplanned maintenance – non-infrastructure	Under	Revenue	In-period	Asset health measure; decision taken not to propose outperformance payments as it is not being targeted with customer support for improvement
Population at risk from asset failure	Out and under	Revenue	In-period	
Customer measure of experience (C-MeX)	Out and under	Revenue	In-period	
Developer services measure of experience (D-MeX)	Out and under	Revenue	In-period	
Percentage of customers in water poverty	Reputational	-	-	A financial adjustment would be counter-intuitive as linked to bill levels
Value for money	Reputational	-	-	A financial adjustment would be counter-intuitive as linked to bill levels. In addition, CCWater support ¹⁴ value for money as a reputational ODI
Percentage of satisfied vulnerable customers	Reputational	-	-	Measure of vulnerability may not be appropriate for financial incentive, e.g. as includes element of social tariffs. As this is a new metric data is not sufficiently mature to provide sufficient confidence in target setting. In addition, CCWater support ¹⁵ the percentage of customers satisfied with vulnerability assistance as a reputational ODIs
Void properties	Out and under	Revenue	In-period	Definition finalised following early submission
Leakage	Out and under	Revenue	In-period	
Per capita consumption (PCC)	Out and under	Revenue	In-period	
Meter penetration	Out and under	Revenue	In-period	
Raw water quality of sources	Out and under	Revenue	In-period	Our customers at the focus group recommended this be set a reputational ODI. Their objection however is based on the metric's measurement at PR14, which has been revised for PR19

¹⁴ <https://www.ccwater.org.uk/wp-content/uploads/2017/12/Affordability-think-piece-by-Andy-White.pdf>

¹⁵ <https://www.ccwater.org.uk/wp-content/uploads/2017/12/Affordability-think-piece-by-Andy-White.pdf>

C3 - Delivering outcomes for customers

Performance Commitment (PC)	ODI Type	ODI Form	ODI Timing	Commentary
Biodiversity Index	Out and under	Revenue	In-period	Our customers at the focus group recommended this be set a reputational ODI. Their objection was based on a concern over transparency of the measurement. At PR19 we will be introducing a new layer of assurance for this metric; accredited experts will review our assessments
Waste disposal compliance	Under	Revenue	In-period	Based on Environment Agency advice
Water industry national environment programme (WINEP) compliance	Under	Revenue	In-period	Based on Environment Agency advice
Abstraction Incentive Mechanism (AIM)	Out and under	Revenue	In-period	Consultation with local Environment Agency to establish a possible (non-standard) AIM location
Local community satisfaction	Out and under	Revenue	In-period	Definition finalised following early submission

Table 6-3 - Proposed ODIs

In addition, we have maintained in-period incentives, but propose capping the application symmetrically at £2.5m (2017/18 prices) in any one year, with the balance rolled forward to subsequent years (or to RCV at 2025). This reflects customer views on risk and bill profiles and is considered further in the financial risk and reward section of our plan, as well as in the acceptability summary above.

We have included as Appendix 5 to this document a table of incentive rates in £m to 6dp as set out in business plan table App1.

In Chapters 7, 8 and 9 our performance commitments are grouped according to the outcomes we identified in Chapter 4. We describe how each commitment has been developed, including the regulatory drivers and the customer evidence that helped shape it. We describe how we set a stretching target for each commitment, based on historic and comparative data that sets a benchmark. We present our AMP7 targets as well as our longer-term projections (up until 2045). We also set out the incentives that have been adopted, which the Company will be tested against in the reporting years of PR19 (2020-25). Finally, we discuss the WTP and design of the incentives for each performance commitment.

7. Detailed evidence by performance commitment – Excellent Customer Experiences

7.1. Outcome - Excellent Customer Experiences

We transform our customer service to provide an excellent experience at every single interaction with you and your communities. We provide services which are rated by our customers to be within the top 10 of all UK companies.



7.2. Customer Measure of Experience (C-MeX)

7.2.1. Definition



We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). The customer measure of experience (C-MeX) is a mechanism to incentivise water companies to provide an excellent customer experience for residential customers, across both the retail and wholesale parts of the value chain.

7.2.2. Customer views

Two years of independent surveys by the Institute of Customer Service show that our customer service is better than average for a utilities company, however we know from our own data that there is more we can do. We know that 97% customers who return our feedback cards after work is carried out near their homes are satisfied with the service. However, there are some areas where customers who contact us are less likely to feel their call is resolved - and we monitor closely the number of customers who have to contact us more than once to get their issue resolved. In addition, our customer insight shows that customer satisfaction and the speed of resolution go hand-in-hand, for example issues relating to transactional billing or appointment queries have high satisfaction whereas customers calling about leaks or pressure often result in a lower satisfaction as answers may not be instantly available.

Our ongoing contact data shows that those customers who have expressed negative experiences often explain that this is due to poor communication and lack of regular updates. In addition, customers frequently express the need for fuller explanations and more information to answer and resolve their query.

Our customers consider traffic disruption to be an important part of the customer experience. When we asked our customer online panel, 38% of respondents had been affected by our work due to road traffic disruption – a much higher figure than anything relating to their water supply. Our panel gave mixed views on whether traffic disruption should be something customers contribute to mitigating, when we asked our online panel 69% of customers said they would not be willing to see increased bills if roads could be reopened more quickly. However, when we asked about avoiding traffic disruption in other surveys and reviewed evidence from other sectors we found a positive value of about £18.70 per hour avoided.

Our stakeholders place a high value on Bristol Water as a local water company that is responsive, collaborative and innovative, and part of a community of organisations in the Bristol area that work together.

As outlined above, we used our ongoing customer contact data, as well as individual pieces of research, to understand customer views on the service they experience. When we asked customers specifically about customer experience as part of developing our Business Plan we found that it was a lower priority for investment than other elements, such as reliability. Many customers, including our future customers, stated that they felt they received an appropriate level of service currently, and so didn't place a high value on further investment in this area.

Relevant research includes:

- Customer forum group (A3);
- Online Customer Panel survey (A4);
- Customer experience of attributes review (B4);
- Focus group on performance commitments (B14);
- Business Plan Options deliberative events (B24);
- Business Plan Options focus groups with seldom-heard customers (B25);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);
- Pre-acceptability testing (B31);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

Although in the focus groups customers suggested that a penalty-only incentive would be appropriate, incentives for this metric will be set by Ofwat and so we did not adopt our customers' recommendation.

7.2.3. Regulatory requirements

As this is a new performance commitment for PR19, we do not currently have committed service level targets. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. This is not traditionally a metric that either we or the rest of the industry has reported on, but the current industry measure of customer experience, the Service Incentive Mechanism (SIM) has been used as a proxy measure for comparative purposes.

Ofwat intends to pilot the incentive mechanism in 2018-19 and the final design of the performance commitment will be informed by the pilot. Ofwat has confirmed that it will produce final guidance for the incentive mechanism by March 2020. As a result, we have not applied any of the approaches to setting committed performance levels that we have used for other performance measures, because unlike its predecessor, SIM, C-MeX will link financial incentives to the performance level of the best performing companies in all sectors. However, we can still use SIM as a proxy to give an indication as to where historically Bristol Water sits compared to the rest of the industry; we have historically been performing at or above the upper quartile level of performance. The exception to this trend is our performance in 2017-18, which was significantly impacted by additional bursts and supply interruptions - caused by exceptional weather events.

Service Incentive Mechanism (SIM) – Historical Information		2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Bristol Water	Company Performance	85	86	85	85	85	86	83
Industry	Average	74	78	82	82	82	84	84
	Upper quartile	78	84	85	85	85	86	87
	Frontier	85	88	88	88	88	88	88

Table 7-1 - Service Incentive Mechanism (SIM) – Historical Information

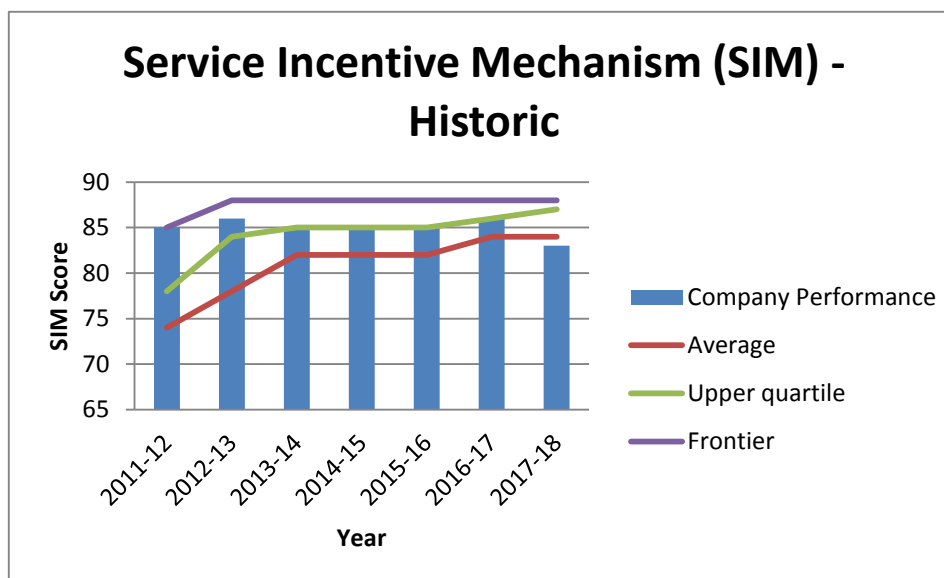


Figure 7-1 - Service Incentive Mechanism (SIM) – Historical Information

7.2.4. Allocation to price control

The performance commitment has been allocated to the Residential Retail price control in line with the guidance provided within the PR19 methodology, because it measures customer experience.

7.2.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’ published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. As there was limited information available at the time of publication of that document, we framed our long-term ambition in the context of proxy measures, such as the Service Incentive Mechanism (SIM) and the UKCSI.

We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. We used UKCSI as a proxy for a range of customer experience improvements in our plan, which ultimately for part of CMEX incentives. However, the investment goes beyond just CMEX to other performance commitments where we want to meet individual customer needs, particularly as part of resilience in moments of vulnerability and during operational incidents.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
C-MeX (proxy was UKCSI)	UKCSI	Top performing water company	Top performing water company	Top performing utility company	Top 10 of all companies	Top 10 as UKCSI
Forecast increase to the average bill from additional investment £			0	1	6	N/A

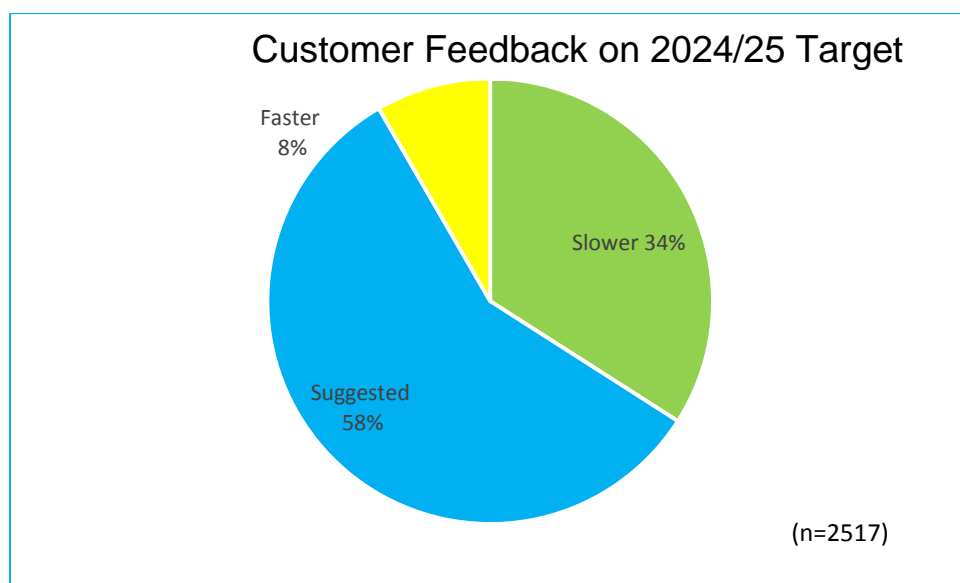
Table 7-2 - Summarised Business Plan

7.2.6. Draft Business Plan Consultation feedback

When we talked to customers about customer experience as part of our consultation they often made general comments about the importance of good customer service and supported the suggested plan. Some customers questioned the faster target, arguing that Bristol Water shouldn't be compared with "FTSE100" companies or suggesting that being top is more valued by the company than customers. Others questioned whether it is necessary to pay more for customer service to improve, seeing it as an internal Bristol Water issue. Social Renters, Young Urban Renters and Thirsty Empty Nesters were all more likely to select the slower improvement plan.

The majority of customers chose the suggested plan, despite the fact that the slower plan would add no cost to the customer bill. This shows that customers are willing to pay a small amount for improvements in this area. However, it should be noted that this formed part of the cheapest of the three outcome packages; and previous conversations have shown that customers do not place a high value on customer experience.

For Bristol Water, with excellent services already in customer perceptions, we continued with the suggested plan, mindful that many customers see great customer service as a normal business activity.



Final plan acceptability testing (which included comparative information on bills and performance) identified 68% support for the proposals for this service area, with only 3% of people disagreeing.

7.2.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

C-MeX - Summary					
Unit	2019/20 Baseline	2024/25 Target	ODI	Outperformance Payment (£m) - total 2020-25	Underperformance Penalty (£m) - total 2020-25
C-MeX score	*	*	Out and Under	10.924	-10.924
				Payment (£m) within P90- total 2020-25	Penalty (£m) within P10- total 2020-25
				5.462	-5.462

*The final incentive and target design will be decided by Ofwat. This estimate is based on 12% of residential retail revenues, with 50% assumed to be within P10/P90 probability given the good historic performance suggesting 6–12% penalties are unlikely, and with complaint numbers meaning based on the current methodology it may not be possible to assume 6-12% rewards happening within a five year period, although our ambition based on UKCSI ratings may allow this level of performance. However, we propose capping this level of reward (£2.5m 17/18 prices reward or penalty annually based on customer research and financial viability).

7.2.8. Costs, Benefits and Incentive Rates

Incentives for C-MeX are based on Ofwat's PR19 methodology statement, rather than on our customers' WTP. Ofwat has said that incentives will be based on the company's annual ranking and compare performance across the industry:

- the top three performers would receive a performance payment of up to 1.2% of residential retail revenues (1.2% annually holds the incentive at the same level as the SIM of 6% of residential retail revenues over 5 years);
- higher performance payments of up to 2.4% of residential retail revenues would only be available if a company is within the top three performers and performs at or above the cross-sector threshold (2.4% annually equates to 12% of residential retail revenues over 5 years); and
- the poorest performers would receive a penalty of up to 2.4% of residential retail revenues annually, (2.4% annually holds the incentive at the same level as the SIM of 12% of residential retail revenues over 5 years).

The P10 and P90 probabilities for C-MeX will also be based on Ofwat's methodology.

The table and graph below shows our assumptions on the range of out- and underperformance payments for C-MeX each year and for AMP7 in total.

C3 - Delivering outcomes for customers

C-MeX	Average Annual £m	Total AMP7 £m	RORE %
Outperformance payment total	2.185	10.923	1.0
Outperformance payment (outside P90)	1.092	5.462	0.5
Outperformance payment	1.092	5.462	0.5
Underperformance penalty total	-2.185	-10.923	-1.0
Underperformance penalty (outside P10)	-1.092	-5.462	-0.5
Underperformance penalty	-1.092	-5.462	-0.5

Table 7-3 - C-MeX range of incentive payments

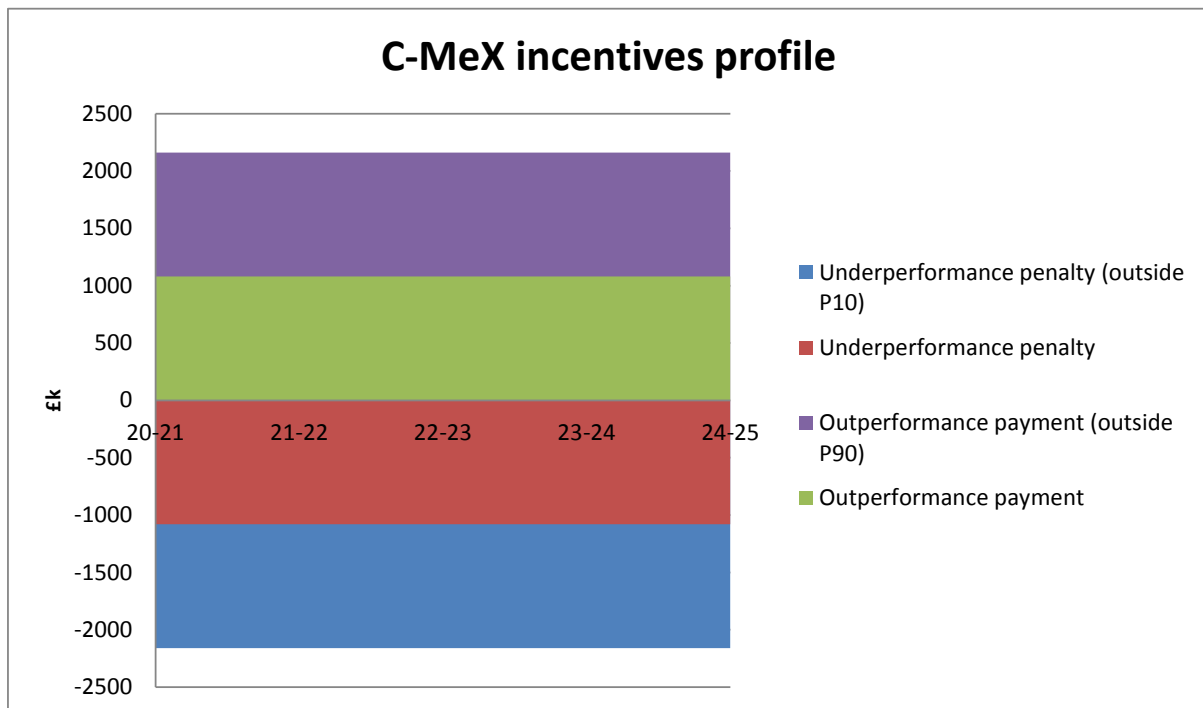


Figure 7-2 - C-MeX Incentive Profile

The performance commitment has been allocated to the Residential Retail price control, because Ofwat has instructed all companies to adopt this allocation.

7.2.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. However as the final design of C-MeX has not yet been published, long-term projections were not included for this performance commitment.

7.3. Developer Measure of Experience (D-MeX)

7.3.1. Definition



We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). The developer services measure of experience (D-MeX) is a mechanism to incentivise water companies to provide an excellent customer experience for developer services (new connections) customers. These customers include small and large property developers, self-lay providers (SLPs), and those with new appointments and variations (NAVs).

7.3.2. Customer views

Our annual stakeholder survey in 2017 told us that 85% of our business customers think we provide a good or excellent service, and 69% think that we are good to do business with. Developers and SLPs (Self Lay Providers) are positive about creating a closer working relationship and value more regular engagement and communication through our Developer Days as well as face-to-face meetings. Discussions have found that improvements could be made to the application process and they welcome the introduction of a new Developer & SLP portal to manage applications and other works.

When we ask our domestic customers about how we work with developers they rarely have much knowledge about what we do, and so don't see it as a priority. One area where customers do see a role is in working with developers to implement water efficiency measures in new builds.

We have the following mechanisms to talk to our customers, stakeholders, and the developers and Self-Lay Providers we work with:

- Stakeholder survey (A8);
- Market engagement days (A9);
- Business Plan open consultation (B30);
- WRMP Demand Reduction Deliberative events (B23); and
- Focus groups on performance commitments (B14).

Although in the focus groups customers suggested a penalty-only incentive, as the incentives for this metric will be set by Ofwat we cannot adopt our customers' recommendation.

7.3.3. Regulatory requirements

As this is a new performance commitment for PR19, we do not currently have committed service level targets. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. This is not traditionally a metric that either the company or the rest of the industry has reported on, but the industry does report on a Water UK Developer Services measure. As a result the company has not committed itself to any of the approaches to setting committed performance levels that Ofwat has suggested.

7.3.4. Allocation to price control

C3 - Delivering outcomes for customers

This performance commitment has been allocated to the Water Network Plus control, in line with the guidance in the PR19 methodology - as Developer Services are within the Network Plus price control.

7.3.5. Draft performance commitment, targets and long-term ambition

We included information, in our long-term ambition document 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. As there was limited information available at the time publication, we framed our long-term ambition in the context of a proxy measure, the Water UK compliance measure for Developer Services.

We also included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
D-MeX	D-MeX score	N/A (new measure)	N/A	TBC	N/A	100%
Forecast increase to the average bill from additional investment			N/A	N/A	N/A	N/A

Table 7-4 - D-Mex - Draft Business Plan Proposals

7.3.6. Draft Business Plan Consultation feedback

We did not explicitly ask customers about their views on this performance commitment. Developers currently do not seem interested in this mechanism, preferring high service standards and clear pricing. However, it is an important regulatory incentive and we adopt it in line with Ofwat's methodology.

7.3.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

D-MeX - Summary					
Unit	2019/20 Baseline	2024/25 Target	ODI	Outperformance Payment (£m) - total 2020-25	Underperformance Penalty (£m) - total 2020-25
D-MeX score	*	*	Out and Under	0.348	-0.695
				Payment (£m) within P90- total 2020-25	Penalty (£m) within P10- total 2020-25
				0.348	-0.695

Table 7-5 - D-Mex Final Performance Commitment

C3 - Delivering outcomes for customers

*The final incentive design will be decided by Ofwat. We assess, given the uncertainty, that the full range of incentives are within the P10/P90 range.

7.3.8. Costs, Benefits and Incentive Rates

Incentives for D-MeX are based on Ofwat's PR19 methodology statement, rather than on our customers' WTP. Ofwat has said that the financial incentive for D-MeX will be asymmetric: performance payments will be up to 2.5%, and performance penalties will be up to 5%, of a company's annual developer services revenue.

The P10 and P90 probabilities for D-MeX will also be based on Ofwat's methodology.

The table and graph below show our assumptions on the range of out- and underperformance payments for D-MeX each year and for AMP7 in total..

D-MeX	Total Average Annual £m	Total AMP7 £m	RORE %
Outperformance payment total	0.070	0.348	0.0
Underperformance penalty total	-0.139	-0.695	-0.1

Table 7-6 - D-Mex Calculation of Incentive Rates

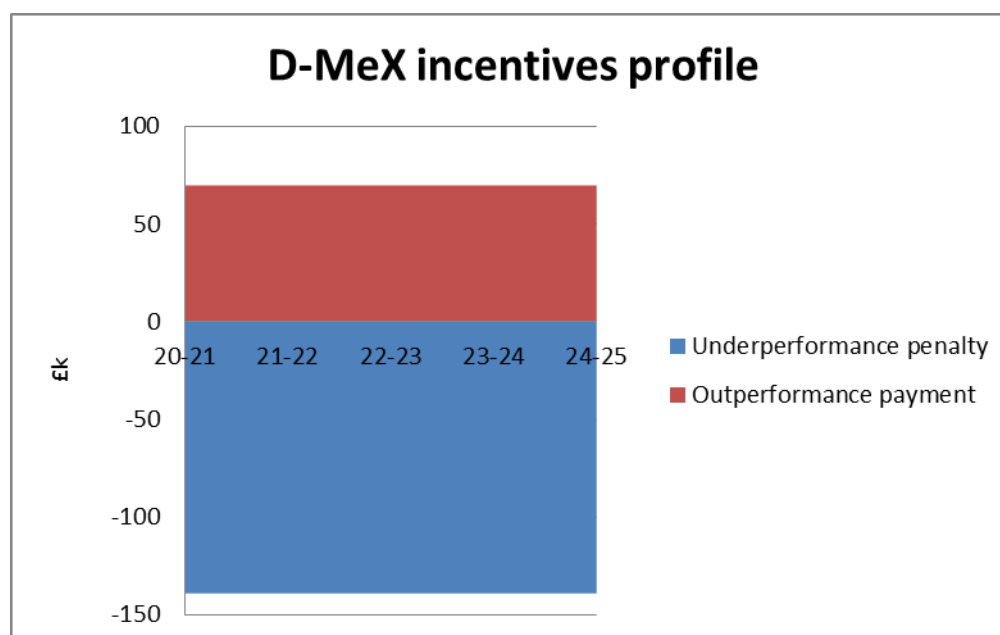


Figure 7-3 - D-MeX Incentives Profile

The performance commitment has been allocated to the Water Network Plus price control in line with the PR19 methodology requirement, as Developer Services are within the Network Plus price control.

7.3.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. However as the final design of D-MeX has not yet been published, long-term projections were not included for this performance commitment.

7.4. Percentage of customers in water poverty

7.4.1. Definition



We monitor our performance in helping those customers on the lowest incomes and experiencing the most serious financial difficulties by calculating and tracking the percentage of customers in 'water poverty'. This is defined as the percentage of customers within our supply area for whom their water bill represents more than 2% of their disposable income, defined as gross income less income tax. This measure allows us to understand the impact of our bills on our customers. To calculate this we use a population analytics model to estimate the gross percentage of customers in water poverty, and then deduct those customers who we support through our Assist social tariff.

Using this measure, we are able to offer advice, assistance schemes such as Restart and Water Direct and discounted tariffs, known as 'social tariffs' (including our Assist tariff, WaterSure Plus and Pension credit tariff) to customers who fall within this category. This measure then also allows us to evaluate the success of our tariffs and assistance schemes for customers who are experiencing difficulty paying their bills.

Although Ofwat had no specific feedback on the definition we submitted as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission, the text of this definition has been amended, in order to clarify how this performance commitment is impacted by the company's social tariffs. The amended definition can be found in full in Appendix 3.

7.4.2. Customer views

We recognise that affordability is a major concern for some of our customers; we were one of the first water companies to introduce a company social tariff. We know from our annual survey and other studies that customers think keeping bills affordable for all is important however customers consistently rate our performance on affordability low.

In 2016-17, a total of c. 25,500 customers (5.8% of households) are receiving assistance from debt management or a special tariff. Numbers receiving assistance has increased over last 3 years, with the largest proportion on Water Direct. In addition, when we conducted our customer segmentation, we noted that many of our younger customers, and especially those in rented accommodation, were only just managing to make ends meet, or were running into debt.

We met around 30 customers on our social tariffs early in 2017 to find out what support was most important to them. These customers had multiple reasons for financial difficulty, from employment issues, to health conditions and family circumstances. We found that many were accustomed to having to challenging relationships with organisations in general, and that they had low expectations of being proactively offered help and support. We found that once customers had spoken to us about receiving financial assistance, they were positive about the experience, and found the signing up process straight forward. However both stakeholders and customers think that we could be doing more to raise awareness about the help available.

Following up on this we asked a research agency to review how many of our customers might be eligible for support – this told us that we are not currently reaching as many customers in vulnerable circumstances as we should. When we talked to other groups of

C3 - Delivering outcomes for customers

customers about affordability and bill increases, many customers were concerned that while they may be able and willing to pay higher bills, others may not be able to, and believed that should be taken into account. They used the idea of “fairness” when talking about affordability, and saw water as a universal right that nobody should feel they couldn’t afford. When we asked customers about different performance commitments around affordability, the % of customers in water poverty was the most frequently chosen as customers felt it was a useful, objective measure that encouraged Bristol Water to support those in financial need. However in other cases customers questioned whether Bristol Water could really influence this and preferred a measure that related directly to action the company could take (like vulnerability assistance).

We have developed a separate vulnerability strategy to fully consider how best we support those customers who need extra assistance. This strategy has informed our Business Plan, and takes into account the following pieces of research:

- Customer priorities focus groups (B5);
- Customers in vulnerable circumstances (B13);
- Customer forum Business Plan options research (A3);
- Business Plan options research (B24 and B25);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

7.4.3. Regulatory requirements

This is a bespoke performance commitment unique to Bristol Water and is a continuation of an AMP6 performance commitment of the same name. In its final methodology Ofwat stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

As this is a bespoke performance commitment unique to Bristol Water, comparative information is not available. We have therefore considered our historical performance to date when proposing our future targets. Following a change to the status of the Assist social tariffs, this has reduced the customers in water poverty for 17/18 to zero. However, with the introduction of Universal Credit, we are forecasting that the metric may return to our target by 2020.

Customers in Water Poverty – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	2.0	2.0	1.9
	Company Performance	2.5 ¹⁶	0.4	0.9	0

Table 7-7 - Customers in Water Poverty – Historical Information

¹⁶ The 14/15 value is not a reported actual; it is the calculated baseline (for AMP6) for this performance commitment based on extrapolation of the 12/13 figures

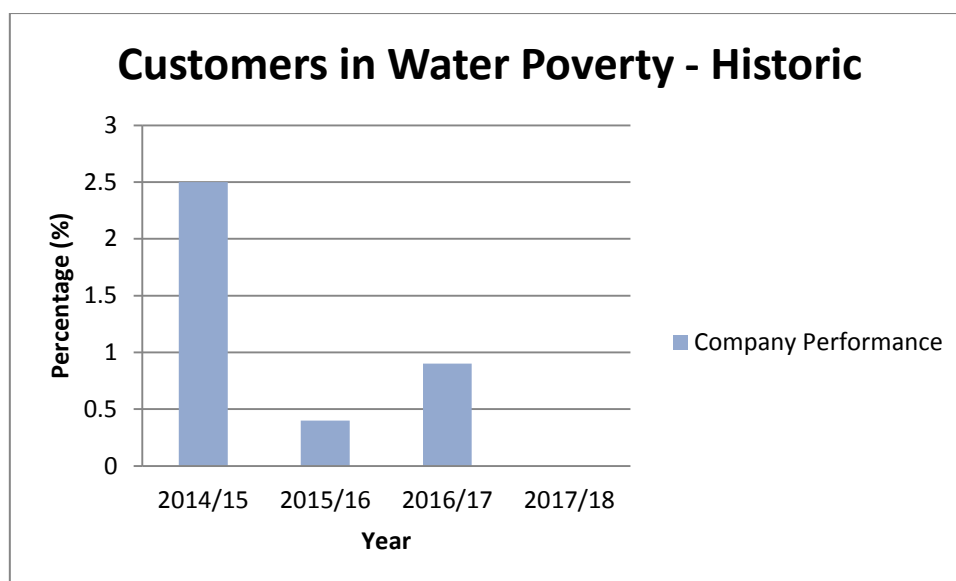


Figure 7-4 - Historic performance against Customers in Water Poverty measure

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	N/A	A cost/benefit analysis was not undertaken for this measure, but the cost/benefit of our assistance measures is set out in table App4		
Comparative information	N/A	Whilst other companies provide social tariffs and have measures of their success, there is no directly comparable measure in this area		
Historical information	1	This is our average historical performance since 2014/15. This target was selected for inclusion within the draft Business Plan	✓	
Minimum improvement	1.4	A 20% improvement rate on our PR14 target would result in this target		
Maximum level attainable	0	This target assumes Bristol Water could achieve our best year's performance to date (2017/18)		✓
Expert knowledge	N/A	Not applicable as not a measure of asset health		

Table 7-8 - Customers in Water Poverty – approaches considered for setting performance commitment

7.4.4. Allocation to price control

The performance commitment has been allocated to the Residential Retail price control, because our support for vulnerable customers with affordability issues is carried out as a retail activity.

7.4.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document, 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We explained in this document that we wanted bills to increase by less

C3 - Delivering outcomes for customers

than inflation over 2020-25 (but not if this would mean significant risk to service, resilience or to result in higher bills for future customers).

We also included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Percentage of customers in water poverty	%	1.8	N/A	1.0	N/A	0.5
Forecast increase to the average bill from additional investment			N/A	0	N/A	N/A

Table 7-9 - Customers in Water Poverty – Performance Commitments

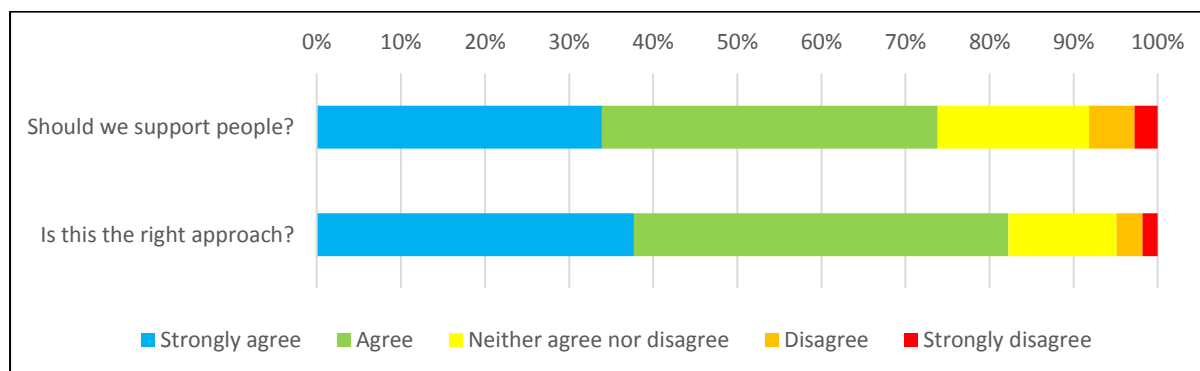
7.4.6. Draft Business Plan Consultation feedback

When we talked to customers about our social tariffs as part of our consultation 74% agreed that we should support people who cannot afford their bill and 82% said we should encourage customers to pay what they can afford towards their bill.

Customers are more likely to agree to maintaining the currently level of cross-subsidy as either of the two alternative options would see their contributions increase. Nonetheless, more than 50% of customers agree with an increase to support 75% of those who could potentially benefit – this is particularly true for future, affluent and rural customers. On this basis, we recommend increasing the number of people who benefit from social tariffs from 50% to 75%, subject to further customer research. If it could be delivered at a lower cost then it is likely there would be greater customer support.

“Safely affluent” customers and “comfortable families” are more likely to choose the higher option (100%), whilst “thirsty empty nesters” have a lower level of support for all options.

(n=2394)



(n=2394)

C3 - Delivering outcomes for customers

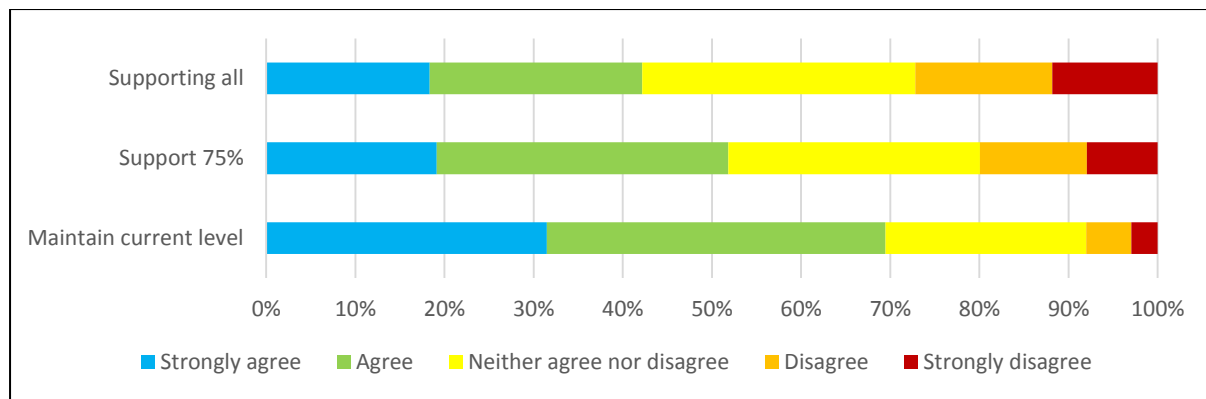


Figure 7-5 - Customer views on draft Business Plan proposals

Final plan acceptability testing (which included comparative information on bills and performance) identified 77% support for the proposals for this service area, with only 3% of people disagreeing.

7.4.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Customers in Water Poverty - Summary			
Stretch	2019/20 Baseline	2024/25 Target	ODI
Max level attainable	0.0	0.0	Reputational

Table 7-10 - Customers in Water Poverty – Summary

As this has a reputational ODI there is no impact on our customers' bills. But effective dissemination of our performance information will be needed to increase the reputational impact of our performance commitment. There is a strong reputational incentive to achieve or outperform our performance commitment levels because we have to report our performance in our Annual Performance Reports. The reports are publicly available on our website, which enable our customers and the Bristol Water Challenge Panel to challenge us on our performance. We also report on our performance on an interactive performance webpage (as shown below), where our customers can learn about our reputational and our financial performance commitments.

C3 - Delivering outcomes for customers

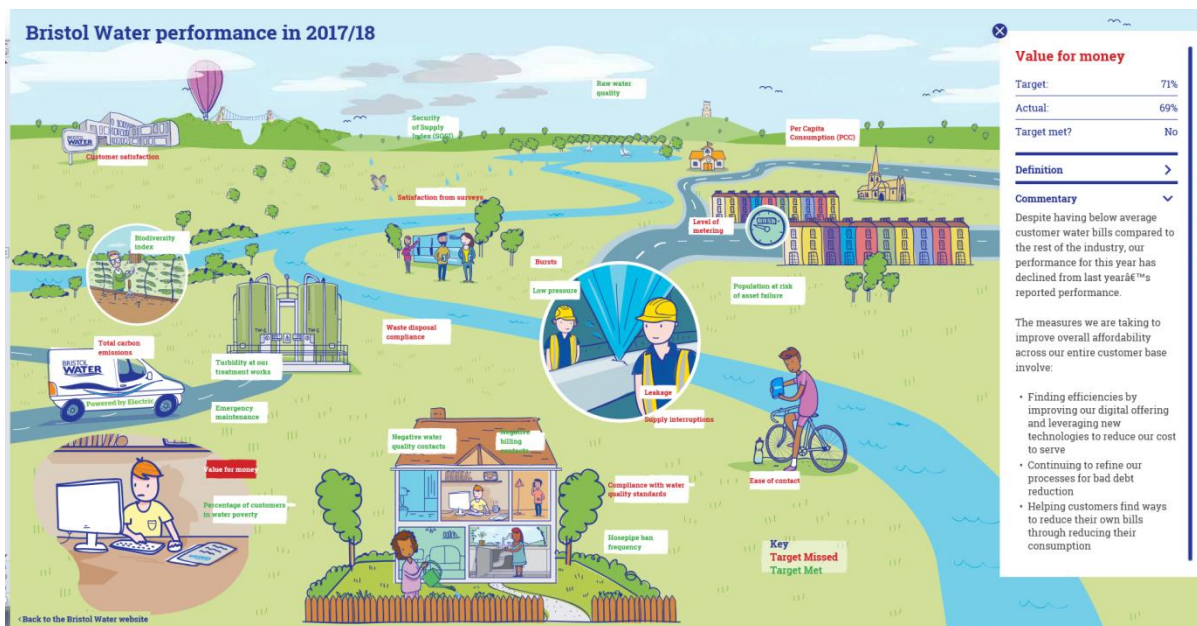


Figure 7-6 - Interactive performance graphic on www.bristolwater.co.uk

Customers did not support a financial incentive on value for money, vulnerability or affordability metrics. In part this is because there are split views amongst customers on who should pay, and a lack of logic of being rewarded for helping customers with their issues (by other customers), or from perceptions of value for money. The metric is better as reputational, holding us to account through the Bristol Water Challenge Panel and our 'Bristol Water For All' sharing mechanisms, and community initiatives, in how well we are meeting the wellbeing needs of individual customers and society. Valuing the incentive is also not possible, and would double count our UKCSI position which we expect to build on being the most trusted utility, because of our work in areas such as this.

We also note CCWater's support for a reputational incentive "as a powerful enough driver in itself" for this performance commitment¹⁷.

Our proposed AMP7 targets are provided below for information. Our target is based on continuing to ensure that none of our customers are in water poverty. This is based on analysis of the number of customers in our area who may be in water poverty and eligible for our assistance packages. This commitment reflects the level of priority our customers hold affordability to be. The level of stretch in the targets has taken into account our historical performance.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Customers in Water Poverty	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	1.8	0.0	0.0	0.0	0.0	0.0

Table 7-11 - Customers in Water Poverty - performance commitment

7.4.8. Costs, Benefits and Incentive Rates

¹⁷ Time to raise the bar on affordability and vulnerability, <https://www.cewater.org.uk/wp-content/uploads/2017/12/Affordability-think-piece-by-Andy-White.pdf>

C3 - Delivering outcomes for customers

As we have opted for a reputational ODI, WTP has not been taken into consideration.

The performance commitment has been allocated to the Residential Retail price control, because it covers customer-related services that we provide.

7.4.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. Our long-term target is to keep customers in water poverty at zero; this performance commitment enables the us to monitor this customer priority.

7.5. Value for money

7.5.1. Definition

This is a revision of our AMP6 performance commitment of the same name. The AMP6 performance commitment methodology was conducted in eight months of the year (in the months when SIM samples were not taken), using a sample size of 340 customers. These surveys were conducted by an independent market researcher in line with the Market Research Society code of conduct and these surveys were also used to determine our AMP6 'Ease of Contact' performance commitment. As we are not proposing to report on the 'Ease of Contact' performance commitment in AMP7 (as the new measure of customer experience, C-MeX, supersedes its relevance) we will not be undertaking these monthly surveys anymore and have therefore proposed an annual survey.

This measure therefore relates to the percentage of customers responding to the company's annual household customer tracking survey who consider that we provide good value-for-money, by either responding very good or good, after being asked the question 'Thinking about value for money, overall how would you rate Bristol Water in relation to the service they provide?' The survey will be conducted by phone, using a sample size of 1,000 customers, using random-digit-dialling (who may or may not have contacted us). This methodology is more comparative and therefore more transparent for our customers, because the results can be measured against the methodology used and reported on by CC Water.

This definition has been amended following feedback from Ofwat on the information we provided on 3rd May (as part of the regulatory requirement to submit our definitions ahead of Business Plan submission). The amended definition can be found in full in Appendix 3.

7.5.2. Customer views

Value for money is an important concept in measuring whether customers consider that the service that we provide is worth what they pay for it. Some customers struggle to make this assessment, often citing that they cannot compare because they cannot choose water supplier, but we have found the measure to be sufficiently well understood by most respondents to our surveys. 'Bills are too expensive' is one of the top 3 reasons for customers to express dissatisfaction in the annual survey since 2015. We know from our annual survey and other studies that customers think keeping bills affordable for all is important however customers consistently rate our performance on affordability low.

To help us understand what customers would like us to invest in we have done surveys with over 3,000 customers on the different elements of our service. Looking at all this research together, and at our research from 2014, we see that customers expect us to do more for less, but that they aren't interested in lower bills at the expense of the current service we provide.

When we have spoken to customers about options to invest in long-term initiatives such as resilience schemes, some customers told us that while they believe they are important, their choice would still ultimately come down to the affordability of the bill. When it comes to spending money to improve services we know that most customers want us to invest, but not if bills are going up anyway, making them less affordable. Where we can offer improved services at the same price customers often prefer that to a reduction in the bill. We know that how willing customers are to invest in improvements is more closely linked to the overall bill level when their personal financial circumstances are more difficult.

C3 - Delivering outcomes for customers

We have also talked to customers about how we finance our investments. We found that while customers are keen for us to reduce the amount we borrow, and so the amount of interest we pay, but not where it leads to a much more expensive bill. Keeping bills low and steady is important to customers, as is paying off the cost of investments within their lifetime.

When we spoke to customers about our proposed performance commitments, they prioritised value for money as a key performance measure due to the lack of open market competition.

We have asked customers about their views on value for money as part of the following activities:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customers survey (customer priorities and perceptions) (A5);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Company financing and bill impacts deliberative event (B19);
- Triangulation by attribute (B20);
- Youth board (A12);
- Business Plan options deliberative event (B24);
- Business Plan options focus groups with seldom-heard customers (B25);
- Bill options survey (B27);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);
- Pre-acceptability testing (B31);
- Future of the water sector (B32);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

Although in the focus groups customers suggested a penalty-only incentive, Bristol Water has proposed this be one of the four reputational metrics at PR19. CCWater have added their support for this approach

7.5.3. Regulatory requirements

This is a revision of an AMP6 performance commitment of the same name. In its final methodology Ofwat stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so. As we will not be undertaking monthly surveys during AMP7 we have based our targets on our annual surveys.

Table 7-12 - 52 shows our historical performance against our PR14 methodology and our revised methodology for PR19.

C3 - Delivering outcomes for customers

Value for Money – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	71	71	72
	Company Performance (PR14 methodology)	73	70	72	69
	Company Performance (PR19 methodology)	-	71	78	79

Table 7-12 - Value for Money – Historical Information

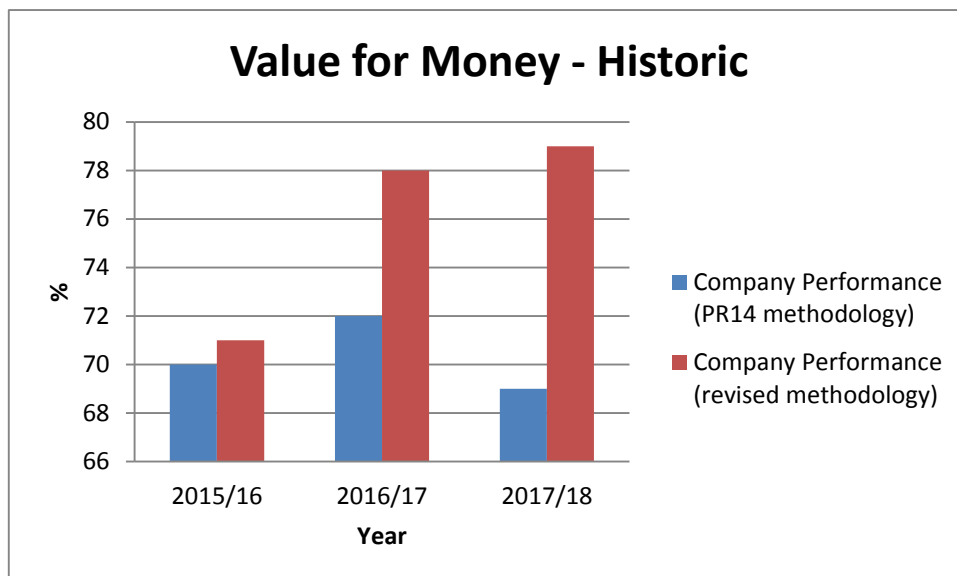


Figure 7-7 - Historic performance against Value for Money measure

The other approaches considered for assessing the performance commitment levels are below.

C3 - Delivering outcomes for customers

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	N/A	A cost/benefit analysis was not undertaken		
Comparative information	83	This is the current frontier level of performance on CCWater's annual survey		✓
Historical information	73	This is our best historical performance since 2014/15		
Minimum improvement	80	This is a 10% level of improvement from our best year's performance. This target was selected for inclusion within our Draft Business Plan. This was based on our monthly survey results	✓	
Maximum level attainable	90	This target assumes Bristol Water could achieve our long-term ambition for satisfaction rates immediately		
Expert knowledge	N/A	Not applicable as not a measure of asset health		

Table 7-13 - Value for Money – approaches considered for setting performance commitment

7.5.4. Allocation to price control

The performance commitment has been allocated to Residential Retail, because it is measured through a survey of customers who have interacted with us through a customer contact channel, which are within the Retail control.

7.5.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was included in our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Value for Money	%	72	N/A	80	N/A	90
Forecast increase to the average bill from additional investment			N/A	N/A	N/A	N/A

Table 7-14 - Value for Money – draft Business Plan consultation

7.5.6. Draft Business Plan Consultation feedback

The importance which customers place on value for money can be seen in the qualitative responses to the customer survey and consultation. In the customer survey, lower bills were the most commonly raised issue and value for money the second most commonly raised across each of the outcomes and in response to the plans overall. Customers who prefer the slower plan often suggest there is a need to minimise bills, whilst customers who support the suggested or faster plans argue that they would provide good value for money.

Customers also sometimes indicate that they prefer the slower plan for issues which they nonetheless see as high priority issues. This can be seen in the responses to proposals for leakage, water use, water that doesn't look clear and water that doesn't smell or taste right, and it is indicative of the importance of cost and value for money to customers. It is however reflected in financial incentives on other performance commitments rather than these supporting measures. They are included for transparency and fairness of performance discussions with the Bristol Water Challenge Panel.

Based on customer data, we concluded that the final bill level should be no higher than that in the suggested plan, and a plan which has a lower bill level is likely to be accepted by more customers – particularly in low-income groups. The table below shows bill levels and value for money to be the most common comments from customers on their reasons for choosing their overall preferred plan.

Code	Customers
Lower bill	33%
Value for money	24%
Best / preferred option	11%
Positive investment	6%
Bill payment	4%

Table 7-15 - Customer reasons for choosing their preferred plan

7.5.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Value for Money - Summary			
Stretch	2019/20 Baseline	2024/25 Target	ODI
Historical information	72	83	Reputational

Table 7-16 - Value for Money – Summary

As this has a reputational ODI there is no impact on our customers' bills. But effective dissemination of our performance information will be needed to increase the reputational impact of our performance commitment. There is a strong reputational incentive to achieve or outperform our performance commitment levels because we have to report our performance in our Annual Performance Reports. The reports are publicly available on our website, which enable our customers and the Bristol Water Challenge Panel to challenge us on our performance. We also report on our performance on an interactive performance webpage (as shown below), where our customers can learn about our reputational and our financial performance commitments.

C3 - Delivering outcomes for customers

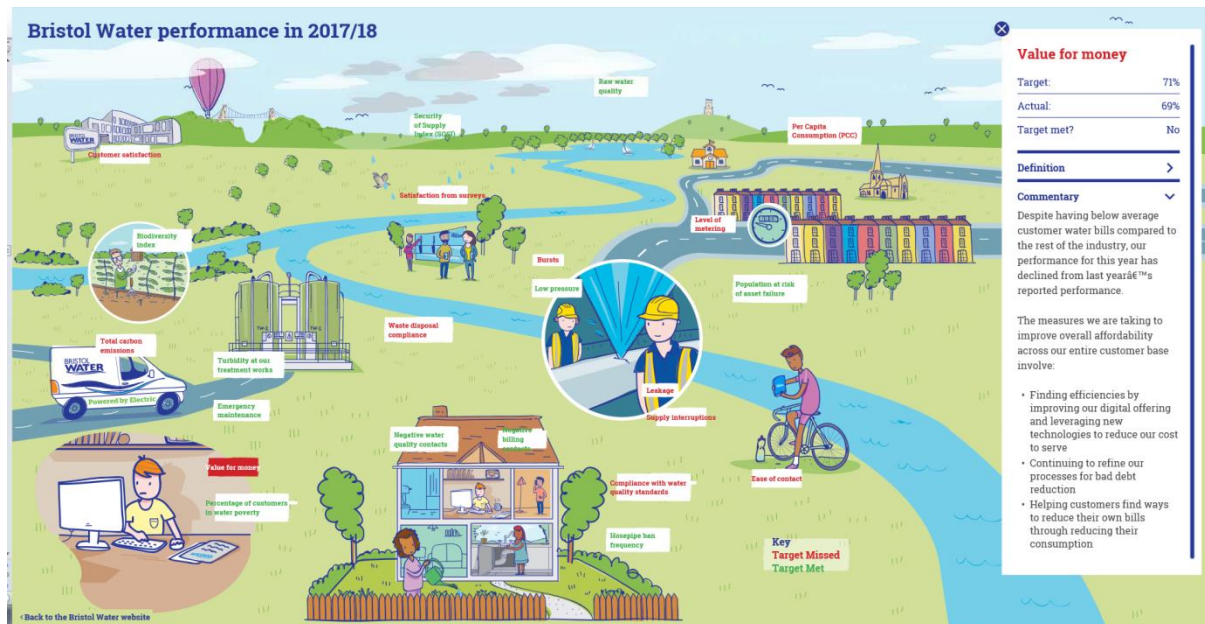


Figure 7-8 - Interactive performance graphic on www.bristolwater.co.uk

We also note CCWater's support for a reputational incentive "as a powerful enough driver in itself" for this performance commitment¹⁸.

Our proposed AMP7 targets are provided below for information. The level of stretch in the targets has taken into account our historical performance; at PR14 our target was to improve satisfaction by 2% from the starting level of 70% whereas at PR19 we are proposing to improve satisfaction by a further 8%.

We propose that the table below be included in our final determination.

¹⁸ Time to raise the bar on affordability and vulnerability, <https://www.ccwater.org.uk/wp-content/uploads/2017/12/Affordability-think-piece-by-Andy-White.pdf>

Committed Performance Levels							
Value for Money	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	72	80	81	82	83	83

Table 7-17 - Value for Money – Committed Performance Levels

7.5.8. Costs, Benefits and Incentive Rates

As the we have opted for a reputational ODI, WTP has not been taken into consideration.

The performance commitment has been allocated to the Residential Retail price control, because it covers customer-related services that we provide.

7.5.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

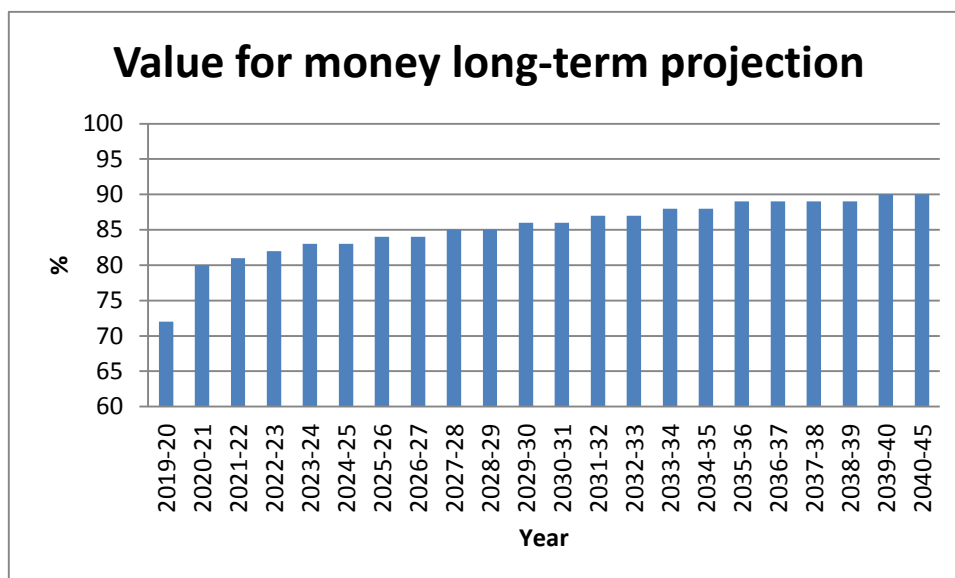


Figure 7-9 - Value for Money long-term projection

Our long-term ambition is to achieve a value for money satisfaction rate among our customers of 90%.

7.6. Percentage of satisfied vulnerable customers

7.6.1. Definition



The percentage of customers within our supply area receiving vulnerability assistance who are satisfied with the assistance given.

The original definition (as submitted to Ofwat on 3 May) can be found in Appendix 3.

7.6.2. Customer views

We know from our annual survey and other studies that customers think keeping bills affordable for all is important however they consistently rate our performance on affordability as an area for improvement. We know that some of our customers struggle with water and other bills, and we met around 30 of them early in 2017 to find out what support was most important to them. We found that those who had talked to us were happy with our service in most areas, but too few customers were aware of the priority services register, and that we can help not just with bills but with other needs.

We also talked to them about how well we support them in difficult circumstances – for example, during supply interruptions. Customers told us that they need more notice for such events – whether to plan for help, to budget for bottled water, or for health planning reasons. For the same reasons, it is important for these customers to have a clear sense, as soon as possible, about how long the interruption may last. Customers value honest and transparent communication, and regular updates. Using multiple communication channels is important to make sure as many people as possible are being reached. They requested delivery of water directly to the most vulnerable within a few hours.

When we spoke to other groups of customers about our proposed performance commitments, they prioritised satisfaction of vulnerable customers as a key performance measure as they saw Bristol Water as having a role in supporting vulnerable people and ensuring everyone has access to the water they need. There were mixed views about whether we should measure how many customers we are supporting, or how satisfied those customers are with the service we provide.

When consulting with stakeholders who work with people with specific needs, we found that where we have a close working relationship, stakeholders were happy with the service and support we provided to people. However, there is an opportunity for us to collaborate more closely with non-financially focused stakeholder groups (such as groups who work with people with sensory deprivation, or mental health issues).

We have described the outcomes of our conversations with customers and partners about supporting vulnerable in the following reports:

- Customer priorities focus groups (B5);
- Customers in vulnerable circumstances (B13); and
- Focus groups on performance commitments (B14).

7.6.3. Regulatory requirements

This is a new performance commitment for AMP7. The PR19 methodology requires companies to include at least one bespoke performance commitment for addressing

C3 - Delivering outcomes for customers

vulnerability in their Business Plans, after engaging with customers and taking on board challenges from their CCGs.

As this is a new bespoke performance commitment for PR19, comparative information is not available and historical information is not available.

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	N/A	A cost/benefit analysis was not undertaken		
Comparative information	N/A	There is no comparable measure in this area, other than general satisfaction surveys		
Historical information	85	This target was selected for inclusion within the Draft Business Plan	✓	✓
Minimum improvement	N/A	There is not current baseline as this is a new performance commitment		
Maximum level attainable	100	This target assumes Bristol Water could achieve a maximum level of satisfaction		
Expert knowledge	N/A	Not applicable as not a measure of asset health		

Table 7-18 - Satisfied Vulnerable Customers – Approaches considered for setting performance commitments

7.6.4. Allocation to price control

The performance commitment has been allocated to the Residential Retail price control, because our support for vulnerable customers is carried out by our customer-facing teams as a Retail activity.

7.6.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document 'Bristol Water... Clearly' published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Percentage of satisfied vulnerable customers	%	N/A (new measure)	80%	85%	90%	100%
Forecast increase to the average bill from additional investment £			0	1	2	N/A

Table 7-19 - Satisfied Vulnerable Customers – Final Performance Commitments

7.6.6. Draft Business Plan Consultation feedback

When we talked to customers about vulnerability assistance as part of our consultation, customers who supported the suggested and faster plans overall often mentioned vulnerability as a reason for their choice, seeing it as a worthwhile investment. However, some of our most engaged customers questioned whether satisfaction was the best measure for how much we are doing to support vulnerable customers and suggested an alternative metric based on the number of customers helped. However, amongst vulnerable customers, satisfaction was lower after they received support when they realised that it was available to them earlier, when they were most in need but had the least opportunity to seek assistance. This is why we target satisfaction rather than volume of customers on the Priority Services Register – excellent experiences requires meeting individual customer needs when they need our individual support most.

The most popular plan is the suggested plan, despite the fact that the slower plan would add no cost to the customer bill. This shows that customers are willing to pay a small amount for improvements in this area. Twice as many customers support the faster plan for vulnerability assistance than customer experience, with future customers, affluent customers and rural customers all supporting higher levels of help for vulnerable people. In reality the average bill will not increase for these improvements – it is in built to wider customer service and business investment. Research though required us to explore the extent of support as part of our draft Business Plan.

“Safely affluent” customers were more likely to select the faster improvement plan for vulnerability assistance, whilst “social renters” were more likely to select the slower plan.

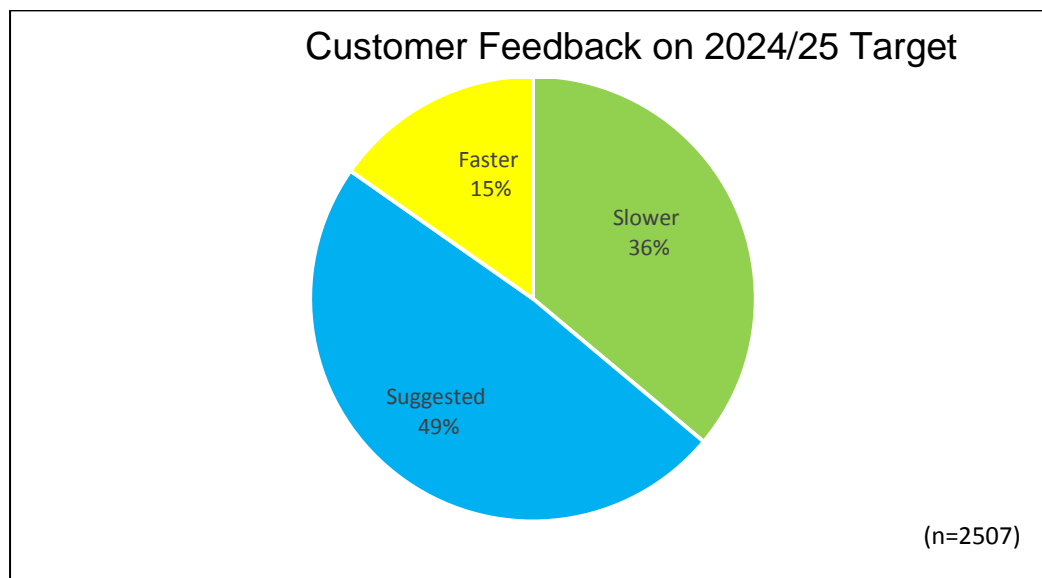


Figure 7-10 - Customer views on draft Business Plan proposals on satisfied vulnerable customers

Final plan acceptability testing (which included comparative information on bills and performance) identified 77% support for the proposals for this service area, with only 3% of people disagreeing.

7.6.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

C3 - Delivering outcomes for customers

Satisfied Vulnerable Customers - Summary			
Stretch	2019/20 Baseline	2024/25 Target	ODI
Expert knowledge	85	85	Reputational

Table 7-20 - Satisfied Vulnerable Customers - Summary

As this has a reputational ODI there is no impact on our customers' bills. But effective dissemination of our performance information will be needed to increase the reputational impact of our performance commitment. There is a strong reputational incentive to achieve or outperform our performance commitment levels because we have to report our performance in our Annual Performance Reports. The reports are publicly available on our website, which enable our customers and the Bristol Water Challenge Panel to challenge us on our performance. We also report on our performance on an interactive performance webpage (as shown below), where our customers can learn about our reputational and our financial performance commitments.



Figure 7-11 - Interactiver performance graphic on www.bristolwater.co.uk

We also note CCWater's support for a reputational incentive "as a powerful enough driver in itself" for this performance commitment¹⁹.

Our proposed AMP7 targets are provided below for information. As this is a new performance commitment with little reliable historical information it has not been possible to set targets that stretch any further than the suggested level of performance. Targets in AMP8 will be re-set once performance in AMP7 is known.

We propose that the table below be included in our final determination.

¹⁹ Time to raise the bar on affordability and vulnerability, <https://www.ccwater.org.uk/wp-content/uploads/2017/12/Affordability-think-piece-by-Andy-White.pdf>

Committed Performance Levels							
Satisfied Vulnerable Customers	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	85	85	85	85	85	85

Table 7-21 - Satisfied Vulnerable Customers – Committed Performance Levels

7.6.8. Costs, Benefits and Incentive Rates

As the we have opted for a reputational ODI, WTP has not been taken into consideration.

The performance commitment has been allocated to the Residential Retail price control, because it covers customer-related services that we provide.

7.6.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

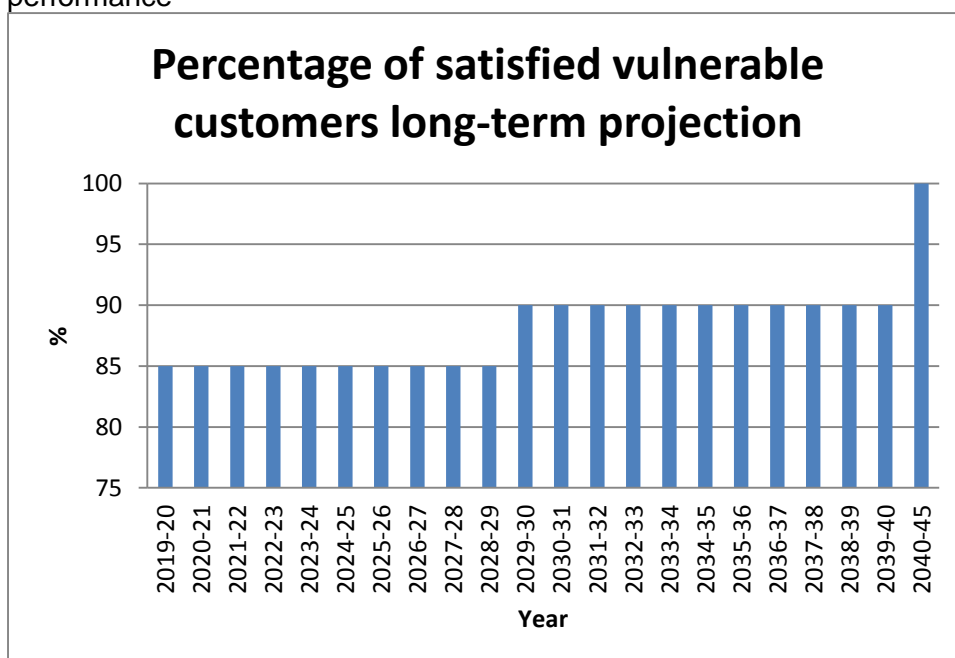


Figure 7-12 - Satisfied vulnerable customers - long-term projection

Our long-term ambition is to achieve a 100% satisfaction rate among our vulnerable customers.

7.7. Void properties

7.7.1. Definition

This is the average total number of household properties, within the supply area, which are connected to our water supply but do not receive a charge, as there are no occupants, as a percentage of the total number of connected households.

C3 - Delivering outcomes for customers

This reporting definition is aligned to the definition of void properties used in Ofwat’s Annual Performance Report guidance. We define voids as household properties that are connected for water services that do not receive a charge because they are classed as vacant or “un-occupied”. The average total number of such properties is included within our Annual Performance Report. This is in line with the definition in RAG 4.07 that defines void properties as the:

“Average total number of household properties, within the supply area, which are connected for either a water service only, a wastewater service only or both services but do not receive a charge, as there are no occupants. This should not include properties that do not receive a bill because it would be uneconomical to do so. Note that a property connected for both services that is not occupied, only counts as one void property.”

This definition was still under development when it was submitted to Ofwat on 3rd May as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission. The finalised definition can be found in full in Appendix 3.

7.7.2. Customer views

This is a new performance commitment, and not something we have talked to customers about. However we do know from our discussions with customers about how Bristol Water handles customers who cannot pay that fairness is important to them. They encourage Bristol Water to help those who need assistance with their bill and to reduce the number who are not paying for other reasons.

7.7.3. Regulatory requirements

This is a new performance commitment for AMP7 as Ofwat set an expectation in its final methodology statement that we propose a performance commitment on Gap Sites and Voids, although it did not go as far to state that this was mandatory. As an example, Ofwat suggested the performance commitment should be based on the percentage of connected properties that are classed as void in: a) the residential market; and b) the business market. Information on our plans for Gap Sites can be found in Section B3 – Residential Retail.

Our proposed performance commitment only covers the residential market. For non-households it is now the responsibility of the Retailer to manage; we are therefore not intending to provide an incentive for non-household voids, but will continue to monitor the levels of vacant non-household properties in our area of supply. We are presently investigating how we will carry out these checks. If there is an economic case, we will provide financial incentives to retailers. We would prefer a standard market approach and will work with MOSL and retailers to develop one. In preparation for the retail market, a good deal of data cleansing took place on Voids and Gap sites and therefore we will be drawing on lessons learned from that exercise for how we can identify and manage voids and gap sites better going forward..

For comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance. Our analysis shows that we already have some of the lowest void numbers relative to other water industry companies. Our void rate has been 2.0% on average over the last 5 years, which is in comparison the water industry upper quartile is currently 2.3%.

Void Properties – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	-	-	-
	Company	2.0	1.8	2.0	1.9

C3 - Delivering outcomes for customers

	Performance				
--	-------------	--	--	--	--

Table 7-22 - Void Properties – Historical Information

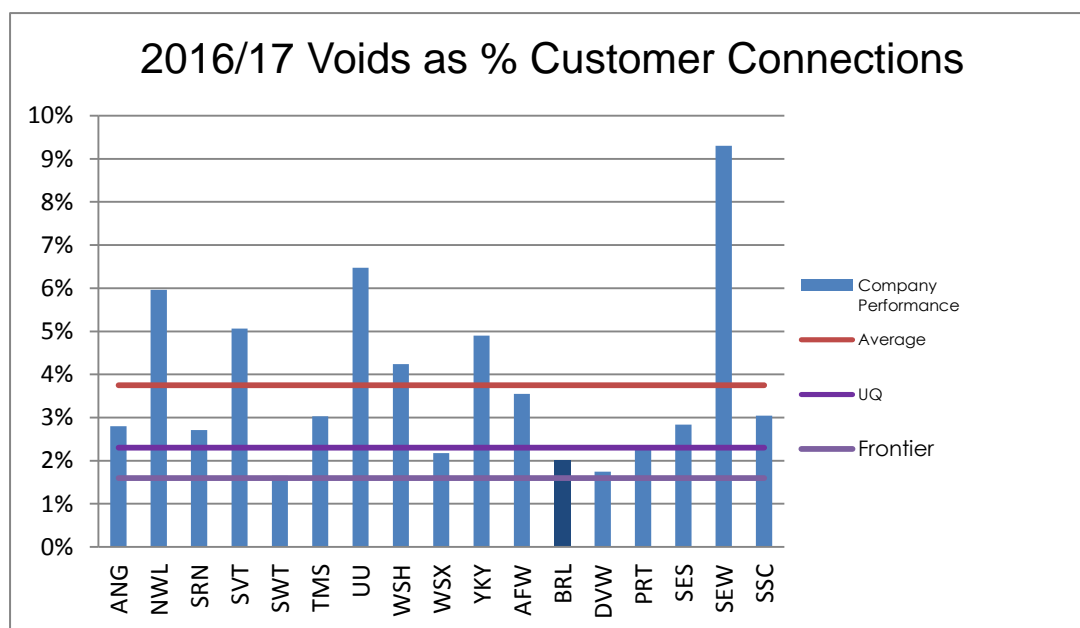


Figure 7-13 - Industry comparison of Void rates

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	N/A	A cost/benefit analysis was not undertaken	N/A	
Comparative information	2.3	This target assumes Bristol Water could achieve the industry forecast upper quartile level of performance	N/A	
Historical information	2	Our average historical performance since 2014/15 is 2%	N/A	
Historical information	1.9	This is our best historical performance since 2014/15	N/A	
Minimum improvement	1.8	As Bristol Water is already performing better than the industry upper quartile, a 10% improvement rate has been applied	N/A	✓
Maximum level attainable	1.6	This target assumes Bristol Water could achieve the industry forecast frontier level of performance	N/A	
Expert knowledge	1.8	Aligned to our view of the potential improvement from current position	N/A	

Table 7-23 - Void Properties – Assessment of approaches for setting performance commitment

7.7.4. Allocation to price control

The performance commitment has been allocated to the Residential Retail price control, because void management is an activity within the retail control.

7.7.5. Draft performance commitment, targets and long-term ambition

This performance commitment was not included within our long-term ambition document or our draft Business Plan. The decision to include it was taken ahead of the regulatory submission of our bespoke performance commitment definitions, which took place after the publication of the draft Business Plan.

7.7.6. Draft Business Plan Consultation feedback

As above, we did not consult on this performance commitment. It is not an area of interest to customers based on customer engagement; they just see accurate billing as a fundamental part of what Bristol Water does.

7.7.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Void Properties - Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Outperformance Payment (£m) – total 2020-25	Outperformance Penalty (£m) – total 2020-25
Comparative and Historical information	1.9	1.8	Out and Under	☑	☑	0.066	-0.247
						Payment (£m) within P90 – total 2020-25	Penalty (£m) within P10 – total 2020-25
						0.066	-0.247

Table 7-24 - Void Properties – Final Performance Commitment

The overall ODI design and performance commitment targets are presented in the chart below.

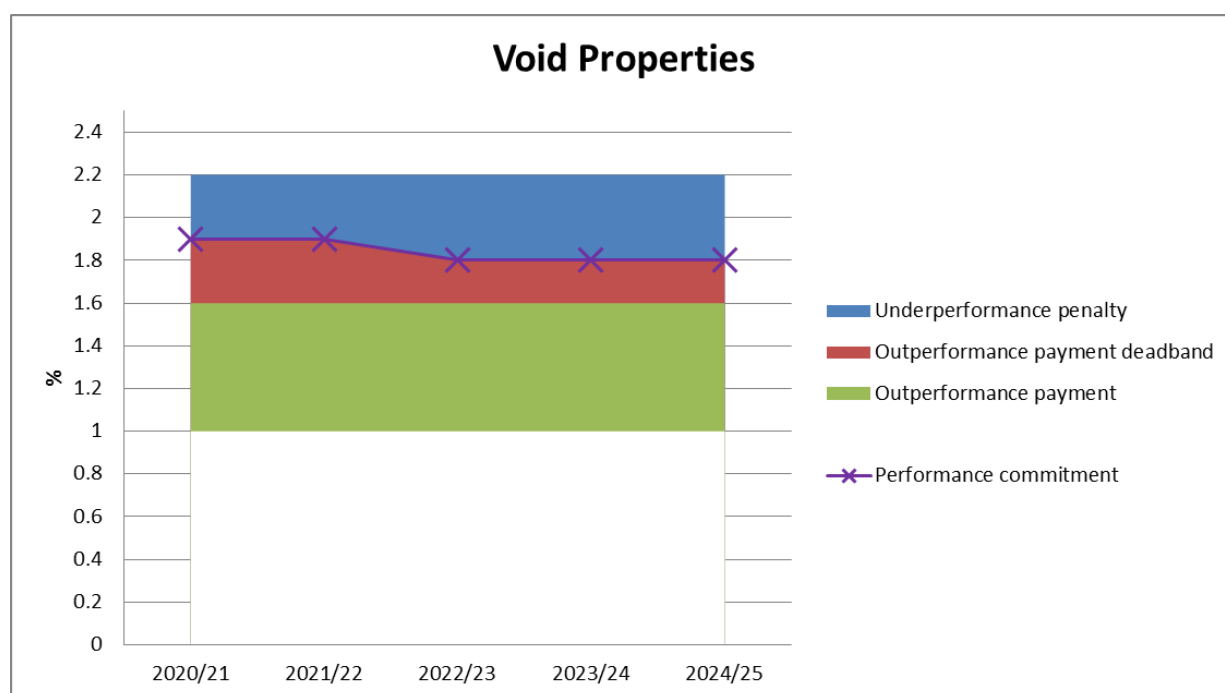


Figure 7-14 - Void Properties - design of ODI

C3 - Delivering outcomes for customers

An outperformance payment deadband has been included, which ensures the company would only be due a payment if we achieve the forecast frontier level of performance in the industry. This reflects that we are planning a glidepath to a (slightly) improved level of performance, given the compelling evidence that our void management is effective, in comparison to the comparative data that is available. No underperformance penalty deadband has been proposed; if we miss our proposed targets we would immediately be facing penalties. We have decided this is appropriate due to the large degree of management control/ influence over this metric.

The underperformance collar reflects our historic performance, and the outperformance cap reflecting the rate of new property growth which suggests a minimum level that may be appropriate.

Caps and collars have been included for this performance commitment. A cap is justified on the grounds that as this performance commitment has an in-period ODI we have taken into consideration the importance of bill smoothing to reflect customers' preferences. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of collars, as a whole.

Our proposed AMP7 targets are provided below. The level of stretch in the targets has taken into account our historical performance; on the comparative information available Bristol Water is already at the industry upper quartile level of performance.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Void Properties	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	1.9	1.9	1.9	1.8	1.8	1.8
Standard Underperformance Penalty Collar	%		2.2	2.2	2.2	2.2	2.2
Underperformance Penalty Deadband	%		1.9	1.9	1.8	1.8	1.8
Outperformance Payment Deadband	%		1.6	1.6	1.6	1.6	1.6
Standard Outperformance Payment Cap	%		1.0	1.0	1.0	1.0	1.0

Table 7-25 - Void Properties Committed Performance Levels

7.7.8. Costs, Benefits and Incentive Rates

We have deviated from the Ofwat standard formula in determining the ODI rates.

The outperformance value is based on the cash flow benefit flow based on a 2.3% real cost of debt on an average household bill of £185. This value of £4.26 per household per annum is translated to a 100% incentive unit rate based per 1% of properties of £22.71k per 1% of void properties, as this is a retail incentive.

The cost is based on information from Pelican on void inspection.

C3 - Delivering outcomes for customers

				A	B		C	B x C = D	D - A	
+ve Void	-ve Void	Other	Total (min)	Successful Voids	Type	% Time Voids	Staff Cost pa	Void Element	Per +ve Void	FTE
3,776	13,267	31,639	48,681	363	External Liaison	35.0 %	£ 61,972	£ 21,696	£ 59.69	9.0
8,043	24,883	89	33,015	801	Property Inspector	99.7 %	£ 45,042	£ 44,920	£ 56.10	3.0
							£ 57,740	£ 27,502	£ 58.80	12.0

This value of £58.80 per void is split 45% water bill equals £26.46. This is converted to an incentive rate per 1% of 519,309 forecast average AMP7 household properties (a total £137k per 1% void properties. The cost is (conservatively) assumed to be ongoing to maintain a property at the void level. No sharing rate is applied as this is a retail ODI.

The incentive rate formula does not have the totex customer sharing rate applied – this is appropriate for a retail incentive as the totex menu does not apply, as Ofwat’s methodology states “the residential retail... price controls do not have cost sharing because they are based on average revenue controls.”

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per % voids	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual (average d) £m	Total AMP7 £m	RORE %
Outperformance payment total	-	-	0.022	50% of cash flow benefit	0.013	0.066	0.0
Underperformance penalty total	-	-	0.137	Based on cost of finding void	-0.049	-0.247	0.0

Table 7-26 - Void Properties Calculation of Incentive Rates

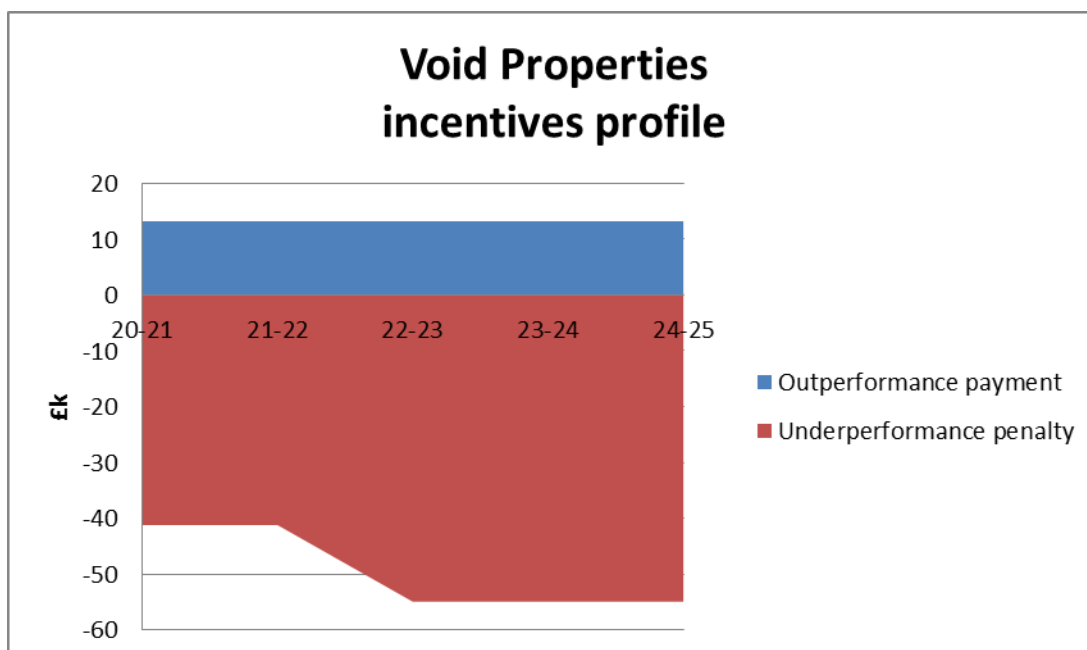


Figure 7-15 - Voids incentive profile

The performance commitment has been allocated to the Residential Retail price control, because it covers customer-related services that we provide.

7.7.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

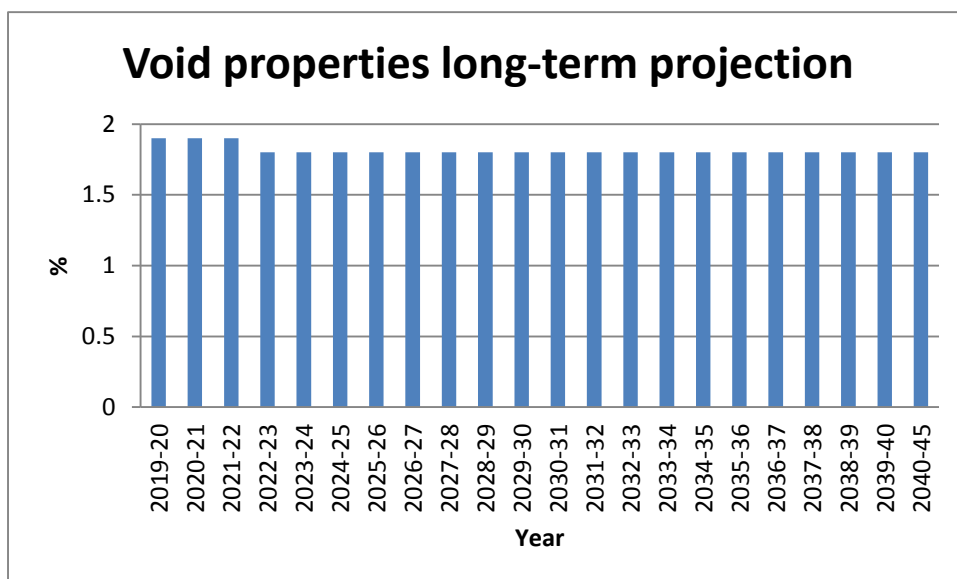


Figure 7-16 - Void properties long-term projection

Our long-term target is to remain at the upper quartile level of performance for this performance commitment.

8. Detailed evidence by performance commitment – Safe and Reliable Supply of Water

8.1. Outcome – Safe and Reliable Supply of Water

We look after our assets to provide high quality, reliable supplies for present and future generations.



8.2. Water quality compliance

8.2.1. Definition



We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). The Compliance Risk Index (CRI) is a measure designed to illustrate the risk arising from treated water compliance failures, and it aligns with the current risk based approach to regulation of water supplies used by the Drinking Water Inspectorate (DWI). All compliance failures are assessed by DWI using the provisions of the Water Industry Act 1991. In doing so, DWI has regard to its published Enforcement Policy, and it also follows the principles of “better regulation” to scrutinise company performance on the basis of their risk of failing to meet the requirements of the regulations.

The following outlines the broad principles of the measure of water quality compliance, the Compliance Risk Index (CRI) measure:

- the significance of the parameter failing the standards in the Regulations (the Parameter score);
- the cause of the failure; the manner of the investigation of the failure by the company; and any mitigation put in place by the company (the Assessment score); and
- the location of the failure within the supply system taking into account the proportion of the company’s consumers affected (the Impact score).

The formula for the calculation of the index is as follows:

$$\text{CRI} = \frac{\text{For compliance failures in water supply zones } \sum \text{SCP}}{\text{Total company population served}} + \frac{\text{For compliance failures at water treatment works or designated supply points } \sum \text{SCV}}{\text{Total volume of water supplied daily by the company (m3/day)}} + \frac{\text{For compliance failures at service reservoirs } \sum \text{SCR}}{\text{Total Service Reservoir capacity of the company (m3)}}$$

8.2.2. Customer views

We know that providing safe, good quality water at all times is our customers’ main priority for us as a water company. Triangulated values from our valuation research tell us that customers are willing to pay to improve the clarity and taste of their water. Even when we talk to our most engaged customers, who know more about the regulatory standards for water quality, they still see it is a top priority for improvement relative to other commitments. Maintaining a quality water supply is also a priority for our future customers in our Youth Board.

‘Poor water quality’ is one of the top 3 reasons for customers to express dissatisfaction in the annual survey since 2015, and it makes up around 8% of non-billing calls from customers, the fourth most common operational reason customers contact us. When discussing water quality with customers, they value it as a performance commitment because it is important for them to know that their water is being kept clean, they find it reassuring regarding any potential health risks, and think such a commitment improves trust between the company and the customers.

Although we do not have valuation data for water quality in itself we do know that customers are willing to pay to avoid incidences of poor appearance and taste, which they associate with water quality.

Relevant customer engagement and research includes:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey (customer priorities and perceptions) (A5);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Customer forum, March 2018 Business Plan options (A3);
- Youth Board (A12);
- Business Plan options deliberative event (B24); and
- Business Plan options focus groups with seldom heard groups (B25).

8.2.3. Regulatory requirements

As this is a new performance commitment for PR19, we do not currently have committed service level targets. We have however been shadow reporting this metric to the DWI. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. As the CRI is a comparative metric we have compared our performance to other companies in the industry.

Compliance Risk Index – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target ²⁰	-	-	-	-
	Company Performance	3.93	3.17	1.53	0.03
Industry	Average	4.93	3.20	4.53	2.85
	Upper Quartile	2.72	0.96	2.34	1.30
	Frontier	0	0	0.27	0.03

Table 8-1 - Compliance Risk Index – Historical Information

²⁰ There is no historical target for this performance commitment because it is a new commitment for PR19

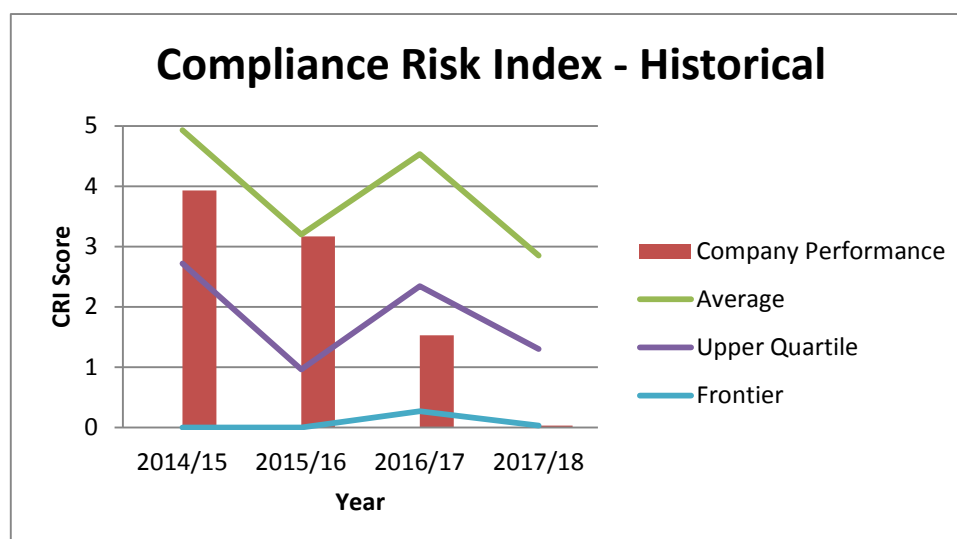


Figure 8-1 - Compliance Risk Index - Historical Performance

We have historically been performing above the industry upper quartile and for 2017/18 we are at the frontier level of performance. We are therefore forecasting to achieve a frontier level of performance (around the zero level of CRI performance) throughout AMP7.

8.2.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because CRI substantially depends on water treatment and distribution activities.

8.2.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’ , published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target Long-term ambition
			Slower improvement	Suggested improvement	Faster improvement	
Compliance Risk Index	Index Score	1.27	0.7	0	0	0
Forecast increase to the average bill from additional investment			£1	£3	£3	N/A

Table 8-2 - CRI Draft Business Plan Proposals

8.2.6. Draft Business Plan Consultation feedback

Most customers chose the lowest cost option. There was a lower level of support for the suggested plan than for even more expensive options. This reflected that the option reflects legal compliance, and at component level it was not possible to show an improvement in the survey (as the target was zero for suggested and faster plan). However, future customers

C3 - Delivering outcomes for customers

and lower socio-economic groups prioritise water quality as a key concern. There is general support for water quality as the highest priority for the company but some question why Bristol Water should be aiming to improve already high standards.

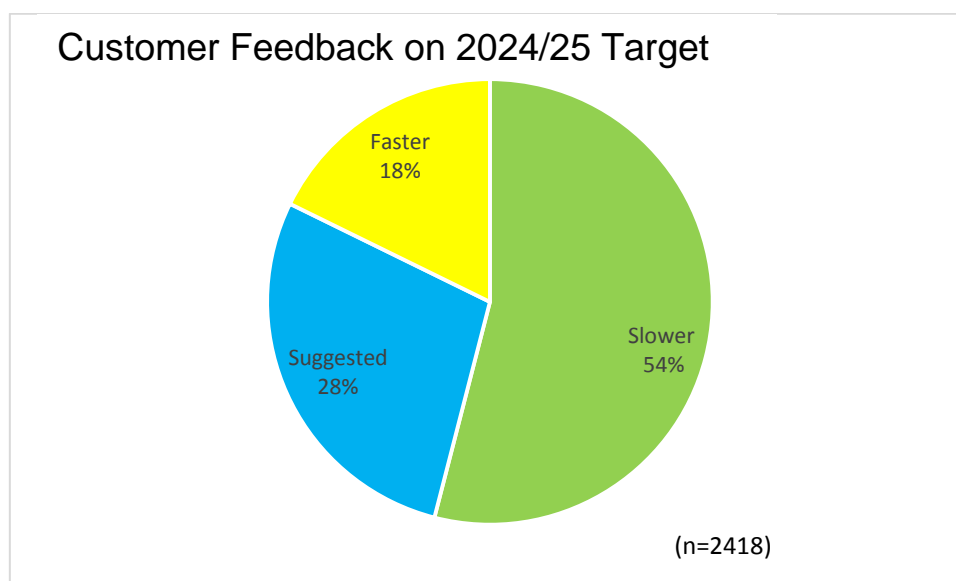


Figure 8-2 - Customer views on draft Business Plan proposals

Final acceptability testing showed 87% support for our proposals, with only 4% against.

8.2.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Water Quality Compliance – Summary						
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Collar	Penalty (£m) – total 2020-25
Maximum	1.27	0	Under Only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-1.354
						Penalty within P10 (£m) – total 2020-25
						-1.137

Table 8-3 - CRI Final Performance Commitment

The 2024/25 target reflects the suggested target proposed in the draft Business Plan. The overall ODI design and performance commitment targets are presented in the chart below.

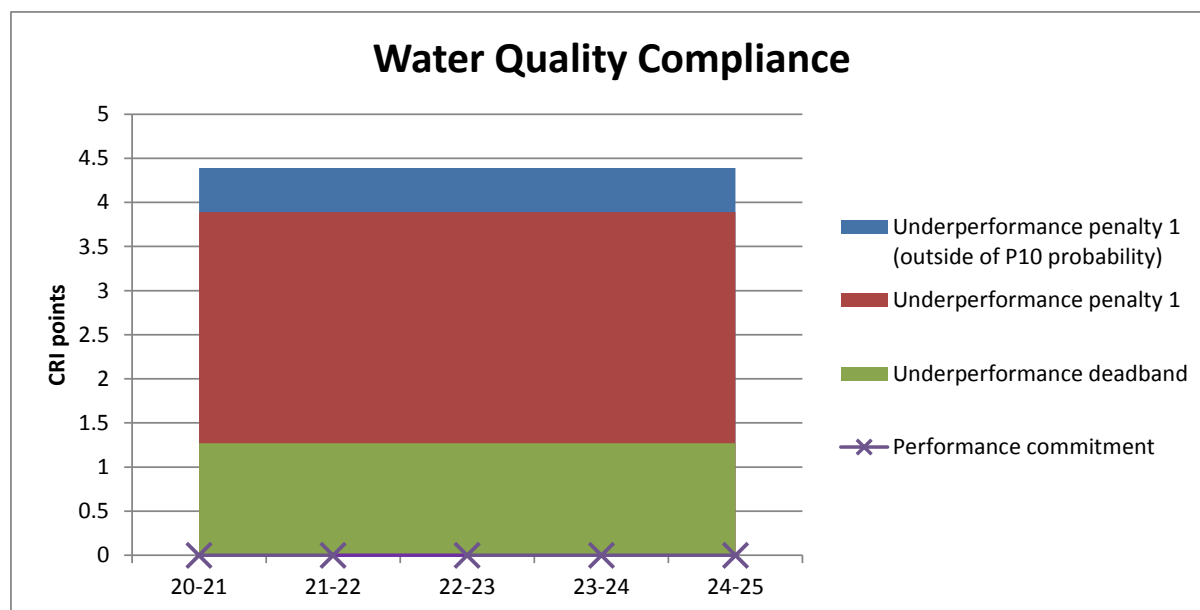


Figure 8-3 - design of CRI ODI

The PR19 methodology sets out an expectation that this include a penalty-only ODI and that the target be set to 0 (zero). Outperformance payments are also not allowed for this performance commitment. This requirement has been set because CRI is a measure of water quality compliance. The stretch for all companies is therefore to achieve full compliance i.e. to report no water quality failures. No further stretch beyond the target proposed is possible.

Our proposed AMP7 targets are shown below. We note that in Ofwat's final methodology statement²¹ the regulator states that "we recognise that CRI is a new measure and intended to be a more demanding metric of water quality compliance than its predecessor. Companies can take this into account when proposing any penalty deadbands." The inclusion of the deadband is therefore a reflection that this is a new performance commitment. As the stretch is to achieve full compliance (0 CRI points) we have therefore proposed a penalty deadband for this metric (set at below our 2016/17 performance, which is our best performance to date if 2017/18 is excluded as a potential outlier of the most recent performance).

We have included an underperformance penalty collar to reflect the overlap with existing incentives, in particular due to the potential for the DWI to take enforcement action for worsening performance and underperformance. Water quality underperformance also has significant consequences on our reputation, as it has a direct impact on human health. As water quality is consistently a top priority for our customers, performing poorly under this performance commitment would therefore have a negative impact on our reputation.

The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole.

A penalty collar has been set in the event that our performance moves beyond the average performing company (using data from the last four years). Collars have been included for this performance commitment.

²¹ Delivering Water 2020: Our methodology for the 2019 price review, Appendix 2, page 61, <https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf>

C3 - Delivering outcomes for customers

Both the deadband and collar have been set at consistent levels as the target does not change for each year of the AMP.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Water Quality Compliance	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	CRI Index Score	1.27	0	0	0	0	0
Underperformance penalty Deadband	CRI Index Score		1.27	1.27	1.27	1.27	1.27
Standard Underperformance penalty collar	CRI Index Score		4.39	4.39	4.39	4.39	4.39

Table 8-4 - Committed Performance Levels

8.2.8. Costs, Benefits and Incentive Rates

We have applied Ofwat's standard formula for this performance commitment:

- $ODI \text{ underperformance} = \text{Incremental benefit} - (\text{incremental cost} \times p)$

When undertaking our cost-benefit analysis, we have taken into account the benefits that the improvements in this performance commitment will have on our water quality contacts (appearance and taste/ odour) performance commitments. In addition, although this performance commitment is not cost beneficial, we have adopted Ofwat's targets (for full compliance) in recognition of our statutory duties and in recognition that this is the Drinking Water Inspectorate's (DWI) preferred measure.

The incremental benefit is based on our customer valuation of a 1 in 1000 chance each year of do not use notice on a property. The customer value for this is based on the central WTP value for a 24 hour supply interruption as there is no direct CRI customer WTP. This is because of the assumed impact of a high CRI score, which would lead to long-term supply interruptions. The value is below:

1. Performance Commitment					
PC	Water Quality Compliance				
Units	Compliance Risk Score				
2a. Input values					
	Units	Lower	Central	Upper	
Do Not Drink Notice	Properties at reduced risk	0	534.2	3464	
2b. Other inputs					
Properties	536,138				
Risk of event	0.1%				
3. Assessment of the value prior to addressing overlaps					
Properties	536,138				
Risk of event	0.1%				
Expected events	536,138				
		Lower	Central	Upper	
Value £ per CRI score		£0	£286,405	£1,857,182	
4. Further adjustment for overlaps - only apply to proportion of 24+ interruptions					
None required as discoloured water and taste / odour issues are not included in the above value. These impacts are covered by the separate performance commitments.					

Figure 8-4 - calculation of benefit for CRI

C3 - Delivering outcomes for customers

The costs have been taken from the Company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. These investments do not directly relate to CRI compliance, although they do contribute to its maintenance as legal obligations. The assumed cost of capital for this revenue is 2.3%. The main investments over 2020-25 which contribute to the delivery of this outcome include:

- Replacement of lead communication pipes for quality £0.2m
- Alderley Treatment works plumbosolvency dosing £0.5m
- Cheddar WTW raw water treatment trial extension £0.9m
- Water catchment management £2.1m

Full details of the investment cases can be found in Section C5B Technical Annex.

The table below shows the basis of the incentive rates and the overall 5 year position. The total underperformance payment is £1.3m and RORE of 0.1%.

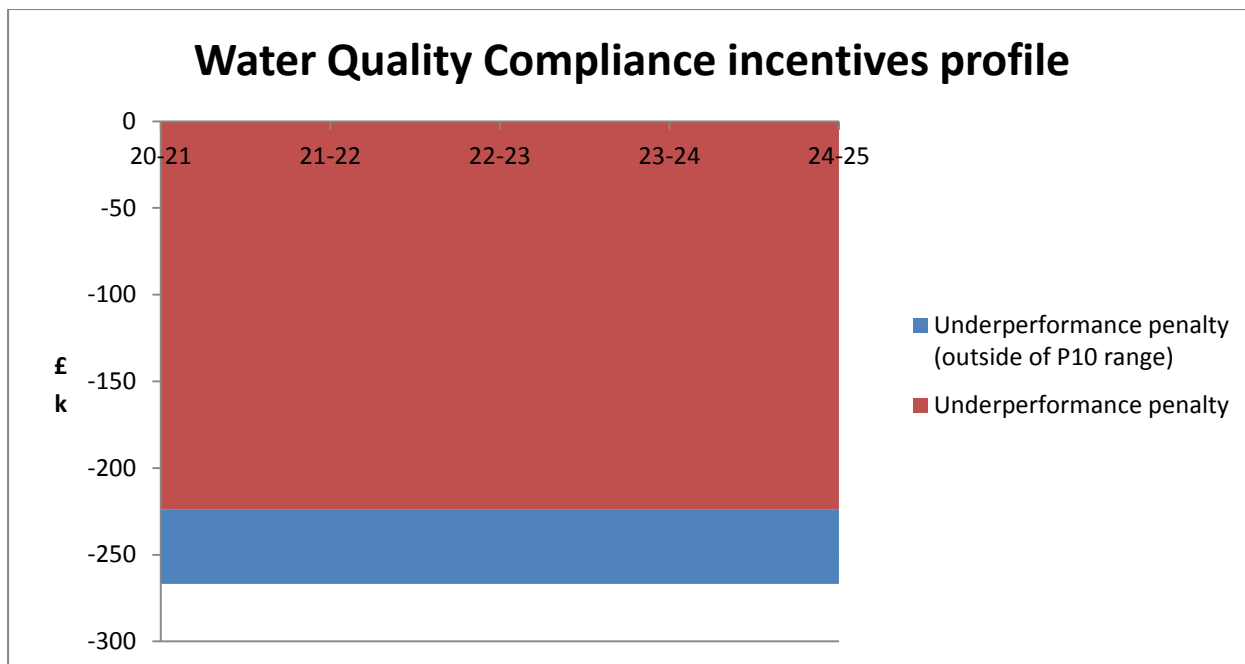
Incentive per index	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Underperformance penalty total					-0.271	-1.354	-0.1
Underperformance penalty	0.286	0.399	0.087	Suggested plan	-0.227	-1.137	-0.1
Underperformance penalty (outside of P10)	0.286	0.399	0.087	Suggested plan	-0.043	-0.217	-0.0

Table 8-5 - CRI Calculation of Incentive Rates

We looked at an alternative cost based calculation of 50% of the minimum plan cost to go CRI of 2 to 0.7, as a zero target required a deadband. This is calculated as an incentive rate of £0.085m, so we maintained our calculation as above.

The 10% probability has been assessed at a CRI index score of 3.89 (with the collar at 4.39). This reflects the recent improvement in performance from the 2015 score, meaning performance above 3.89 is unlikely based on recent experience of this new metric.

The profile of the incentive rates is shown below.



The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.2.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. For CRI the long-term target is to remain at zero (full compliance).

8.3. Supply interruptions

8.3.1. Definition



We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). Supply interruptions are defined as when properties are without a continuous supply of water. The property shall be considered as without a supply when water is lost from the first cold water tap – taken as being operationally equivalent to $\leq 3\text{m}$ pressure at the main (adjusted for any difference in ground or property level). This can be inferred from local logging, network modelling or a customer contact indicating a loss of supply which was caused by the company operation and has not been demonstrably restored. Multiple-storey buildings shall be considered on a case-by-case and floor by floor basis, with properties on a particular floor being considered as receiving the same pressure.

Calculation of the Performance

$$\frac{\sum (\text{Properties with interrupted supply} \geq 180 \text{ mins}) \times \text{Full duration of interruption}}{\text{Total number of properties supplied (year end)}}$$

The performance is therefore reported as the average number of minutes lost due to supply interruptions a customer experienced in the year, based on the total properties the company serves.

8.3.2. Customer views

We know that customers value avoiding interruptions, particularly when they last a long time and are unexpected. Customers who have experienced disruption are more concerned about avoiding them in the future.

When discussing supply interruptions and reliability as a performance commitment with customers, surprisingly they didn't always prioritise it to the same extent as other measures. Some customers we talked to about this saw occasional interruptions as inevitable and bearable, and prioritise commitments in other areas more strongly. However, more generally, customers do recognise the impact of disruptions on vulnerable customers and see it as a key part of a water company's main responsibilities.

Our triangulation of a range of valuation studies looking at planned and unplanned interruptions of varying lengths, gave a wide range for customers' willingness to pay to reduce the numbers of affected properties. All valuations, however, were high. In the case of planned interruptions, the shortest event of 3-6 hours had a central valuation of £127.70, with high and low values of £489.60 and £24 respectively. For longer interruptions, of 12 to 24 hours the central valuation was £232.50. For interruptions which are unexpected we saw higher values. A 3-6hour interruption had a central valuation of £245.20, and 12 to 24 hours was valued at £434.40. All values are weighted averages including both domestic and business customers. Following on from triangulation, we wanted to test the "low", "medium" and "high" values with customers, to test their acceptability of the values used, which resulted in the "expected" values, as shown below.

C3 - Delivering outcomes for customers

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 8-5 - Customer WTP values

These values are a weighted average of household and non-household interruptions. For instance, a 3-6 hour unplanned interruption had a household value of £136 and non-household of £1,565, with an overall of £203 from the stated preference survey. The triangulated valuation from a range of surveys was £245,20, which reduced to £184.49 through the NERA triangulation based on our draft Business Plan acceptability consultation

From our research with customers who had experienced interruptions we have gained useful insights into how to improve our response to interruptions, which can have a big impact on how customers experience them – this is captured under the proposed CMEX measure.

Engagement and research with customers on their views on reliability and interruptions to supply include:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Revealed preference research (B15);
- Triangulation by attribute (B20);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29); and
- Draft Business Plan consultation: Open Consultation (B30).

8.3.3. Regulatory requirements

This is a new performance commitment for PR19. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. At PR14 we had a similar metric ‘Unplanned Customer Minutes Lost’ (which covered all unplanned

C3 - Delivering outcomes for customers

supply interruptions), which we have proposed to discontinue reporting on. We have been working with Ofwat and the rest of the industry to align the reporting definition to help customers understand comparative performance.

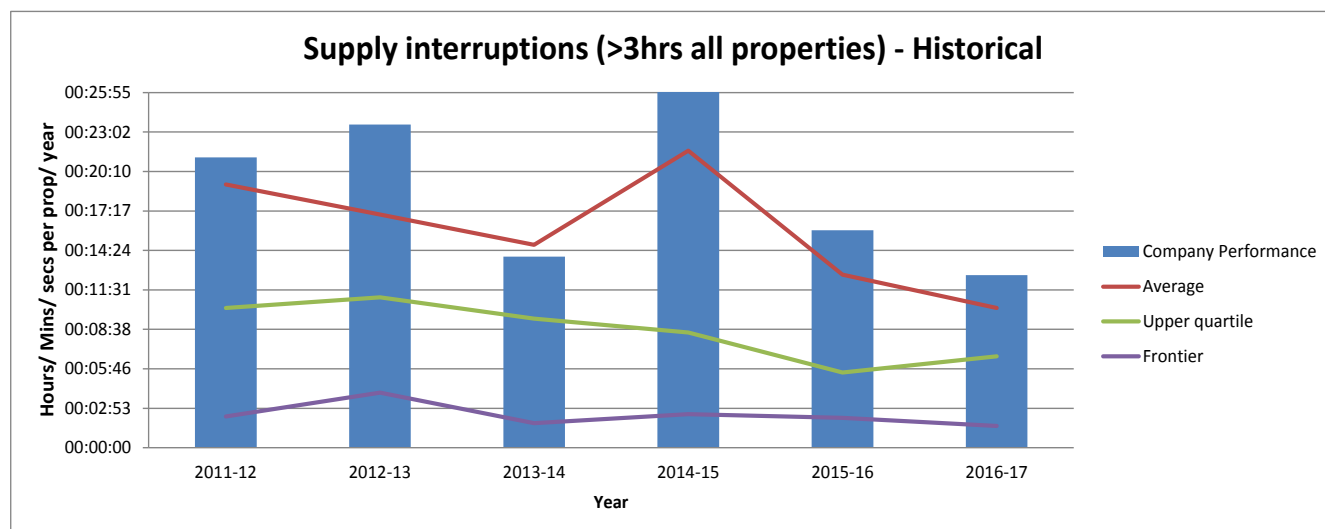
For comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance. Our target, based on our cost-benefit calculations, achieves this requirement.

Supply Interruptions – Historical Information (Hours: mins: secs)							
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Bristol Water	Target	-	-	-	-	0:13:24	0:13:06
	Company Performance	0:21:11	0:23:35	0:13:57	2:36:32	0:15:52	0:12:36
Industry	Average	0:19:13	0:17:01	0:14:48	0:21:41	0:12:37	0:10:12
	Upper Quartile	0:10:12	0:10:58	0:09:26	0:08:24	0:05:29	0:06:41
	Frontier	0:02:17	0:04:01	0:01:48	0:02:27	0:02:11	0:01:36

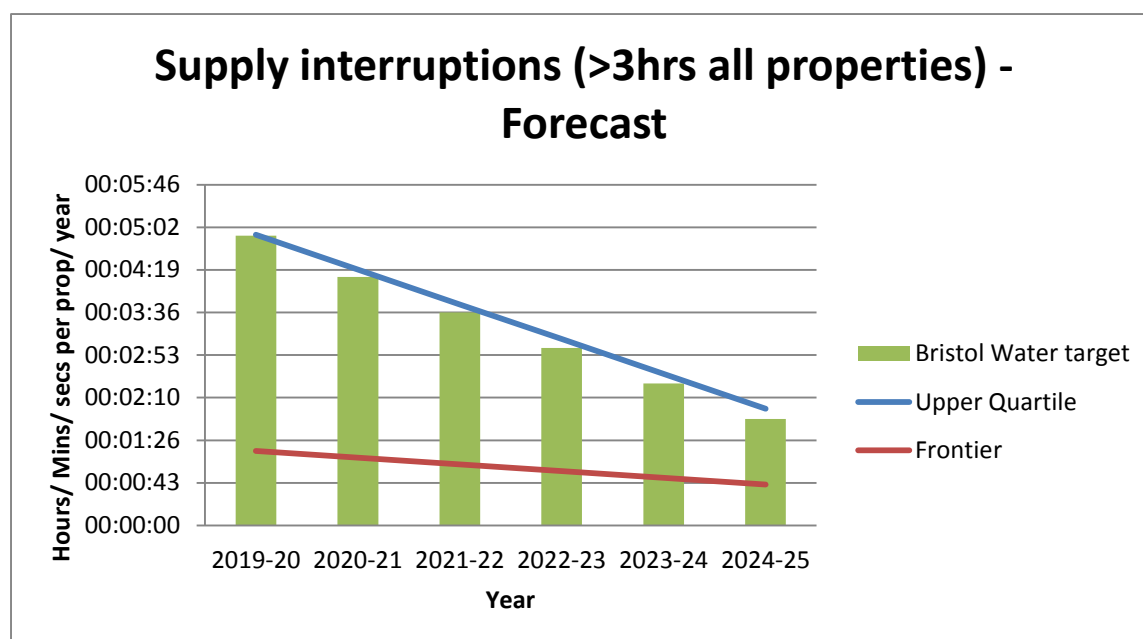
Table 8-6 - Supply Interruptions – Historical Information (Hours: mins: secs)

Supply Interruptions – Historical Information (Average mins per property)							
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Bristol Water	Target	-	-	-	-	13.4	13.1
	Company Performance	21.2	23.6	14.0	156.5	15.9	12.6
Industry	Average	19.2	17.0	14.8	21.7	12.6	10.2
	Upper Quartile	10.2	11.0	9.4	8.4	5.5	6.7
	Frontier	2.3	4.0	1.8	2.5	2.2	1.6

Table 8-7 - Supply Interruptions – Historical Information (Average mins per property)



Bristol Water has historically been performing worse than the average company across the industry.



From the historical information available, we have been able to forecast the upper quartile and frontier levels up until 2024-25; 1.58 mins is likely to be the upper quartile level and we are therefore forecasting to perform better than this level. As Ofwat has mandated all companies aim to achieve this level, we had to include this target within our ‘suggested improvement’ plan to our customers as part of the draft Business Plan.

8.3.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because it is driven by the activity of maintaining the network.

8.3.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’, published in February 2018, on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Supply interruptions	Average mins per property	12.2	4.2	1.8	1.5	1.0
Forecast increase to the average bill from additional investment £			3	7	8	N/A

Table 8-8 - Supply Interruptions – Draft Business Plan Proposals

C3 - Delivering outcomes for customers

The published information, as well as app1, present supply interruptions as mins per property. We have also considered this unit when calculating ODIs as the formula to calculate incentives was too complex to use this approach. However, the table below presents supply interruptions in the unit it will be measured by in AMP7.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Supply interruptions	Hours: mins: secs	0:12:12	0:04:12	0:01:48	0:01:30	0:01:00
Forecast increase to the average bill from additional investment £			3	7	8	N/A

Table 8-9 - Supply Interruptions – Draft Business Plan Proposals

8.3.6. Draft Business Plan Consultation feedback

When we talked to customers about supply interruptions as part of our consultation the majority said that they preferred the slower plan. Most customers who commented on this performance commitment said they were not concerned because either they had not experienced interruptions or because they felt they were manageable if customers were kept informed. This performance commitment has the lowest customer support for the faster plan out of all areas in the safe and reliable outcome, however reliability is identified in other research as a top priority, suggesting that the consultation response relates to the price package rather than the performance commitment itself.

Customers chose the lowest cost option. The suggested plan option was the most expensive of all suggested plan options, so this is not surprising. Having a reliable water supply is a top priority in general for customers, so this is a clear response to the price package and level of improvement in the slower plan, rather than the service area as a whole. We carried out further acceptability testing whether to only hit the 2020 upper quartile (the slower plan), but with the potential for a smaller bill up to 2025 with a potential uplift in 2026 as penalties were removed / additional spend to hit 1.8mins/property as the forecast upper quartile, two-thirds of customers preferred the suggested plan. Therefore we maintained our target approach for the final plan, rather than storing up problems for the future that might result from lower investment levels in AMP7.

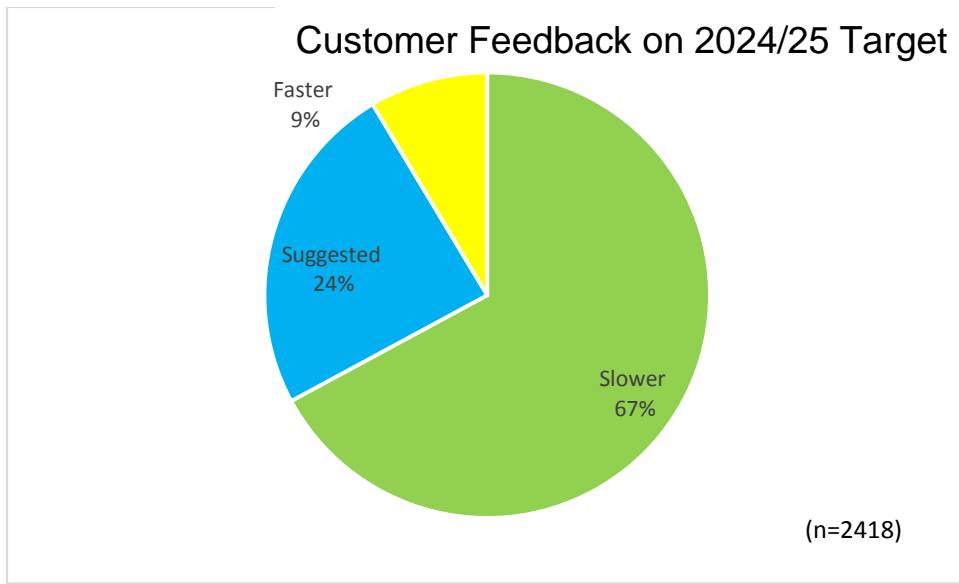


Figure 8-6 - Customer views on draft Business Plan proposals

Final acceptability testing showed 67% support for our proposals, with only 4% against.

8.3.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Supply Interruptions – Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Dead band	ODI Caps/ Collars	Payment (£m) – total 2020-25	Penalty (£m) – total 2020-25
Forecast upper quartile	12.2	1.8	Out and Under		<input checked="" type="checkbox"/>	1.724	-4.644
						Payment with P90 (£m) – total 2020-25	Penalty within P10 (£m) – total 2020-25
						0.768	-4.644

Table 8-10 - Supply Interruptions – Summary

For ODI calculations we have used (in App1) minutes per property and decimals as this could not be calculated using the standard notation in an easy to understand way.

C3 - Delivering outcomes for customers

Committed Performance Levels							
Supply Interruptions > 3 hours	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Mins per property	12.12	4.2	3.6	3.0	2.4	1.8
Underperformance Penalty Deadband	Mins per property		4.2	3.6	3.0	2.4	1.8
Standard Underperformance penalty collar	Mins per property		12	12	12	12	12
Outperformance Payment Deadband – tier 1	Mins per property		4.2	3.6	3.0	2.4	1.8
Outperformance Payment Deadband – tier 2	Mins per property		1.5	1.5	1.5	1.5	1.5
Standard Outperformance Payment Cap	Mins per property		1.0	1.0	1.0	1.0	1.0

Table 8-11 - Supply Interruptions – Committed Performance Levels

The overall ODI design and performance commitment targets are presented in the chart below. No deadbands have been proposed for this performance commitment.

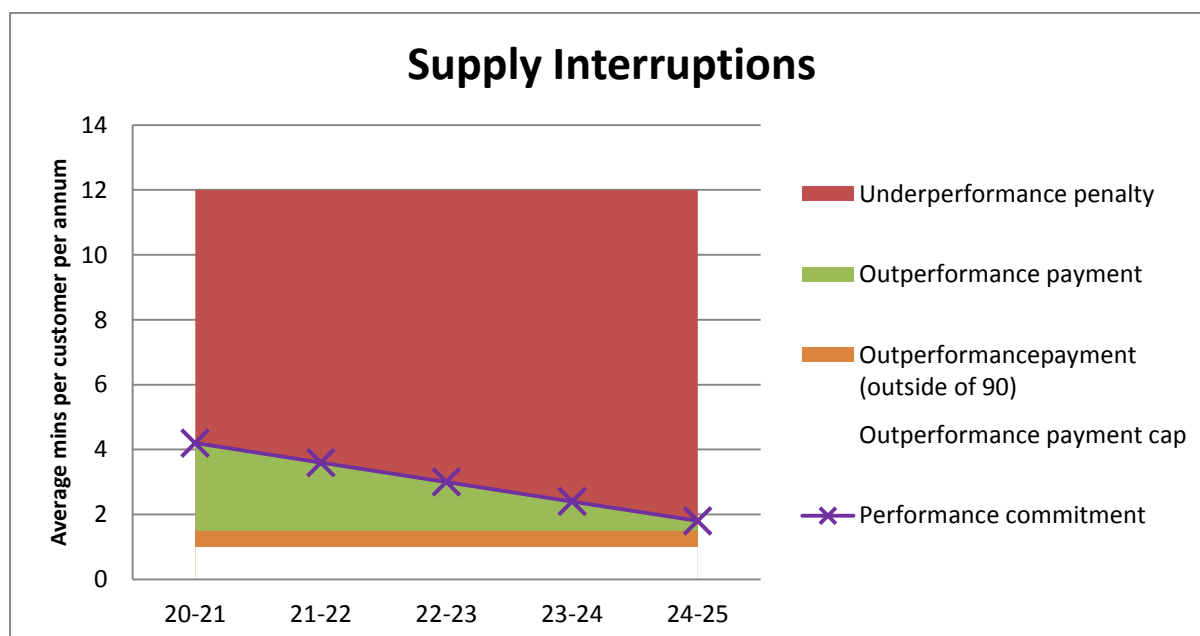


Figure 8-7 - Supply Interruptions - ODI Design

The level of stretch for this performance commitment has been considered against Ofwat's methodology statement that it expects companies to aim to achieve the forecast level of upper quartile performance for each year of AMP7. Our targets reflect our own forecasts on where we think the upper quartile level will be but we recognise Ofwat may 're-set' these annual targets once it has received forecasts from all companies. We determined the forecast levels by profiling the industry performance from the current upper quartile and the average improvement in the upper quartile position since 2011-12 i.e. we based our forecasts on actual performance rather than considering Business Plan targets, which would

C3 - Delivering outcomes for customers

have resulted in softer committed performance levels for AMP7. This approach reflects a level of ambition that would deliver a considerable improvement compared to our AMP6 performance.

Caps and collars have been included for this performance commitment. A cap is justified on the grounds that as this performance commitment has an in-period ODI we have taken into consideration the importance of bill smoothing to reflect customers' preferences. When combining all data sources from the draft Business Plan consultation we found that there was least support for the faster plan, and broadly a 50/50 split between preferences for the slower and suggested plan. We took from this that our customers did not want bills to be increased by any more than the faster plan, which the proposed cap ensures. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance.

The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

The standard penalty collar (at 12 minutes) has been set at just below where our PR14 target for 2019/20 is at (at 12.2 minutes), i.e. if we do not improve on our end of AMP6 target performance we would incur a maximum penalty. This also excludes the impact of major events impacting our performance, which are beyond management control.

The outperformance payment cap (at 1 minute) has been set at a rate that is beyond the frontier achieved in the industry to date (the best performance recorded in the industry was at 1.48 mins). The outperformance payment (outside of P90) has been set at a level of performance that was proposed in our 'faster' improvement target in the draft Business Plan.

Our proposed AMP7 targets are provided below for information. The stretch for this performance commitment is to achieve the forecast upper quartile level of performance.

Although our Business Plan target for unplanned customer minutes lost is to achieve 12.2 minutes per property in 2020, the unit has been converted (to time) to reflect the unit of measurement adopted across the industry, to be more easily understood by customers and stakeholders. We therefore propose that the table below be included in our final determination.

Committed Performance Levels							
Supply Interruptions > 3 hours	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Hours: mins: secs	0:12:12	0:04:12	0:03:36	0:03:00	0:02:24	0:01:48
Underperformance Penalty Deadband	Hours: mins: secs		0:04:12	0:03:36	0:03:00	0:02:24	0:01:48
Standard Underperformance penalty collar	Hours: mins: secs		0:12:00	0:12:00	0:12:00	0:12:00	0:12:00
Outperformance Payment Deadband – tier 1	Hours: mins: secs		0:04:12	0:03:36	0:03:00	0:02:24	0:01:48
Outperformance Payment Deadband – tier 2	Hours: mins: secs		0:01:30	0:01:30	0:01:30	0:01:30	0:01:30
Standard Outperformance Payment Cap	Hours: mins: secs		0:01:00	0:01:00	0:01:00	0:01:00	0:01:00

Table 8-12 - Supply Interruptions – Committed Performance Levels

8.3.8. Costs, Benefits and Incentive Rates

We have applied Ofwat’s standard formula for this performance commitment:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The incremental benefit is based on our customer valuation for planned and unplanned interruptions to supply, which vary depending on the duration of the event. The source of this value is stated preference and stated preference surveys. These values have been compared to other available values from other companies.

The standard outperformance and underperformance rates are calculated based on the triangulated WTP values for customers’ willingness to avoid supply interruptions, weighted by length of planned and unplanned interruptions and the respective values (using the NERA triangulated acceptability testing results).

This is translated into a value of £0.205m to avoid one minute of supply interruption on average per year. The costs are based on the unit cost of investment to deliver an average minute reduction of supply interruption as derived from our investment optimisation, calculated as £0.203m. The value is below:

C3 - Delivering outcomes for customers

1. Performance Commitment					
PC	Supply interruptions				
Units	Average supply interruption greater than three hours				
2a. Input values					
	Units	Lower	Central	Upper	
Planned outage 3-6 hours: avoiding one affected property	Properties at reduced risk	£24.00	£164.66	£489.80	
Planned outage 6-12 hours: avoiding one affected property	Properties at reduced risk	£32.50	£222.68	£658.80	
Planned outage 12-24 hours: avoiding one affected property	Properties at reduced risk	£44.40	£304.70	£916.20	
Unspecified interruption 3-6 hours: avoiding one affected property	Properties at reduced risk	£12.10	£184.49	£299.00	
Unspecified interruption 6-12 hours: avoiding one affected property	Properties at reduced risk	£12.10	£288.24	£470.80	
Unspecified interruption 12-24 hours: avoiding one affected property	Properties at reduced risk	£12.10	£323.85	£528.90	
Unspecified interruption >24 hours: avoiding one affected property	Properties at reduced risk	£534.20	£534.20	£3,464	
2b. Other inputs					
2017/18 data	Duration	Properties			
		Unplanned	Planned		
	0	42743	66		
	0 <= 3	50967	2716		
	> 3	8788	3262		
	> 6	12367	3968		
	> 12	8030	1		
	> 24	11883			
	Grand Total	134790	10013		
Source: WBvF5WNovell\IAccom_team\CPLAN\SSW\KPls\2017-18\12_March\Supply Interruptions. File: dg3_actual_kpl_report_2017-18_15-05-2018.Final					
3. Assessment of the value prior to addressing overlaps					
Unplanned					
	Properties	WTP - Lo	WTP - Ce	WTP - Higher	
0 -3 hours					
3 to 6 hours	8788	12	184	295	
6 to 12 hours	12367	12	288	471	
12 to 24 hours	8030	12	324	529	
>24 hours	11883	534	534	3,464	
	41,074				
Planned					
	Properties	WTP - Lo	WTP - Ce	WTP - Higher	
0 -3 hours					
3 to 6 hours	3262	24	165	490	
6 to 12 hours	3968	33	223	659	
12 to 24 hours	1	44	305	916	
>24 hours	0				
Total value					
	Mid point	Lower	Central	Higher	Total hours lost
0 -3 hours	1.5				
3 to 6 hours	4.5	184,623	2,158,419	4,224,687	54,225
6 to 12 hours	9.0	278,601	#####	8,436,502	147,015
12 to 24 hours	18.0	37,207	#####	4,241,983	144,558
>24 hours	28.0	6,351,104	6,351,104	41,183,436	335,131
		#####	#####	#####	678,929
	Total properties	536,138			
	Hours per property	1.27			
	Minutes per property	75.98			
	Weighted value per hour at one property	10.18	22.92	85.57	
	Weighted value per hour for all properties	#####	#####	#####	
	Weighted value £/yr per minute for	#####	#####	764,578	
4. Further adjustment for overlaps					
	None required				

Figure 8-8 - calculation of customer benefit for supply interruptions

We propose that for supply interruptions two levels of incentive rates will apply for our outperformance payments. This provides for additional incentive payments to be received where we deliver performance beyond the forecast frontier. To value the benefits for the higher level of performance we have used the upper value of customers' WTP as set out in the triangulation calculation.

The second tier rate is not an enhanced outperformance payment because the value is based on triangulated WTP – payments reflect a level of performance that was presented as the 'faster plan' approach in the draft Business Plan, which were set based on the upper range from the WTP survey. This approach is different to Ofwat's enhanced rates, which are multiples of customer WTP due to shifting industry frontier forward. Our upper WTP rates are at this level, but are justified by customer WTP at that level of service. In addition, the annual ODI cap in bills of £2.5m protects customer bill movements.

The costs have been taken from the Company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The

C3 - Delivering outcomes for customers

assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020- that contribute to the delivery of this outcome include:

- Increased network monitoring £2.3m
- Trunk mains monitors £0.8m
- Hydrant replacement (mains recharge) £3.0m

Full details of the investment cases can be found in the Appendix to Section C5 of our Business Plan.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per average customer minute	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual (average d) ²² £m	Total AMP7 £m	RORE %
Outperformance payment total					0.345	1.724	0.2
Outperformance payment – tier 2 (outside of P90)	0.765	-	0.382	Upper WTP	0.191	0.956	0.1
Outperformance payment – tier 1	0.205	-	0.102	Triangulated WTP	0.154	0.768	0.1
Underperformance penalty total	0.205	0.203	0.103	Triangulated WTP	-0.929	-4.644	-0.4

Table 8-13 - Supply Interruptions – Calculation of Incentive Rates

The overall penalty is £4.6m (0.4% RORE) and the total reward £1.7m (0.2% RORE). The profile of annual rewards and penalties is shown in the graph below. The 10 to 90% confidence interval is from -£4.6m (0.4% RORE) underperformance to £0.8m (0.1% RORE) outperformance.

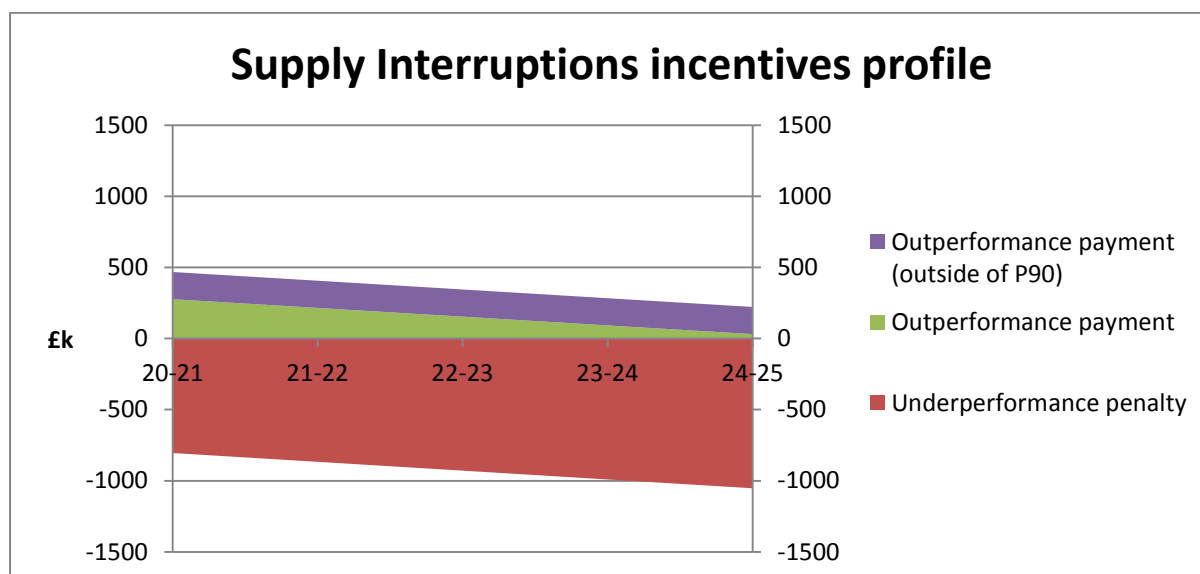


Figure 8-9 - Supply Interruptions Incentives Profile

²² This is the average total annual rate as the rates fluctuate throughout AMP7

Given the level of the higher rate of outperformance for above forecast upper quartile for the industry (1.5 mins per property per annum, this sits outside of the P90 range.

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.3.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

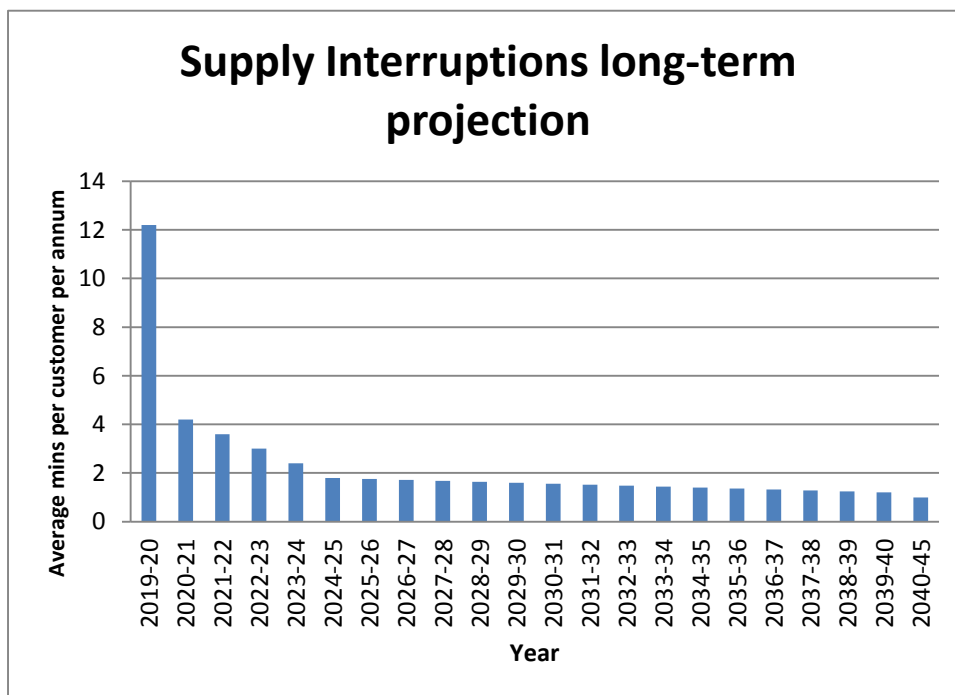


Figure 8-10 - Supply Interruptions long-term projection

Interruptions to supply is consistently ranked as a high priority for our customers, and it is therefore our long-term ambition to reduce interruptions to an average of one minute per property served.

8.4. Mains Bursts

8.4.1. Definition



We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). This requires the reporting of the number of mains bursts per thousand kilometres of total length of mains. Mains bursts include all physical repair work to mains from which water is lost. This is attributable to pipes, joints or joint material failures or movement, or caused or deemed to be caused by conditions or original pipe laying or subsequent changes in ground conditions (such as changes to a road formation, loading, etc. where the costs of repair cannot be recovered from a third party).

8.4.2. Customer views

We focused on talking to customers about areas of service where they could directly understand the impact on them. For example, we discussed their experience of unplanned outage, the extent to which they valued reducing instances of this, and what service they expected when outages happen.

We discussed mains bursts explicitly with customers when we asked them about our proposed performance commitments. In this instance, mains bursts were one of the higher priorities for customers, but not the highest. Customers felt that supply interruptions can be just a short-term inconvenience, but nevertheless it was important to them to know that Bristol Water had the capacity to deal with such events and minimise the impact on customers – especially in relation to traffic disruption.

Engagement and research with customers on their views on reliability and interruptions to supply include:

- Customer priorities focus groups(B5);
- Online Customer Panel (A4);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Revealed preference research (B15); and
- Triangulation by attribute (B20).

8.4.3. Regulatory requirements

Ofwat expects companies to have four common performance commitments on asset health: mains bursts, unplanned outages, sewer collapses and treatment works compliance. Only the first two metrics apply to water only companies. It has therefore been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. At PR14 mains bursts was reported as a total number of bursts per year and included as a sub-indicator to our Asset Reliability (Infrastructure) performance commitment. At PR19 it must be reported as a separate metric and we have been working with Ofwat and the rest of the industry to align the reporting definition to help customers understand comparative performance.

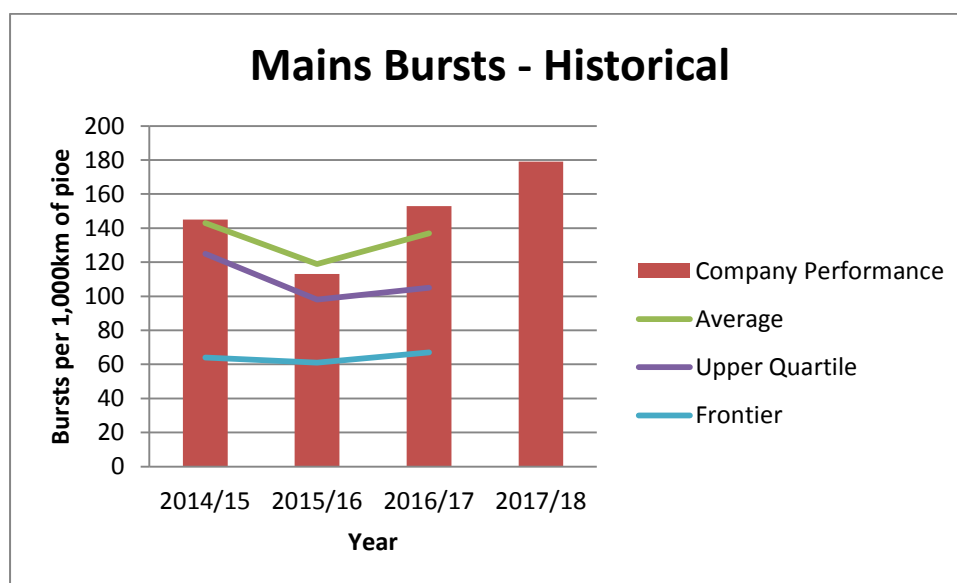
For comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance.

C3 - Delivering outcomes for customers

Our targets proposed to roll forward our average performance to date, which would mean we are significantly behind the upper quartile level of performance. We have a relatively old network and a significant proportion of mains laid during the post-war period (when poorer quality materials were used), which may be contributing towards the below average performance.

Mains Bursts – Historical Information		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	142	142	142
	Company Performance	145	113	153	179
Industry	Average	143	119	137	N/A
	Upper Quartile	125	98	105	N/A
	Frontier	64	61	67	N/A

Table 8-14 - Mains Bursts – Historical Information



Bristol Water has historically been performing worse than the average company across the industry. This is due to the historic age of the network assets, which are the oldest in Europe on average according to European benchmarking data.

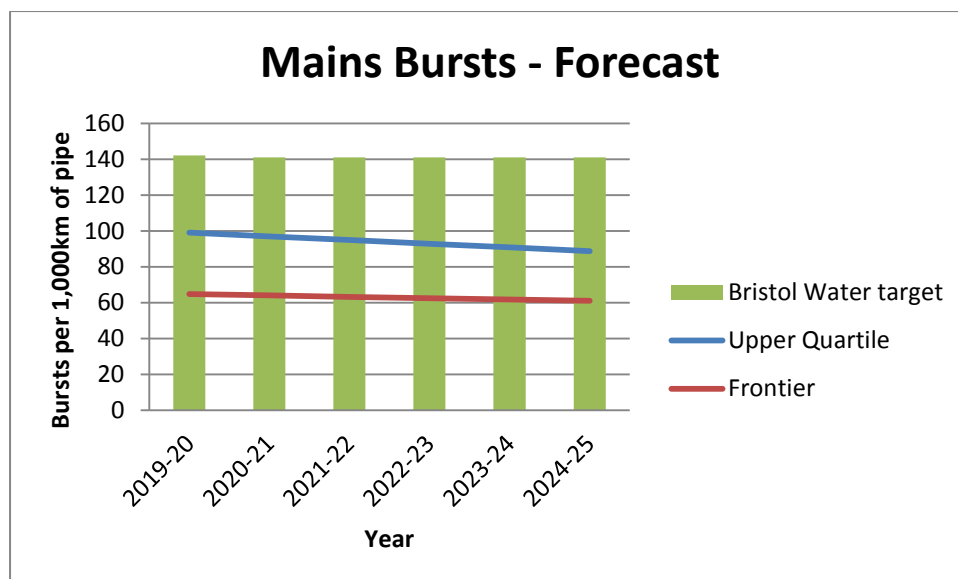


Figure 8-11 - Mains bursts forecast performance

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	N/A	The benefits for delivering this performance commitment are linked to supply interruptions and leakage		
Comparative information	89	This target assumes Bristol Water could achieve the industry forecast upper quartile level of performance. However this is not a customer priority for improvement and the cost of reducing mains bursts would not be cost beneficial based on the least cost improvements we target for areas such as leakage and supply interruptions. Comparative information in this situation has not informed our investment planning, given the older network evidence we present in Section C5 – Cost and Efficiency.		
Historical information	142	Our average historical performance since 2014/15 is 148 bursts. As our performance is worse than the target, this approach proposes to keep the target in line with PR14		
Historical information	113	This is our best historical performance since 2014/15		
Minimum improvement	114	A 20% improvement rate on our PR14 target would result in this target		
Maximum level attainable	64	This target assumes Bristol Water could achieve the industry forecast frontier level of performance		
Expert knowledge	141	This value takes into account the historic age of our network assets. This was included in our Draft Business Plan	✓	
Expert knowledge	133	This target takes into account our network		✓

C3 - Delivering outcomes for customers

		age but also the potential for other improvements		
--	--	---	--	--

Table 8-15 - Mains Bursts – Draft Business Plan Proposals

8.4.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because it is driven by the activity of maintaining the network.

8.4.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’, published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. The long-term target was a commitment to continue to reduce bursts in the long-term, rather than committing to a precise number.

We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of the consultation on our draft Business Plan.

The table below summarises this published information.

			2024/25 Target			2050 Target
Performance commitment	Unit	2019/20 Baseline Target	Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Mains Bursts	Per 1,000 km of mains	142	N/A	141	N/A	Continue to reduce level of bursts in long term
Forecast increase to the average bill from additional investment			N/A	N/A	N/A	N/A

Table 8-16 - Mains Bursts – Draft Business Plan Proposals

We updated the target to reflect the benefit of a range of improvements that arise from other investments, in particular tackling leakage and supply interruptions. The performance level outcome amounts to 133 bursts per 1,000km of mains.

8.4.6. Draft Business Plan Consultation feedback

There was no explicit consultation on this performance commitment; it formed part of our “safe and reliable supply’ outcome. The slower plan package received the most support (50%), perhaps unsurprisingly as the suggested plan was an increase of £9 – the highest component areas suggested. This reflected that customers were content with current levels of performance as they rarely experienced the consequences of bursts, in particular interruptions to supply, and were happy with the response when they occasionally did occur.

8.4.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

C3 - Delivering outcomes for customers

Mains Bursts –Summary						
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Penalty (£m) – total 2020-25
Expert knowledge	142	133	Under Only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	- 3.890m
						Penalty (£m) within P10 – total 2020-25
						- 1.750m

Table 8-17 - Mains Bursts –Summary

The overall ODI design and performance commitment targets are presented in the chart below.

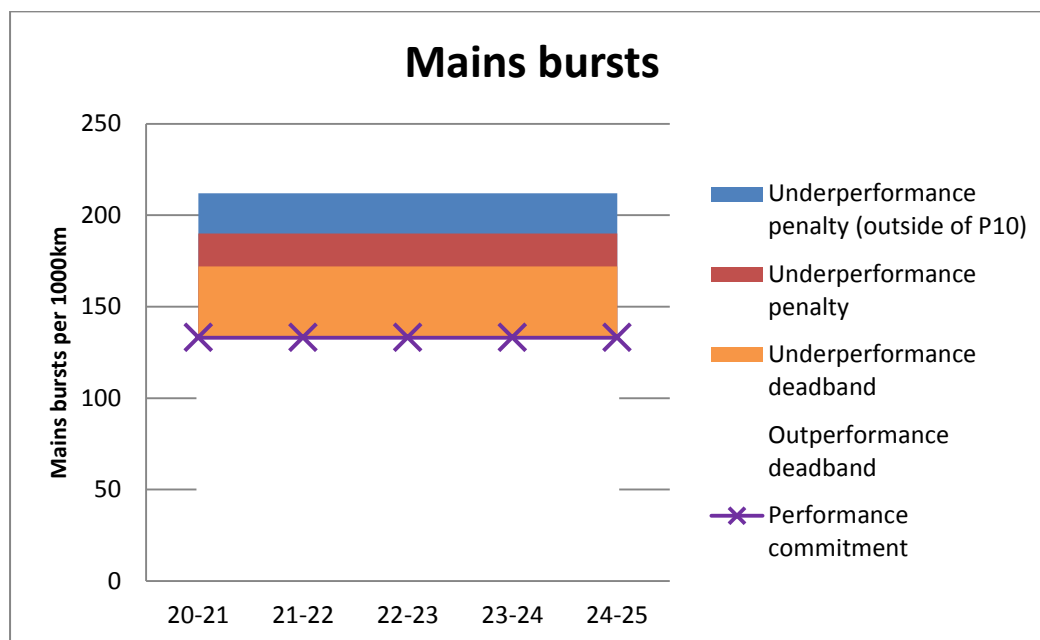


Figure 8-12 - Mains bursts ODI design

The stretch in the targets has been determined using expert knowledge. As this is an asset health performance commitment, the targets have been informed by engineering expertise about what improvements can be made in the future. We have a relatively old network and a significant proportion of mains laid during the post-war period (when poorer quality materials were used), which may be contributing towards the below average performance. We have however proposed a 2024/25 target that is more challenging than that proposed in our draft Business Plan.

We have proposed a deadband for this metric, reflecting a degree of annual variation in burst levels, so that penalties are only payable where deterioration in performance appears to be related to under- or poorly-targeted investment i.e. the deadband is a reflection that some instances of burst rates are a reflection of extreme weather conditions and therefore are outside of management control.

C3 - Delivering outcomes for customers

Collars have been included for this performance commitment. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The penalty collar has been set at our worst performance to date (recorded in 2010-11), and is therefore set at a level likely to protect customer interests whilst capping unexpected or extreme scenarios.

The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

No outperformance payment has been included because our performance is not near the industry upper quartile level of performance.

Our proposed AMP7 targets are provided below for information. The level of stretch for the targets has taken into account the age of our network.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Mains bursts	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Per 1,000 km of mains	142	133	133	133	133	133
Underperformance Penalty Deadband	Per 1,000 km of mains		172	172	172	172	172
Standard Underperformance penalty collar	Per 1,000 km of mains		212	212	212	212	212

Table 8-18 - Mains Bursts –Committed Performance Levels

8.4.8. Costs, Benefits and Incentive Rates

We have not applied Ofwat's standard formula for this performance commitment. The rate proposed is greater than the rate that is calculated using the standard Ofwat formula; the deviation away from the formula is in our customers' interests and this approach carries greater risk to Bristol Water than a cost only approach. We have applied a cost-only incentive, based on the following formula:

- $5^* (\text{unit cost}^* 50\% \text{ customer sharing rate})$

When undertaking our cost benefit analysis, we have taken into account the benefits that the improvements in this performance commitment will have on our supply interruptions and leakage performance commitments. We have therefore chosen to apply a cost-based incentive as the majority of the benefits by the interruptions to supply and leakage performance commitments. The benefit value for this performance commitment has been derived from flooding and low pressure. The benefit values are discussed further below.

As a result we use a multiplier of cost as an asset health measure to reflect the deadband and poor performance protection for historic investment (which was higher to improve network performance in the past).

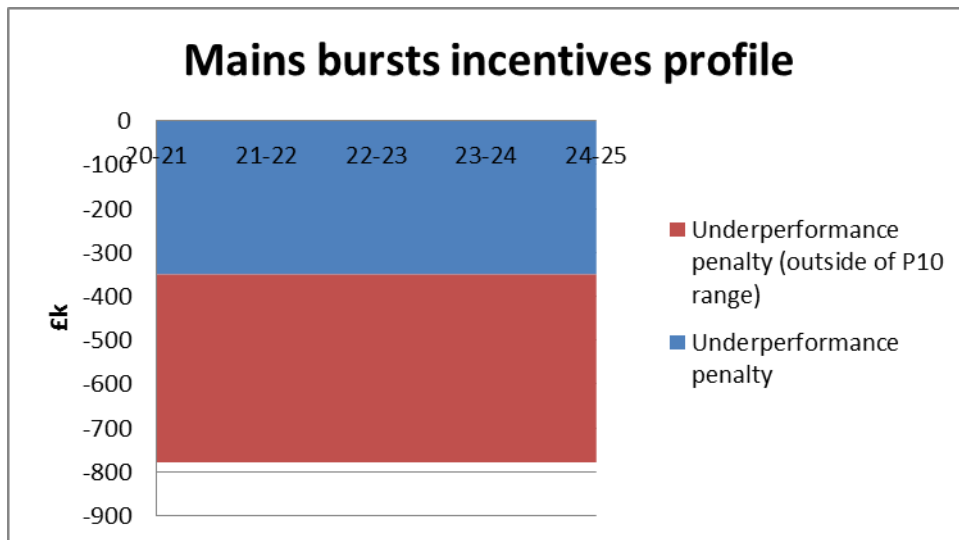
C3 - Delivering outcomes for customers

The costs have been taken from the Company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. Investments that contribute to the reduced mains bursts target are similar to supply interruptions, including targeting distribution network zones for a wide range of leakage and interruption risks. In addition £3.1m on "sliplining" projects delivers water compliance, mains bursts, leakage and discoloured water benefits in our plan. All optimised costs in the investment programme are allocated to performance commitments based on their relative contribution to the measures. The investments are first optimised based on the customer WTP to achieve target service levels, and then these are fixed with the programme re-optimised to deliver this at least cost. Where this programme delivers benefits that are not direct customer requirements, then the service level selected reflects the benefit of this least cost programme. Mains bursts is an example where the investment programme did not determine that mains bursts should reduce from the current 142 level, but the revised target of 133 is the outcome from the leakage, supply interruption and other investments that are driven as customer priorities by their WTP. This is in line with asset health measures as this ensures that future customers will continue to see the benefit of past and future investment, should innovation to deliver other service levels prove in the long-run not to be sustained. This also justifies the deadband for short term performance and the penalty only nature of the ODI. There continues to be strong evidence that this approach at Bristol Water will continue to protect customers including the improvement in mains bursts that is the least cost outcome of the customer choice driven plan.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per mains bursts, per 1000km mains	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Underperformance penalty total					-0.778	-3.890	-0.4
Underperformance penalty	0.004	0.008	0.019	5* unit cost (with 50% share) in order to penalise poor asset health	-0.350	- 1.750	-0.2
Underperformance penalty (outside of P10)	0.004	0.008	0.019	5* unit cost (with 50% share) in order to penalise poor asset health	-0.428	-2.139	-0.2

Table 8-19 - Mains Bursts – Calculation of Incentive Rates



We assess that mains bursts above 190/1000km will incur less than 10% of the time, based on the historic data. This means that £2.139m (0.2% RORE) of the mains burst penalty falls outside of the 80% central range, with £1.750m (0.2% RORE) within it.

The potential penalty is a flat £778k per annum, based on the cost of delivering the target improvement multiplied by five, in order to provide sufficient incentive to deliver the investment. No glidepath for improvement is assumed given that Bristol Water is above the industry upper quartile, and to reflect that there is natural variation and to avoid disincentivising fixing bursts for leakage and supply interruptions for asset health a deadband is included.

The WTP for mains bursts was estimated using a calculation of the impact on pressure and internal and external flooding risk. However, consistent with customer impacts and WTP, this ignores leakage and supply interruption valuations, and results in a WTP below annual maintenance cost (per burst per 1000km mains). The value is below:

1. Performance Commitment

PC	Mains burst
Units	Bursts per 1,000km

2a. Input values

	Units	Lower	Central	Upper
Supply interruptions	Property minute	£90,965	£204,772	£764,578
Leakage	MI/d	£321,683	£321,683	£5,897,518
Aesthetic - Discoloured water one-off	Per property per incident	£80.00	£230.00	£500.00
One-off pressure	Incidents	£80.00	£200.00	£310.00
Internal flooding incident	Nr of properties addressed	£16,470	£28,789	£38,179
Garden	Nr of areas mitigated	£1,647	£2,879	£3,818

2b. Other inputs

Number of mains bursts per km	142	Data from 2019/20
Number of km mains	6828.07	
Number of mains bursts	969,58594	
Average properties affected by low pressure per burst	2.783882784	
Likelihood that one property floods following a burst	0.11%	

3. Assessment of the value prior to addressing overlaps

Unit	Units affected (given a burst)	Lower			Central			Upper		
		Lower	Central	Upper	Lower	Central	Upper	Lower	Central	Upper
Pressure	3	£80	£200	£310	£223	£557	£863			
Internal water flooding	properties	0.11%	£16,470	£28,789	£38,179	£18	£31	£41		
External water flooding	properties	0.11%	£1,647	£2,879	£3,818	£2	£3	£4		
					£242	£591	£908			

4. Further adjustment for overlaps

None required

Figure 8-13 - calculation of benefit for Bursts

The source of these values are:

- Pressure = WTP survey – stated preference studies; and
- Flooding = sourced from value transfer using damage costs.

Our WTP for this performance commitment is based on the impact of a burst on the service that customer receive. We have therefore estimated the likelihood that a burst will lead to pressure problems and flooding problems.

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.4.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

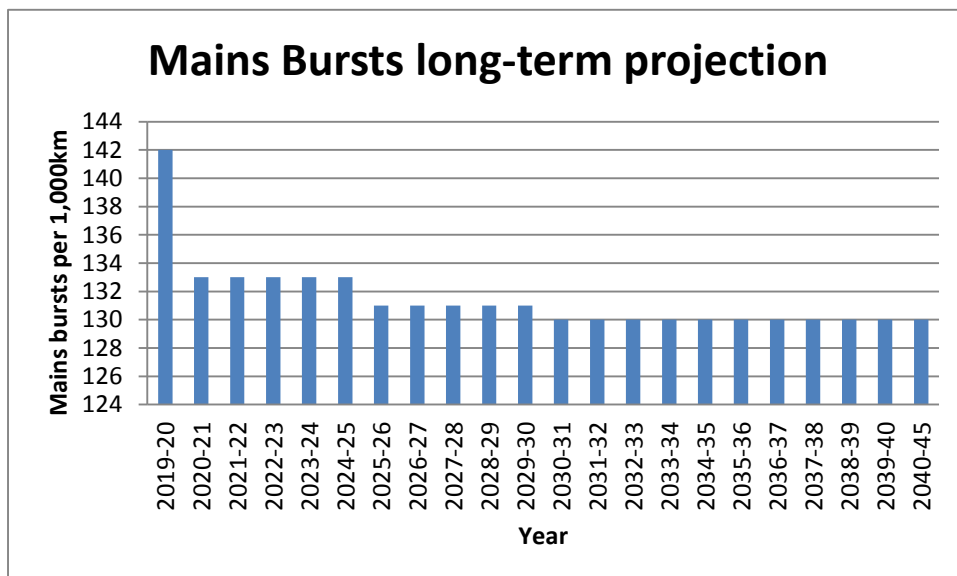


Figure 8-14 - Mains Bursts long-term projection

It is our long-term ambition to continue to reduce the level of bursts.

8.5. Unplanned outage

8.5.1. Definition

We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). Unplanned outage is a temporary loss of maximum production capacity.

This measure is to be used as a means of assessing asset health (primarily for non-infrastructure - above ground assets), for water abstraction and water treatment activities. It is defined as the annualised unavailable flow, based on the peak week production capacity (or PWPC), for each company. This measure is proportionate to the frequency of asset failure as well as the criticality and scale of the assets that are causing an outage.

8.5.2. Customer views

Reliability of water supply is consistently a priority for customers. While many customers often accept that unexpected interruptions cannot always be avoided, some customers expect that a reliable service will be provided and this should not come at an increased cost to the customer.

Reliability of supply is a higher priority for customers who have experienced interruptions recently. These customers tend to be more concerned about experiencing disruptions in the future. These customers also tended to value the quality of our response. Ongoing customer data tells us that customers do regularly contact us when they experience interruptions, however they are generally satisfied with our response.

We specifically spoke to some of our more vulnerable customers about supply interruptions, as we know they are often the most affected. They asked us to be honest and transparent about the possible length of the outage to allow them to plan appropriately, and to update them through various communication channels to reach more people.

To better understand what it's like to deal with an interruption we talked to almost 800 customers who had recently lost their supply. As with our customer contact data we find that most customers are positive about our response to an interruption, they appreciate when we respond quickly and give clear information – where customers weren't satisfied it was most often because we hadn't been able to tell them how long the interruption would last²³. This research used a technique called revealed preference to measure the actual costs customers faced when the interruption happened, giving us another way to estimate the value of avoiding supply problems.

We discussed unplanned outage as a performance commitment explicitly with customers. In this instance, this was not prioritised as a means to measure our performance as they felt they tended to be short-term disruptions that were bearable for the majority of customers.

We used a range of different methods to understand our customers' willingness to pay for reducing the number of properties affected by an unplanned outage, including a revealed preference survey mentioned above. We found a high variance of responses, particularly between domestic and business customers. Our triangulated values, which average across all types of customers, suggest a central valuation of £534.20 for interruptions lasting a few days, and £1,339.60 for interruptions of a few weeks. For works outage, that may not result very often in a supply interruption, so we did not use these values as the risk with our resilient network and production assets is too remote.

²³ Revealed preference research, Autumn 2017. Customer experience of attributes review, 2017 (based on customer contact data).

Engagement and research with customers on their views on reliability and interruptions to supply include:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Revealed preference research (B15); and
- Triangulation by attribute (B20).

8.5.3. Regulatory requirements

Ofwat expect companies to have four common performance commitments on asset health: mains bursts, unplanned outages, sewer collapses and treatment works compliance. Only the first two metrics apply to water only companies. It has therefore been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion.

This is not traditionally a metric that either we or the rest of the industry has reported on, but in the last reporting period we worked with Ofwat and the rest of the industry to align the reporting definition to help customers understand comparative performance.

As this is a new performance commitment for PR19, we do not currently have committed service level targets. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. As companies have not previously reported against this measure it is not possible therefore to provide comparative information.

Unplanned Outage – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	-	-	-
	Company Performance	1.61	1.52	1.52	1.5

Table 8-20 - Unplanned Outage – Historical Information

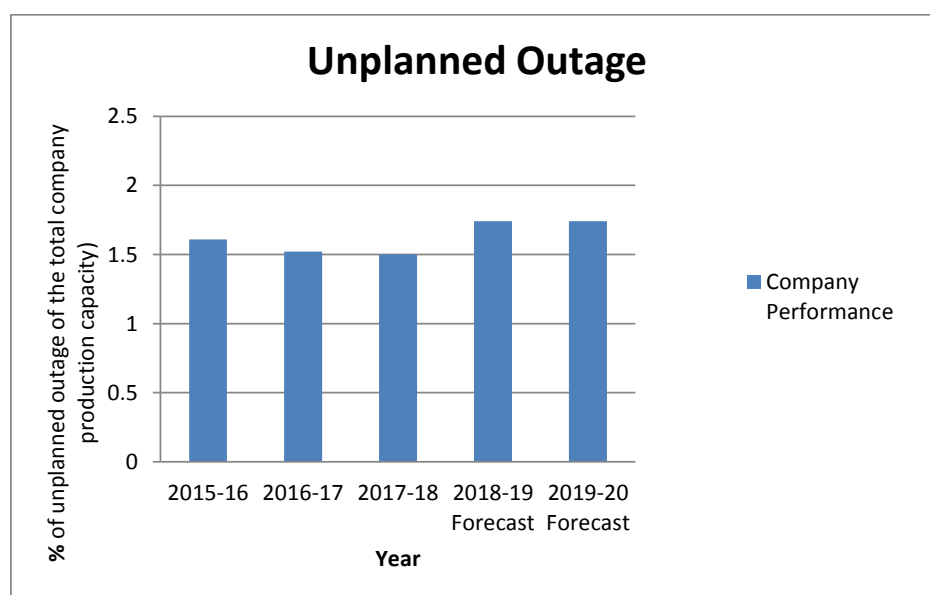


Figure 8-15 - Unplanned Outage historic performance

C3 - Delivering outcomes for customers

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	0.4	This target takes into account the potential for other improvements, based on performance to date. This was included in our Bristol Water Clearly	✓	
Comparative information	N/A	Comparative information is not available		
Historical information	1.54	Our average historical performance since 2014/15 is 1.54, however there is unreliability in the data		
Historical information	1.52	This is our best historical performance since 2014/15		
Minimum improvement	1.23	A 20% improvement rate on our average historical performance		
Maximum level attainable	0	This target assumes Bristol Water could achieve full compliance		
Expert knowledge	1.74	This value takes into account that our historic data has been collected using a method that differs from the method which will be employed in future years (as we align our reporting methodology to that used across the industry)		✓

Table 8-21 - Unplanned Outage – Assessment of approaches to setting performance commitment

8.5.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because of the link to water treatment activity.

8.5.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’ , published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Unplanned Outage	%	N/A (new measure)	-	0.4	-	0
Forecast increase to the average bill from additional investment			N/A	N/A	N/A	N/A

Table 8-22 - Unplanned Outage –Final Performance Commitments

8.5.6. Draft Business Plan Consultation feedback

As this is a measure of asset health, there was no explicit consultation on this performance commitment.

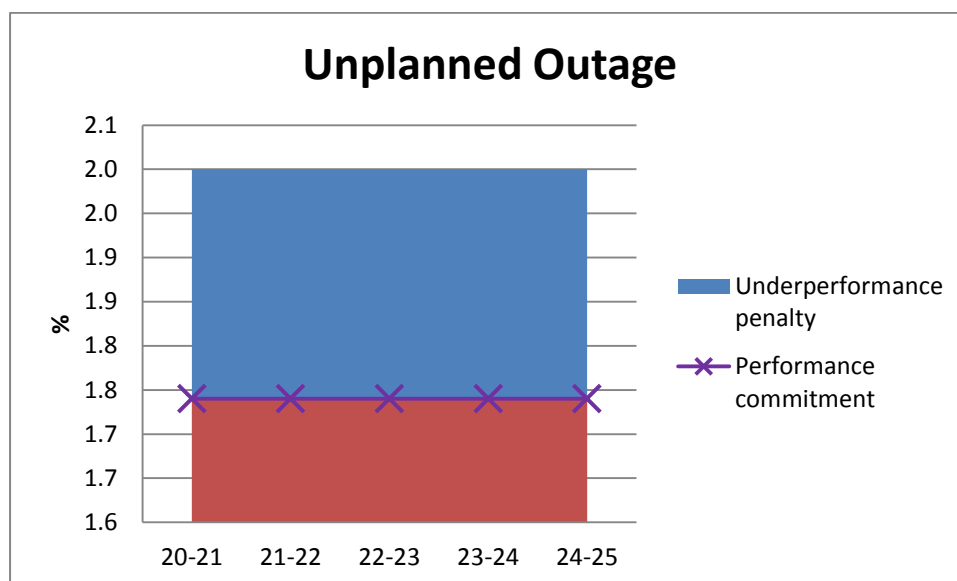
8.5.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Unplanned Outage - Summary						
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Penalty (£m) – total 2020-25
Expert knowledge	1.74	1.74	Under Only		<input checked="" type="checkbox"/>	-0.496
						Penalty (£m) within P10– total 2020-25
						-0.496

Table 8-23 - Unplanned Outage – Summary

The overall ODI design and performance commitment targets are presented in the chart below.



As this is an asset health metric that has no reliable performance information to benchmark against, we have set our service levels for AMP7 based on the expert knowledge of Bristol Water staff. The target has therefore been set at around the average historical performance to date (but this also takes into account the immature dataset). This performance commitment does not, however, have a direct impact on our customers.

As this is a measure of asset health and there is no evidence of customer priority (they customers are more concerned with outages that result in supply interruptions), we have not proposed any rewards. However, our view is that a small penalty is felt to be appropriate

C3 - Delivering outcomes for customers

given the contribution to asset health, but that the level of this should be limited to reflect lack of certainty in the data and comparative performance. No deadband has been proposed (as improvements may be possible with the introduction of this metric) but a collar has been set at 2%, again reflecting the uncertainty in the historical data.

Collars have been included for this performance commitment. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

Our proposed AMP7 targets are provided below for information. As this is a new performance commitment with little reliable historical information it has not been possible to set targets that stretch any further than the suggested level of performance. Targets in AMP8 should be re-set once performance in AMP7 is known. We propose that the table below be included in our final determination.

Committed Performance Levels							
Unplanned Outage	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	1.74	1.74	1.74	1.74	1.74	1.74
Standard Under-performance penalty Deadband	%		1.74	1.74	1.74	1.74	1.74
Standard Under-performance penalty collar	%		2.0	2.0	2.0	2.0	2.0

Table 8-24 - Unplanned Outage – - Committed Performance Levels

8.5.8. Costs, Benefits and Incentive Rates

We have not applied Ofwat's standard formula for this performance commitment. The rate proposed is greater than the rate that is calculated using the standard Ofwat formula; the deviation away from the formula is in our customers' interests and this approach carries greater risk to Bristol Water than a cost only approach. We have applied a cost-only incentive, based on the following formula:

- $2^* (\text{Unit cost}^* 50\% \text{ customer sharing rate})$

As the maintenance costs are indirect, we did not apply a 50% sharing rate to this spend as in reality it is not possible to accurately separate unplanned outage spend from any other area of investment. Effectively for asset health penalties and to recognise the deadband we use 2^* cost and then apply the 50% sharing rate.

We have chosen to apply a cost-based incentive as this is a new performance commitment, no historic data to link to reliable benefit value. We have estimated a benefit value using the impact of our water resource plan on the risk of hosepipe bans being required. However whilst we have values for more severe restrictions we recognise that more modelling is required. The benefit values are discussed further below.

C3 - Delivering outcomes for customers

The costs have been taken from the company’s optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat’s guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 (outside of mains renewals) that contribute to the delivery of this outcome include:

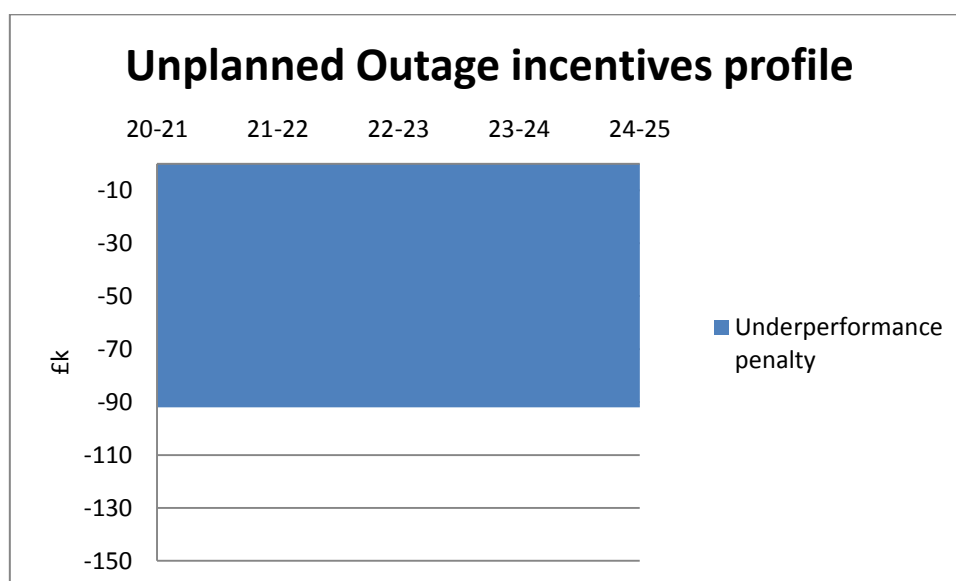
- Raw water pumping stations;
- Treatment works strategic maintenance; and
- ICA and telemetry.

Full details of the investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per % unplanned outage	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Underperformance penalty total	0.103	0.381	0.381	WTP linked to water restriction valuations. Used cost for asset health	-0.099	-0.496	-0.0

Table 8-25 - Unplanned Outage – Calculation of Incentive Rates



As a new metric, we assessed that this was within the P10 central range for ODI incentives.

The WTP was calculated using the risk of hosepipe bans from our WTP surveys, after assessing what improvement in unplanned outage would relate to the levels of service set out in our Drought Plan. The source of the hosepipe value is stated preferences, benefits transfer and slider. For non-domestic customers we have also included a macroeconomic study that focuses on the loss of economic output.

C3 - Delivering outcomes for customers

Hosepipe bans value per MI/d	Lower	Central	Upper
Value per property affected per expected day	£0.07	£0.33	£1.18
Properties affected	502,633	502,633	502,633
Value per expected day	£32,852	£164,259	£591,333
Expected days	5.1	5.1	5.1
Total value for change	£167,544	£837,722	£3,015,798
Value per MI/d	£7,537	£37,684	£135,663

1. Performance Commitment

PC	Unplanned outage
Units	%

2a. Input values

	Units	Lower	Central	Upper
Outage	MI/d	£7,537	£37,684	£135,663

2b. Other inputs

Maximum production capacity	556.5
1% of maximum production capacity	5.565
Works output	274
Impact on works output	49%

3. Assessment of the value prior to addressing overlaps

Lower	Central	Upper
£20,686	£103,432	£372,355

4. Further adjustment for overlaps

None required

Figure 8-16 - calculation of benefit for Unplanned Outage

This translated into £103k per 1% works unplanned output, based on 274MI/d works output. This value was used because of the potential impact on customers.

The performance commitment has been allocated to the Water Network Plus price control, because the performance costs related to treatment works.

8.5.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

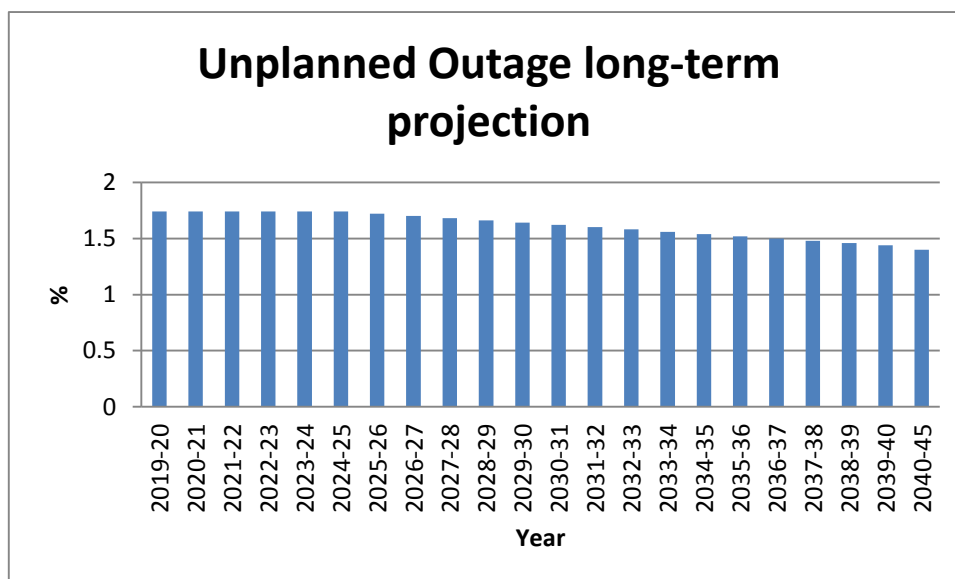


Figure 8-17 - Unplanned Outage long-term projection

It is our long-term ambition to eventually be fully compliant, but our current forecasts take into account the unreliability in the data, as this performance commitment is new for AMP7 and has no historical performance.

8.6. Risk of severe restrictions in a drought

8.6.1. Definition

We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). This is the percentage of the customer population at risk of experiencing severe restrictions (for example, standpipes or rota cuts as part of Emergency Drought Orders - EDO) in a 1-in-200 year drought, on average, over 25 years.

8.6.2. Customer views

Our supply area is not water-stressed, and many of us living in the area have never experienced drought. This can affect how customers prioritise drought measures. Our research has shown that customers are happy with the level of drought risk that we currently manage for, and few customers rank it as a high priority. However, business customers have more concerns - and value avoiding droughts more highly, because of the impact on their profits.

When talking to customers about managing the risk of drought, and considering various water resource options, customers consistently prioritise reducing demand through water efficiency, leakage reduction, and metering, over increasing supply. We engaged specifically with customers on our Water Resources Management Plan, and found that they were largely supportive of our approach to focusing on demand-reduction in the short term and revisiting the plan regularly to ensure it meets long-term needs in the Bristol Water area. We found that they were broadly happy with the levels of drought risk at the time (1 in 15 years for hosepipe bans, 1 in 33 years for TUBs). In focus groups on our early draft performance commitments drought risk was second bottom, reflecting customers' lack of concern.

We also asked customers their opinions on hosepipe bans and TUBs (Temporary Use Bans). Hosepipe bans are consistently given as a low priority across the customer research, and due to a perceived low risk of drought, customers do not value a reduction in the

C3 - Delivering outcomes for customers

instances of TUBs. These opinions were reflected in customers' willingness to pay, as our valuation studies gave a low value of £0.10 to reduce the number of properties affected by a hosepipe ban, and £1.80 as the highest value. Customers valued a reduction in the instance of more serious level 4 drought restrictions more highly, with a low figure of £13.60 and the higher value of £110.70. In both cases these are weighted averages, reflecting the fact that business customers are willing to pay more than domestic customers.

Following on from triangulation, we wanted to test the "low", "medium" and "high" values with customers, to test their acceptability of the values used, which resulted in the "expected" values, as shown below.

Estimated "Expected" Willingness to Pay by Service Attribute

Service Attribute	WTP Units	"Low" WTP	"Med" WTP	"High" WTP	"Expected" WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 80 - Customer WTP values

The triangulated valuation resulted in a value of £56.60.

Engagement and research with customers on their views on drought restrictions include:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Customer experience of attributes review (B4);
- Deliberative resilience research (B11);
- Focus groups on performance commitments (B14); and
- Triangulation by attribute (B20).

In the focus groups customers suggested a reputational incentive, due to Bristol Water's lack of control over the wider climate. Ofwat also recommended this performance commitment be reputational in its methodology statement. We have adopted this recommendation.

8.6.3. Allocation to price control

The performance commitment has been allocated to the Water Resources price control, because the activities covered include raw water storage

8.6.4. Regulatory requirements

As this is a new performance commitment for PR19, we do not currently have committed service level targets. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. This is not traditionally a metric that either we or the rest of the industry has reported on but in the last reporting period we worked with Ofwat and the rest of the industry to align the reporting definition to help customers understand comparative performance. It is not possible therefore to provide comparative information. The target has been set at the maximum level attainable i.e. there is no further stretch possible beyond the 0% target. Ofwat also recommended that the ODI for this performance commitment be reputational.

Risk of severe restrictions in a drought – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	-	-	-
	Company Performance	0	0	0	0

Table 8-26 - Risk of severe restrictions in a drought – Historical Information

As the target is to achieve the maximum level attainable no other approaches to setting the performance commitment levels have been considered.

8.6.5. Draft performance commitment, targets and long-term ambition

We included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was included as part of our draft Business Plan.

It was included within our long-term ambition document, but the precise definition and long-term target were not specified.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target		
			Slower improvement	Suggested improvement	Faster improvement
Risk of severe restrictions in a drought	%	N/A (new measure)	-	TBC (new measure)	-
Forecast increase to the average bill from additional investment			N/A	N/A	N/A

Table 8-27 - Risk of severe restrictions in a drought – Draft Business Plan Proposals

8.6.6. Draft Business Plan Consultation feedback

There was no explicit consultation on this performance commitment in our draft Business Plan; however we know from a range of research and engagement (particularly in relation to

C3 - Delivering outcomes for customers

our Water Resources Management Plan research) that customers have a low Willingness to Pay for drought restrictions, so we did not ask them about this specifically in our draft Business Plan consultation.

Our wider customer consultation indicates that reducing risk of drought is not currently a customer priority, as through water efficiency and leakage there is a tolerable risk of supply interruptions and customers have expressed an aversion to developing new water resources in these circumstances.

8.6.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following, which is consistent with the information presented in our WRMP:

Risk of severe restrictions in a drought - Summary			
Stretch	2019/20 Baseline	2024/25 Target	ODI
Maximum level attainable	0	0	Reputational

Table 8-28 - Risk of severe restrictions in a drought – Summary

We have adopted Ofwat’s recommendation that this performance commitment has a reputational ODI. As this has a reputational ODI there is no impact on our customers’ bills. But effective dissemination of our performance information will be needed to increase the reputational impact of our performance commitment. There is a strong reputational incentive to achieve or outperform our performance commitment levels because we have to report our performance in our Annual Performance Reports. The reports are publicly available on our website, which enable our customers and the Bristol Water Challenge Panel to challenge us on our performance. We also report on our performance on an interactive performance webpage, shown below, where our customers can learn about our reputational and our financial performance commitments.

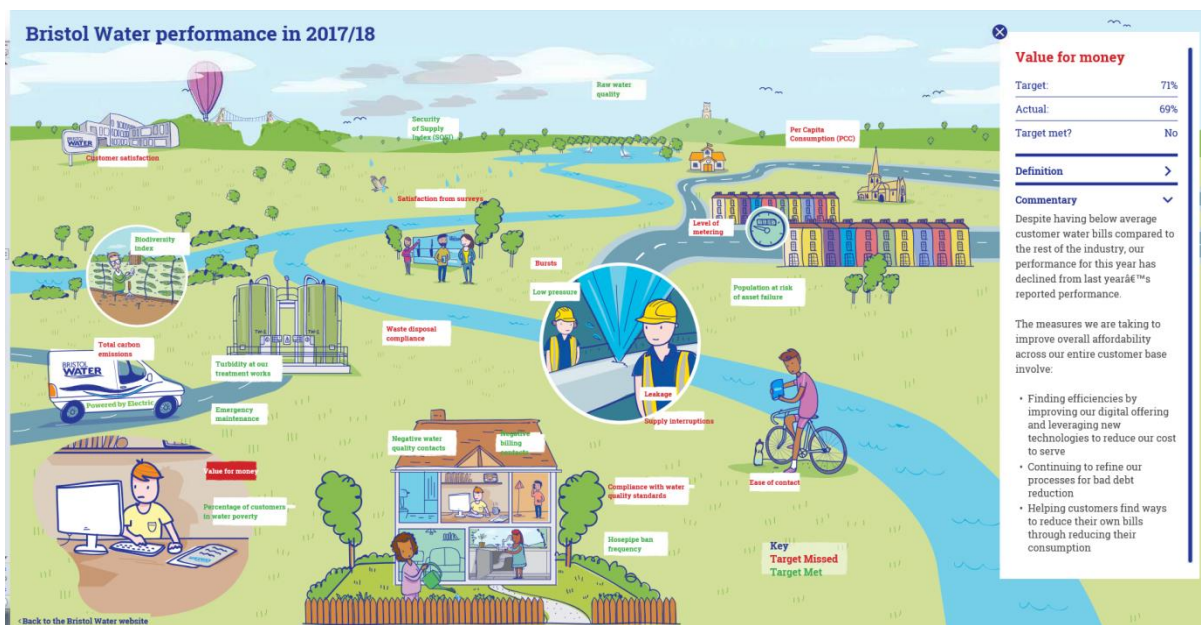


Figure 8-18 - Interactive performance graphic on www.bristolwater.co.uk

C3 - Delivering outcomes for customers

Our proposed AMP7 targets are provided below for information. The target has been set at the maximum level attainable i.e. there is no further stretch possible beyond 0% of customers at risk.

We propose that the table below be included in our final determination.

Committed Performance Levels									
Risk of severe restrictions in a drought	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25		
PC	%	0	0	0	0	0	0		

Table 8-29 - Risk of severe restrictions in a drought – Committed Performance Levels

8.6.8. Costs, Benefits and Incentive Rates

As we have opted for a reputational ODI, WTP has not been taken into consideration. In our research customers had no WTP for a reduced risk of water restrictions from the current standard of 1:15 years, although in reality a higher standard of services is already delivered (1:25 years). Severe restrictions are outside of our normal planning horizon because of the overall resilience.

The performance commitment has been allocated to the Water Resources price control, because the activities covered include raw water storage.

8.6.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. For the risk of severe restrictions in a drought the long-term target is to remain at zero (full compliance).

8.7. Customer contacts about water quality – appearance

8.7.1. Definition



Although this is not a common metric, Ofwat has set standard definitions for asset health metrics. We have adopted the standard definition, which can be found on the Ofwat [website](#). This is the number of times Bristol Water was contacted by customers about the appearance of their tap water (per 1,000 people supplied) in the calendar year. This is a contact where the consumer perceives something different about the appearance of the water from the “norm” (as per the definition as stated in DWI information letter 1/2006, dated 6 January 2006).

The two main causes for water not being clear are:

- disturbance of harmless deposits making the water brown, black or orange. This may occur if there is a disturbance of the mains system, caused by a burst main or a leak; and
- air or chalk making the water appear white.

This definition has been amended following feedback from Ofwat on the information we provided on 3 May (as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission). The amended definition can be found in full in Appendix 3.

We have disaggregated this metric from our PR14 ‘Negative Water Quality Contacts’ performance commitment, to ensure that our performance is more transparent and therefore easier to understand for our customers.

8.7.2. Customer views

The appearance of water is valued highly by our customers. It is a consistent top priority across all research and engagement. 1.5% of all complaints we receive are related to the appearance of customers’ water. Customers are often unaware of the reasons that water is not clear and associate it with either health concern or poor taste. For some of our more engaged customers, like our Customer Forum, the appearance of water is a lower priority because they see it as a ‘nuisance’ but essentially harmless. Our future customers also gave less of a priority to discoloured water than to overall water quality.

When we talked to our customer online panel about discoloured water, 63% of our panel wanted us to turn the water back on even if discoloured, if it has been off for over 12 hours. 45% wanted the water back on even if discoloured no matter how long it had been off for.

We looked at our valuations for customers’ willingness to pay from studies we conducted for PR14 as well as our recent valuation research. These gave us a central valuation of £2.10.

Following on from triangulation, we wanted to test the “low”, “medium” and “high” values with customers, to test their acceptability of the values used, which resulted in the “expected” values, as shown below.

C3 - Delivering outcomes for customers

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1M/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 8-19 - Customer WTP values

The triangulated valuation from a range of surveys was £2.20, which increased to £2.30 through the NERA triangulation based on our draft Business Plan acceptability consultation.

We have asked customers about their views on water appearance as part of the following activities:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey (customer priorities and perceptions) (A5);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Triangulation by attribute (B20);
- Youth board (A12);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);
- Pre-acceptability testing (B31);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

Although in the focus groups customers suggested a penalty-only incentive, at PR14 a majority of companies, as well as Bristol Water, set a reward and penalty ODI for this metric, which we have again adopted at PR19.

8.7.3. Regulatory requirements

This is a revision of our AMP6 performance commitment, Negative Water Quality Contacts. We took into consideration Ofwat’s expectation that we should use individual performance commitments for asset health and so our AMP6 performance commitment has been split into two (customer contacts about water quality – appearance and customer contacts about water quality – taste and smell). In its final methodology Ofwat also stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

For comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance.

Customer Contacts about Water Quality (Appearance) – Historical Information (per 10,000 customers as per Discover Water definitions)						
		2014/15	2015/16	2016/17	2017/18	Average
Bristol Water	Target	-	-	-	-	-
	Company Performance	15.4	13.4	12.8	10.0	12.9
Industry	Average	13.7	12.0	12.5	11.1	12.3
	Upper Quartile	6.7	5.5	6.9	5.6	6.2
	Frontier	3.2	2.6	3.7	2.1	2.9

Table 8-30 - Customer Contacts about Water Quality (Appearance) – Historical data

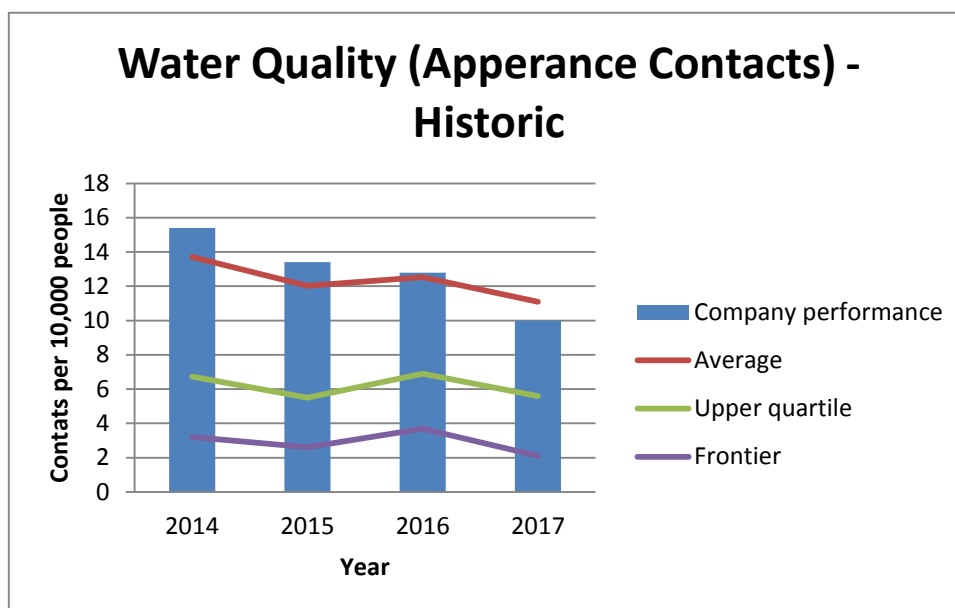


Figure 8-20 - Water Quality Appearance Contacts - Historical Data

We have historically been performing worse than the average company across the industry. At PR14 Ofwat set comparative upper quartile targets for this measure, with Bristol Water a below average performer this provided challenging levels to avoid penalties. The CMA redetermination allowed for less stretching targets during AMP6 for Bristol Water to avoid penalties, based on the customer research we presented.

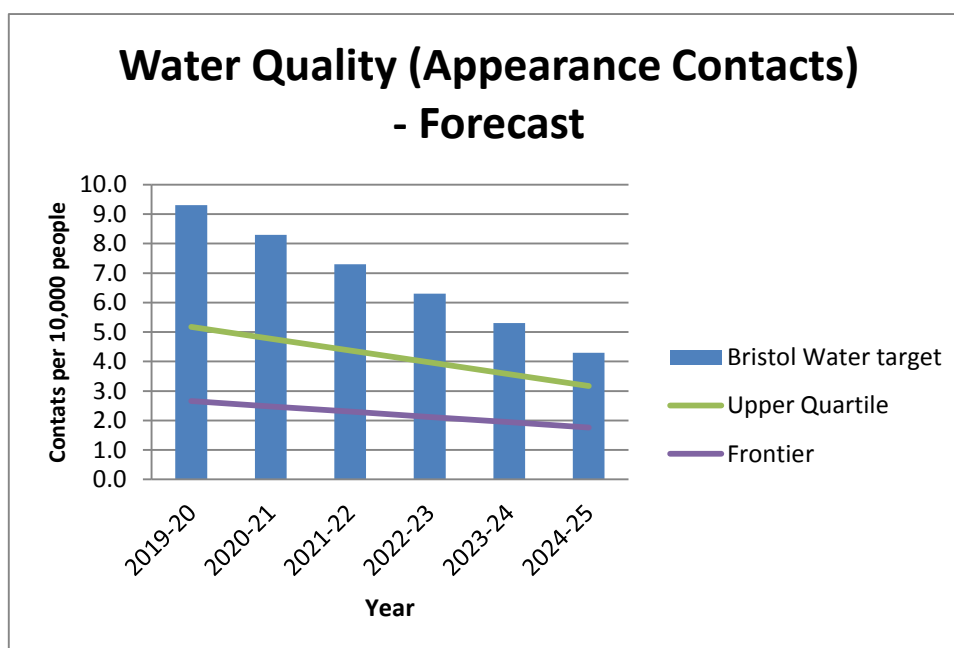


Figure 8-21 - Water Quality Appearance Contacts - Forecast performance

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	4.3	This was included as the 'suggested improvement' option in our draft Business Plan	✓	✓
Comparative information	3.2	This target assumes Bristol Water could achieve the industry forecast upper quartile level of performance. This was included as the 'faster improvement' option in our draft Business Plan	✓	
Historical information	9.3	Our average historical performance since 2014/15 is 12.9. As our performance is worse than the target, this approach proposes to keep the target in line with PR14. This was included as the 'slower improvement' option in our draft Business Plan		
Historical information	10.0	This is our best historical performance since 2014/15		
Minimum improvement	7.4	A 20% improvement rate on our PR14 target would result in this target		
Maximum level attainable	1.8	This target assumes Bristol Water could achieve the industry forecast frontier level of performance	✓	
Expert knowledge	4.3	This was included as the 'suggested improvement' option in our draft Business Plan		

Table 8-31 - Customer Contacts about Water Quality (Appearance) – Other Approaches

8.7.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because of the link to water treatment and network distribution.

8.7.5. Draft performance commitment, targets and long-term ambition

C3 - Delivering outcomes for customers

We included information in our long-term ambition document ‘Bristol Water... Clearly’, published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Customer contacts about water quality – appearance	Contacts per 10,000 people	9.3	9.3	4.3	3.2	1.0
Forecast increase to the average bill from additional investment £			0	1	3	N/A

Table 8-32 - Customer Contacts about Water Quality (Appearance) – Draft Business Plan Proposals

This information was presented as contacts per 10,000, as the consultation was carried out prior to Ofwat’s suggestion to normalise the measure as per 1,000 people.

8.7.6. Draft Business Plan Consultation feedback

When we talked to customers about water that does not look clear as part of our consultation they sometimes talked about it at the same time as health or safety concerns, whilst others acknowledged the distinction between aesthetic and safety issues. Some customers referred to experiencing regular issues with taste or smell and so were keen to see it improved.

There was a small majority support (54% vs 46%) for going beyond the slower plan to the suggested plan. Conversations with customers have told us that they do prioritise water that looks good, but often feel that this is something that Bristol Water should deliver as part of their core business, and shouldn’t be something they need to pay more for. This may reflect that it is outside of their personal experience, something that tends to be less noticed in a full Willingness to Pay survey. Lower socio-economic groups in particular cited this as a very important area

Customer Feedback on 2024/25 Target

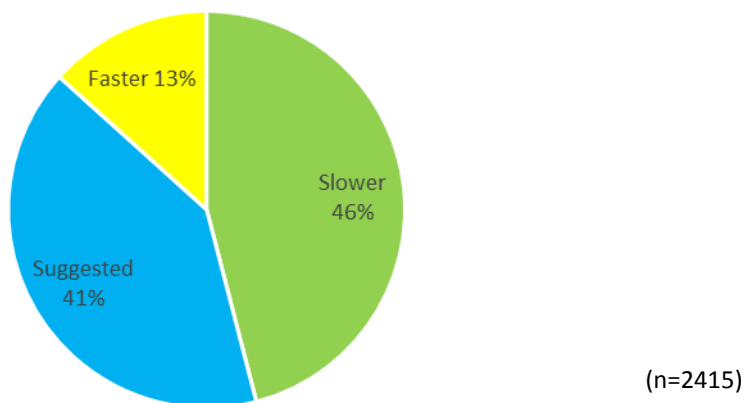


Figure 8-22 - Customer preferences on draft Business Plan targets

Final acceptability testing showed 72% support for our discoloured water proposals, with only 3% against.

8.7.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Water quality contacts per 1,000 population (appearance) - Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Payment (£m) – total 2020-25	Penalty (£m) – total 2020-25
Comparative, historical information and cost/benefit analysis	0.93	0.43	Out and Under	☑	☑	0.233	-0.661
						Payment within P90 (£m) – total 2020-25	Penalty within P10 (£m) – total 2020-25
						0.032	-0.299

Table 8-33 - Customer Contacts about Water Quality (Appearance) – Summary

The overall ODI design and performance commitment targets are presented in the chart below.

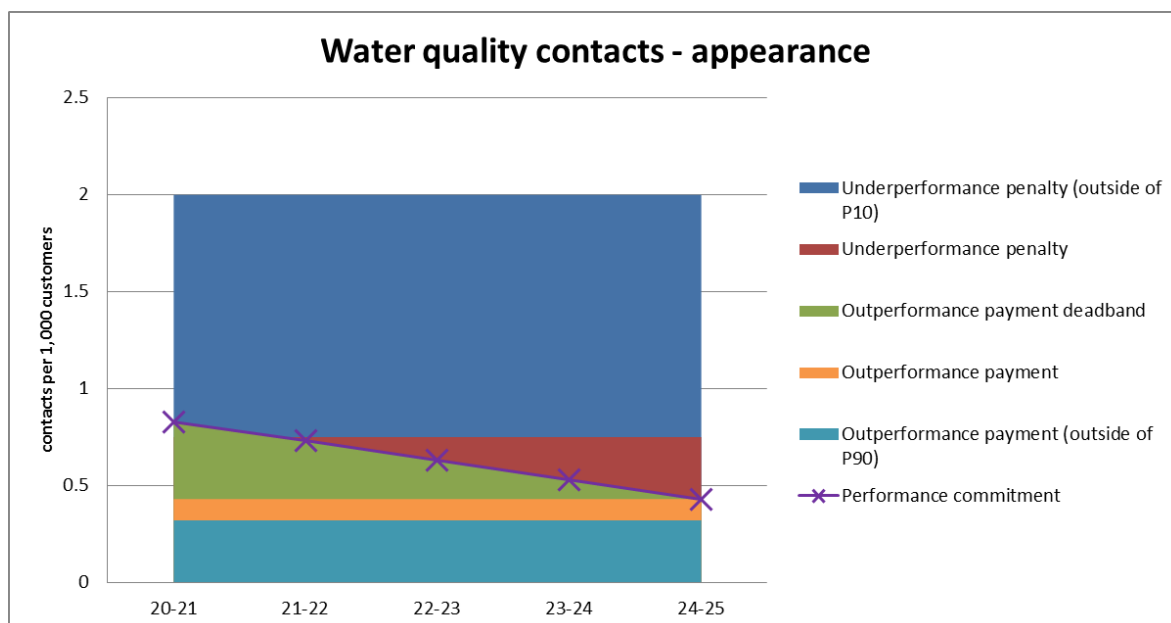


Figure 8-23 - Design of Water Quality appearance contacts ODI

Although this is a comparative metric, our 2025 target is not to meet the forecast upper quartile level of performance; the cost to meet achieve this level of performance outweighs the benefits and our customers did not support the 'faster plan' proposal, which is the forecast upper quartile level of performance.

No underperformance penalty deadband has been proposed; if we miss our proposed targets we would immediately be facing penalties. We have decided this is appropriate due to the large degree of management control/influence over this metric.

We have not proposed a penalty deadband; this puts more value at risk to increase the effective incentive we face. Although this increases risk exposure it is justified on the basis that this outcome is one where there is a larger degree of management control/influence. We have proposed a reward deadband to ensure that we are only eligible to earn rewards if and when we drive contacts below forecast upper quartile level for 2025. An upper tier outperformance rate (still standard) is proposed for delivering above industry frontier levels of 0.32 contacts per 1,000 contacts

We have proposed an outperformance deadband to ensure that we are only eligible to earn rewards if and when we drive contacts below our 2025 target level of performance, in recognition that we are forecast to be below the upper quartile level of performance across the industry. The first standard outperformance tier has been set at the current frontier level. The second outperformance cap would reflect performance that is beyond the forecast frontier level of performance.

The outperformance payment (outside of P90) has been set at a level of performance that was proposed in the 'faster' improvement target in our draft Business Plan.

Caps and collars have been included for this performance commitment. A cap is justified on the grounds that as this performance commitment has an in-period ODI we have taken into consideration the importance of bill smoothing to reflect customers' preferences. When combining all data sources from the draft Business Plan consultation, we found that there was least support for the faster plan, and broadly a 50/50 split between preferences for the slower and suggested plan. We took from this that our customers did not want bills to be

C3 - Delivering outcomes for customers

increased by any more than the faster plan, which the proposed cap ensures. The collar is beyond the worst historic performance and therefore protects customers in normal circumstances, and avoids excessive variations in bills which the research shows is not supported by customers. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

Our proposed AMP7 targets are provided below for information. The level of stretch in the targets has taken into consideration comparative and historical performance levels against a cost/benefit analysis.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Water quality contacts (appearance)	Unit	2019/20 Baseline	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Contacts per 1,000 people	0.93	0.83	0.73	0.63	0.53	0.43
Underperformance Penalty Deadband	Contacts per 1,000 people		0.83	0.73	0.63	0.53	0.43
Standard Underperformance penalty collar	Contacts per 1,000 people		2.0	2.0	2.0	2.0	2.0
Outperformance Payment Deadband – tier 1	Contacts per 1,000 people		0.43	0.43	0.43	0.43	0.43
Outperformance payment – tier 2	Contacts per 1,000 people		0.32	0.32	0.32	0.32	0.32
Standard Outperformance Payment Cap	Contacts per 1,000 people		0	0	0	0	0

Table 8-34 - Water Quality Appearance Contacts - Committed Performance Levels

8.7.8. Costs, Benefits and Incentive Rates

The baseline formulae for this performance commitment have been determined using Ofwat's standard formula:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The benefit value is based on the water discolouration value. The value²⁴ is below:

²⁴ Following Ofwat's feedback as part of our early submission definition, we amended our calculations to ensure that these were based on contacts per 1,000 people, with our valuations also being adjusted from per 10,000 to per 1,000 people

C3 - Delivering outcomes for customers

1. Performance Commitment					
PC	Customer contacts about water quality - Discolouration				
Units	Contacts per 1,000 people supplied				
2a. Input values					
		Units	Lower	Central	Upper
	Aesthetic - Discoloured water one-off	Per property per incident	£80.00	£230.00	£500.00
2b. Other inputs					
			Properties		
	Population	1,207,583			
	Occupancy	2.4			
	Population (1,000s)	1,208			
3. Assessment of the value prior to addressing overlaps					
			Lower	Central	Upper
	Value per person		£33.30	£95.73	£208.12
	Value £/yr for change of 1 in 1,000		£40,211	£115,606	£251,317
4. Further adjustment for overlaps					
	None required as not included in the CRI performance commitment				

Figure 8-24 - Calculation of benefit for water quality appearance contacts

The incremental benefit is based on our customer valuation for water contacts due to discolouration. The sources of this value are our stated preference and slider surveys. These values have been compared to other available values from other companies as part of the triangulation process.

The monetary ODI value reflects a low customer WTP at PR19 and that the plan is largely delivered as a side benefit of tackling leakage and other performance commitments.

The WTP is based on a discoloured water WTP of £230 per property per incident. The lower quartile estimate was £80 and the upper WTP estimate £500. This is explained in our triangulation report. This is translated into per population by dividing by a standard occupancy rate of 2.4 people per property multiplied by the number of people per 1,000. The original stated preference WTP amounted to £220 per property per incident. The NERA acceptability testing updated this triangulation based on the weighted choice arising from the draft Business Plan consultation and the marginal costs and targets presented.

The range of industry values based on PR19 stated preference surveys appear from £60 to £8317 per household property or £74 to £8549 when business values are included. Our values are at the minimum point according to this independent research by Accent / PJM Economics.

We propose that for this performance commitment two levels of incentive rates will apply for our outperformance payments. This provides for additional incentive payments to be received where we deliver performance beyond the forecast upper quartile. To value the benefits for the higher level of performance we have used the upper value of customers' WTP as set out in the triangulation calculation.

The second tier rate is not an enhanced outperformance payment because the value is based on triangulated WTP – payments reflect a level of performance that was presented as the 'faster plan' approach in the draft Business Plan, which were set based on the upper range from the WTP survey. This approach is different to Ofwat's enhanced rates, which are multiples of customer WTP due to shifting industry frontier forward. Our upper WTP rates are at this level, but are justified by customer WTP at that level of service. In addition, the annual ODI cap in bills of £2.5m protects customer bill movements.

C3 - Delivering outcomes for customers

The costs have been taken from the company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020- that contribute to the delivery of this outcome are:

- Sliplining at various locations £3.1m
- Integrated distribution zone mains renewal and relining.

Full details of the investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per water appearance contacts per 1,000 customers	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Outperformance total					0.047	0.233	0.0
Outperformance payment – tier 2 (outside P90 range)	0.251	-	0.126	Upper WTP	0.040	0.201	0.0
Outperformance payment – tier 1	0.116	-	0.058	Triangulated WTP	0.006	0.032	0.0
Underperformance total					-0.132	-0.661	-0.1
Underperformance penalty	0.116	0.038	0.097	Triangulated WTP	-0.060	-0.299	-0.0
Underperformance penalty (outside P10 range)	0.116	0.038	0.097	Triangulated WTP	-0.072	-0.362	-0.0

Table 8-35 - Water Quality Appearance Contacts - calculation of incentive rates

The total underperformance amounts to £0.661m and outperformance £0.233m. The low penalties compared to PR14 largely represent lower WTP. The 10% to 90% range is £0.297m underperformance (based on a level of 1.25 contacts per 1,000 properties based on historic performance) and £0.032m outperformance (reflecting that performance above the industry frontier is unlikely to be delivered at 0.32 contacts per 1,000 properties, without unknown innovations at this stage).

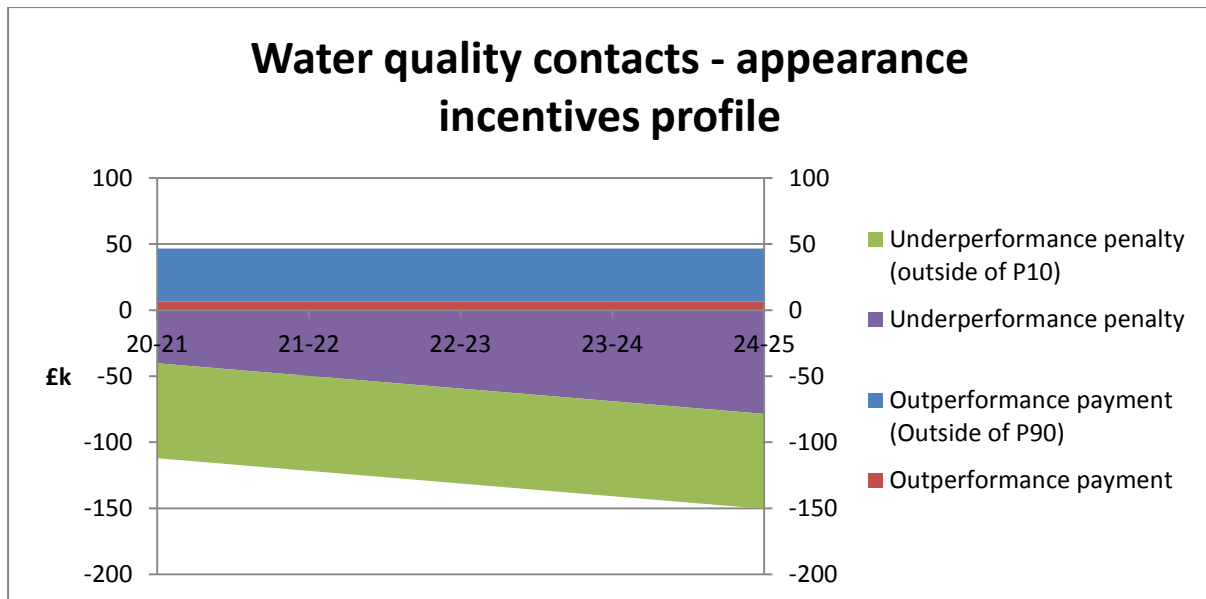


Figure 8-25 - Water quality appearance contacts - incentives profile

The performance commitment has been allocated to the Water Network Plus price control, because of the associated with maintaining the network.

8.7.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

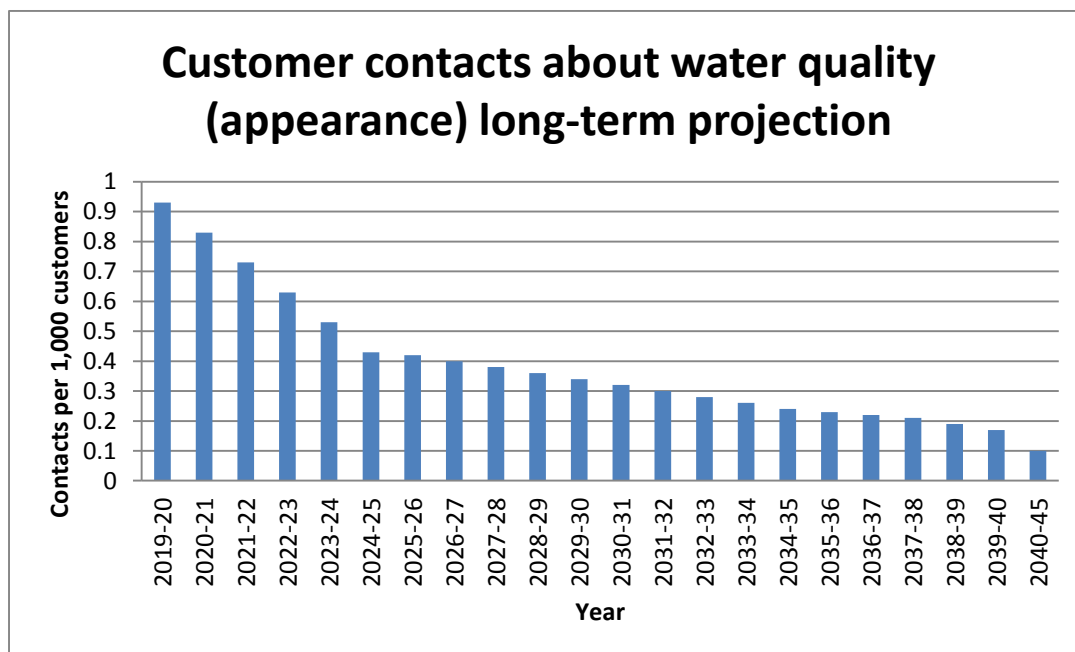


Figure 8-26 - Water quality appearance contacts - long-term projection

It is our long-term ambition to reduce customer contacts about the appearance of their water to the minimal level achievable.

8.8. Customer contacts about water quality – taste and smell

8.8.1. Definition



Although this is not a common metric, Ofwat has set standard definitions for asset health metrics. We have adopted the standard definition, which can be found on the Ofwat [website](#).

The metric is based upon the number of times Bristol Water is contacted by customers about their water's taste/smell (per 1,000 people supplied) in the calendar year. This is a contact where the consumer perceives that the water has a taste or smell (as per the definition as in DWI information letter 1/2006 dated 6 January 2006).

The main causes for water tasting or smelling different are:

- the use of chlorine to maintain good hygiene in the pipe network;
- seasonal water quality effects creating a musty smell or earthy taste;
- a change in where a customer's water comes from or how it is treated; and
- a customer's plumbing, which for various reasons can cause a range of tastes including metallic, salt, rubbery or earthy tastes.

This definition has been amended following feedback from Ofwat on the information we provided on 3 May (as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission). The amended definition can be found in full in Appendix 3.

We have disaggregated this metric from our PR14 'Negative Water Quality Contacts' performance commitment, to ensure that our performance is more transparent and therefore easier to understand for our customers.

8.8.2. Customer views

Customers prioritise taste and smell in a similar way to the appearance of their water. In fact, sometimes these three attributes are conflated, or considered in different combinations in discussions with customers. As such, the taste and smell of water is a consistent top priority across all research and engagement. 4% of complaints we receive are regarding the taste of customers' water, and 3% are about its odour.

We have asked customers about their views on taste and odour as part of the following activities:

- Qualitative research: customer priorities (B5);
- Online Customer Panel survey (A4);
- Annual survey (customer priorities and perceptions) (A4);
- Customer experience of attributes review (B4);
- Customer qualitative research: Performance Commitments (B14);
- Triangulation report (B20);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);

C3 - Delivering outcomes for customers

- Pre-acceptability testing (B31);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

Although in the focus groups customers suggested a reputational incentive, this was due to the subjective nature of taste. At PR14 a majority of companies, as well as Bristol Water, set a financial ODI for this metric. As this measure reflects both asset health and customer satisfaction, we feel that it is appropriate to set a financial ODI again for this metric.

Our recent research suggested that our customers' willingness to pay in this area had decreased from PR14, from £5.40 to £1.70, giving us a central valuation of £3.60, combining domestic and business customer views (expressed as a 1% risk reduction). Following on from triangulation, we wanted to test the "low", "medium" and "high" values with customers, to test their acceptability of the values used, which resulted in the "expected" values, as shown below.

Estimated "Expected" Willingness to Pay by Service Attribute

Service Attribute	WTP Units	"Low" WTP	"Med" WTP	"High" WTP	"Expected" WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 8-27 - Customer WTP values

The NERA acceptability research resulted in a triangulated position of £3.36 being applied (per property affected). The lower triangulated value was £1.70 and the upper £5.40. The NERA research therefore validates the use of a central point at £3.36 for a 1% reduction in risk of a taste incident.

Taste values of £147 to £48,258 per household property are apparent from the stated preference survey research across the industry. This is £178 to £90,805 when business valuations are also included. Bristol Water values are at the minimum before the triangulation described above (i.e. £1.78 per 1% probability as per the survey described above).

8.8.3. Regulatory requirements

This is a revision of our AMP6 performance commitment, Negative Water Quality Contacts. We took into consideration Ofwat’s expectation that we should use individual performance commitments for asset health, and so our AMP6 performance commitment has been split into two (customer contacts about water quality – appearance; and customer contacts about water quality – taste and smell). In its final methodology Ofwat also stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

For comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance.

Customer Contacts about Water Quality (Taste and Odour) – Historical Information – per 10,000 population as originally consulted on and reported on discover water						
		2014/15	2015/16	2016/17	2017/18	Average
Bristol Water	Target	-	-	-		-
	Company Performance	5.2	5.1	4.3	4.5	4.8
Industry	Average	4.4	3.9	3.6	3.4	3.8
	Upper Quartile	3.5	2.8	2.9	2.9	3.0
	Frontier	1.6	1.3	1.2	0.9	1.3

Table 8-36 - Customer contacts about water quality – taste and smell – Historical Information

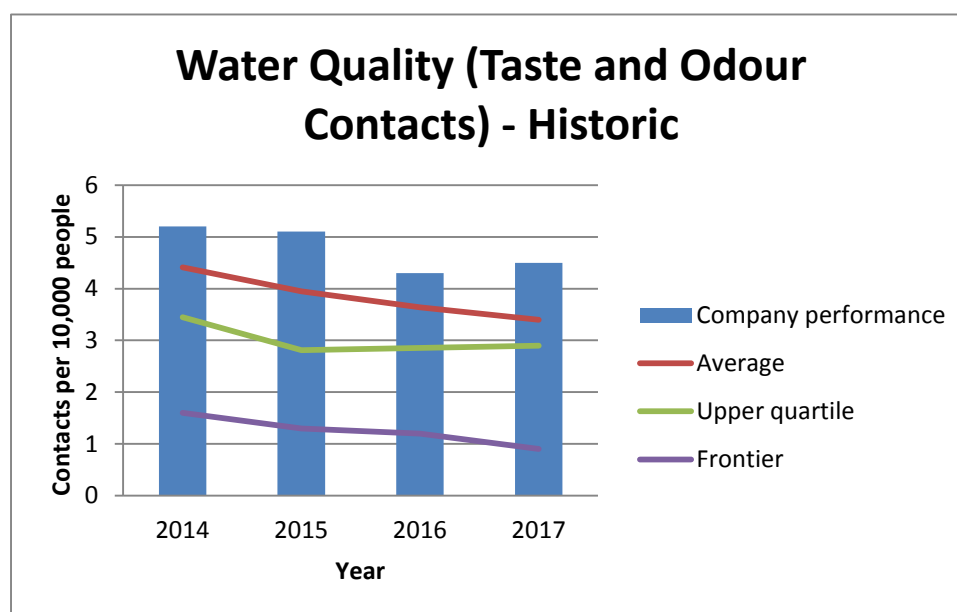


Figure 8-28 - Water Quality Taste and Odour Contacts - Historic performance

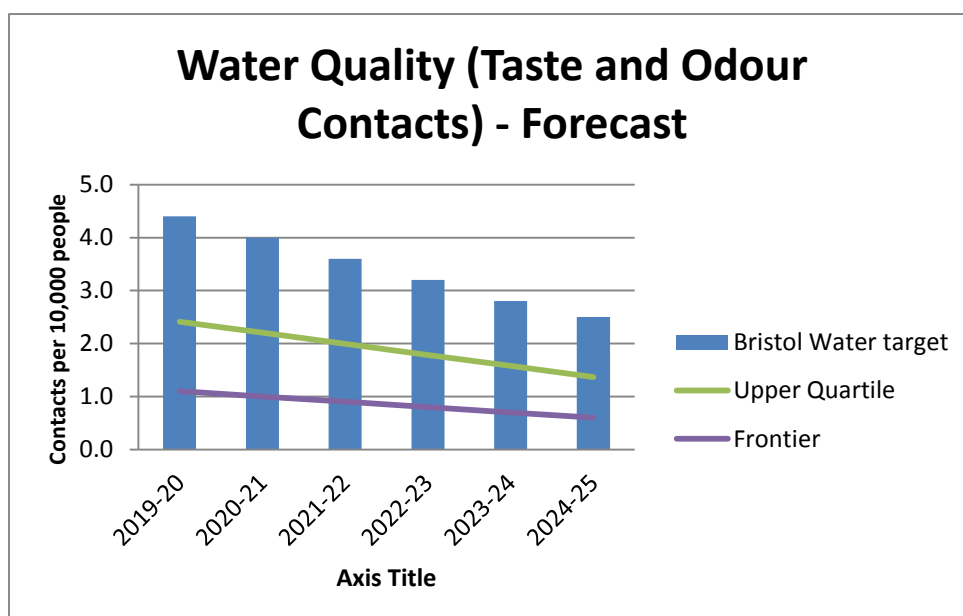


Figure 8-29 - Water Quality Taste and Odour Contacts - forecast performance

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	2.5	This target considers the economic level of service, customer preferences, historical data and the impact on the wider environment	✓	✓
Comparative information	1.4	This target assumes we could achieve the industry forecast upper quartile level of performance. This was included as the 'faster improvement' option in our draft Business Plan	✓	
Historical information	4.8	Our average historical performance since 2014/15 is 4.8.		
Historical information	4.3	This is our best historical performance since 2014/15		
Minimum improvement	3.8	A 20% improvement rate on our average performance would result in this target		
Maximum level attainable	0.2	This target assumes we could achieve the industry forecast frontier level of performance		
Expert knowledge	3.0	This was included as the 'slower improvement' option in our draft Business Plan	✓	

8.8.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because of the link to water treatment and network distribution

8.8.5. Draft performance commitment, targets and long-term ambition

C3 - Delivering outcomes for customers

We included information in our long-term ambition document 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Customer contacts about water quality – taste and smell	Contacts per 10,000 people	3.0	3.0	2.5	1.4	1.0
Forecast increase to the average bill from additional investment £			0	0	1	N/A

Table 8-37 - Customer contacts about water quality – taste and smell – Draft Business Plan Proposals

This information was presented as contacts per 10,000, as the consultation was carried out prior to Ofwat's suggestion to normalise the measure as per 1,000 people.

8.8.6. Draft Business Plan Consultation feedback

This performance commitment saw a split in customer views between the three plans, with the highest customer support for the faster plan out of all areas in the safe and reliable outcome. When we talked to customers about water that doesn't taste or smell right they sometimes talked about it at the same time as health and safety concerns, whilst others acknowledged the distinction between aesthetic and safety issues. Some customers say they experience regular issues with the appearance of water and are keen to see it improved.

33% of customers chose the faster plan and we know from other research that this is a priority area for customers. However, the faster plan only costs one pound extra and the suggested plan has no additional cost. In addition, 30% of customers chose the slow option, despite the suggested option having no cost to them. This could be because they felt it that their water supply is currently acceptable and hence is not a priority area for them.

Customer Feedback on 2024/25 Target

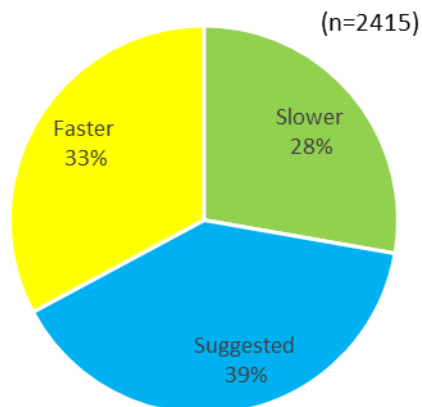


Figure 8-30 - Customer preferences for Water Quality Taste and Odour Contacts in draft Business Plan

Final plan acceptability testing (which included comparative information on bills and performance) identified 71% support for the proposals for this service area, with only 6% of people disagreeing.

8.8.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Water quality contacts (taste and odour) per 1,000 population- Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Payment (£M) – total 2020-25	Penalty (£M) – total 2020-25
Comparative, historical information and cost/benefit analysis	0.44	0.25	Out and Under	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.157	-0.157
						Payment within P90 (£M) – total 2020-25	Payment within P10 (£M) – total 2020-25
						0.062	-0.157

Table 8-38 - Customer contacts about water quality – taste and smell - Summary

The overall ODI design and performance commitment targets are presented in the chart below.

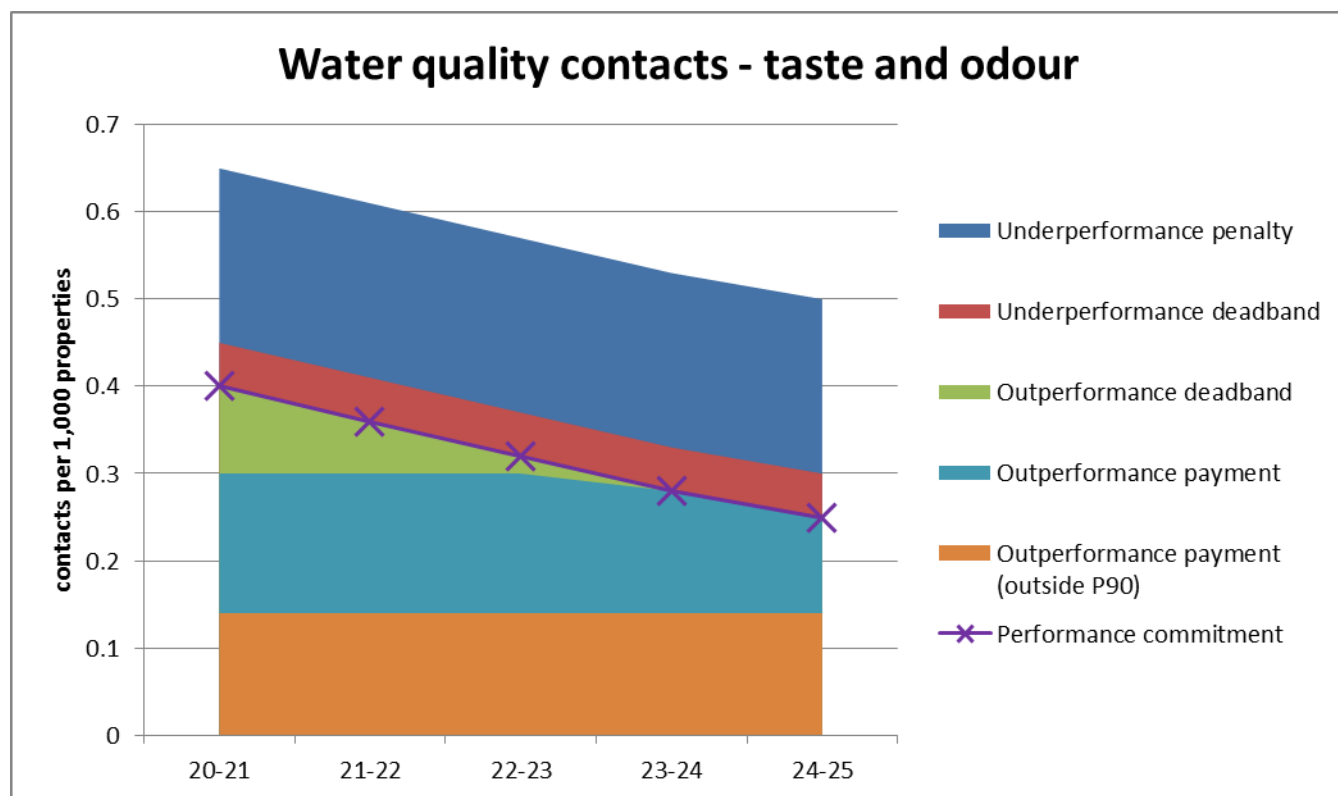


Figure 8-31 - Water Quality Taste and Odour Contacts - Incentive Design

Our baseline was originally stated as 3.0 contacts per 10,000 population in “Bristol Water... Clearly” and our draft Business Plan. Reflecting Ofwat feedback, we have then converted this to the current DWI reporting of per 1,000 population, and for the final plan our committed performance level in 2025 has been adjusted to 0.25 per 1,000 population, with a deadband up to 0.3. This reflects revised data on our current performance, but with uncertainty on how well better customer communication as water sources change will help to delivery this understanding of why taste and odour changes.

A collar has been included for this performance commitment. This reduces over time in line with performance, as this is not an area with major investment and there is uncertainty as to how other investment, in particular more variation in sources of supply for resilience will affect taste and odour. As an area where we have isolated customer issues rather than “hotspot” areas to be targeted, this approach is justified. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

An underperformance deadband has been included in this case to reflect the natural variability due to our planned resilience schemes, which can change the source of water customers are supplied from, particularly in the city centre, which can lead to an increase in water quality contacts. The standard underperformance penalty collar rate would takes account of failing to improve upon our current performance and also the effect if our reported performance in AMP7 is significantly worse than our current performance. We had considered tiered incentive rates but simplified our design during our consultation process.

We have proposed a penalty deadband to reflect that taste and odour contacts can in the short term reflect operational circumstances, including when transferring water from more

C3 - Delivering outcomes for customers

than one source for resilience purposes. We have proposed a reward deadband to ensure that we are only eligible to earn rewards if and when we drive contacts below forecast upper quartile level for 2025. The reward cap has been set at the current frontier level.

The standard outperformance payment deadband ensures that no reward is due unless the company achieves a forecast upper quartile level of performance, whilst the second outperformance payment cap ensures additional incentives are only made if the company achieves performance that is better than the forecast frontier level.

The outperformance payment (outside of P90) has been set at a level of performance that was proposed in our 'faster' improvement target in the draft Business Plan.

Our proposed AMP7 targets are provided below for information. The level of stretch in the targets has taken into consideration comparative and historical performance levels against a cost/ benefit analysis.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Water quality contacts (taste and odour) per 1,000 people	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Contacts per 1,000 people	0.44	0.4	0.36	0.32	0.28	0.25
Underperformance Penalty Deadband	Contacts per 1,000 people		0.45	0.41	0.37	0.33	0.3
Standard Underperformance penalty collar	Contacts per 1,000 people		0.65	0.61	0.57	0.53	0.5
Outperformance Payment Deadband – tier 1	Contacts per 1,000 people		0.3	0.3	0.3	0.28	0.25
Outperformance payment – tier 2	Contacts per 1,000 people		0.14	0.14	0.14	0.14	0.14
Standard Outperformance Payment Cap	Contacts per 1,000 people		0	0	0	0	0

Table 8-39 - Customer contacts about water quality – taste and smell – Committed Performance Levels

8.8.8. Costs, Benefits and Incentive Rates

The baseline formulae for this performance commitment has been determined using Ofwat's standard formula:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The benefit value is based on the water taste and odour value. The value²⁵ is below.

²⁵ Following Ofwat's feedback as part of our early submission definition, we amended our calculations to ensure that these were based on contacts per 1,000 people, with our valuations also being adjusted from per 10,000 to per 1,000 people

C3 - Delivering outcomes for customers

1. Performance Commitment					
PC	Customer contacts about water quality - taste and smell				
Units	Contacts per 1,000 people supplied				
2a. Input values					
	Units	Lower	Central	Upper	
	Aesthetic - taste and odour	Per property per incident	£170.00	£336.00	£540.00
2b. Other inputs					
	Population	1,207,583			
	Occupancy	2.40			
	Population (1,000s)	1208			
3. Assessment of the value prior to addressing overlaps					
		Lower	Central	Upper	
	Value per person	£70.76	£139.85	£224.76	
	Value £/yr for change of 1 in 1,000	£85,448	£168,885	£271,422	
4. Further adjustment for overlaps					
	None required as not included in the CRI performance commitment				

Figure 8-32 - Calculation of water quality taste and odour benefit value

The value reflects a low customer WTP at PR19 and that the plan is largely delivered as a side benefit of treatment works improvements and providing better information to customers as sources of water change because of the extent of resilience we have (the North/South water boundary in Bristol changes depending on use of sources which results in taste, together with long rural network areas).

The incremental benefit is based on our customer valuation for water contacts due to discolouration. The source of this value is stated preference surveys. These values have been compared to other available values from other companies as part of the triangulation process. The source of WTP is explained in the chapter on the NERA/Traverse triangulation acceptability testing, where we tested the impact of the interpretation of WTP through our draft Business Plan consultation.

The WTP is based on a taste/odour of water WTP of £336 per property per incident. The lower estimate was £170 and the upper WTP estimate £540. This is explained in our triangulation report. This is translated into per population by dividing by a standard occupancy rate of 2.4 people per property multiplied by the number of people per 1,000.

We propose that for this performance commitment two levels of incentive rates will apply for our outperformance payments. This provides for additional incentive payments to be received where we deliver performance beyond the forecast upper quartile. To value the benefits for the higher level of performance we have used the upper value of customers' WTP as set out in the triangulation calculation.

The second tier rate is not an enhanced outperformance payment because the value is based on triangulated WTP – payments reflect a level of performance that was presented as the 'faster plan' approach in the draft Business Plan, which were set based on the upper range from the WTP survey. This approach is different to Ofwat's enhanced rates, which are multiples of customer WTP due to shifting industry frontier forward. Our upper WTP rates are at this level, but are justified by customer WTP at that level of service. In addition, the annual ODI cap in bills of £2.5m protects customer bill movements.

C3 - Delivering outcomes for customers

The costs have been taken from the company’s optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat’s guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this performance commitment include:

- General IT investment for providing better information to customers
- Banwell UV and membrane plant refurbishment £3.8m

Full details of the investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per water taste/ odour contacts per customers	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Outperformance total					0.031	0.157	0.0
Outperformance payment – tier 2 (outside P90 range)	0.271	-	0.136	Upper WTP	0.019	0.095	0.0
Outperformance payment – tier 1	0.169	-	0.084	Central WTP	0.012	0.062	0.0
Underperformance penalty total	0.169	0.025	0.157	Triangulated WTP	-0.031	-0.157	-0.0

Table 8-40 - Customer contacts about water quality – taste and smell – Calculation of Incentive Rates

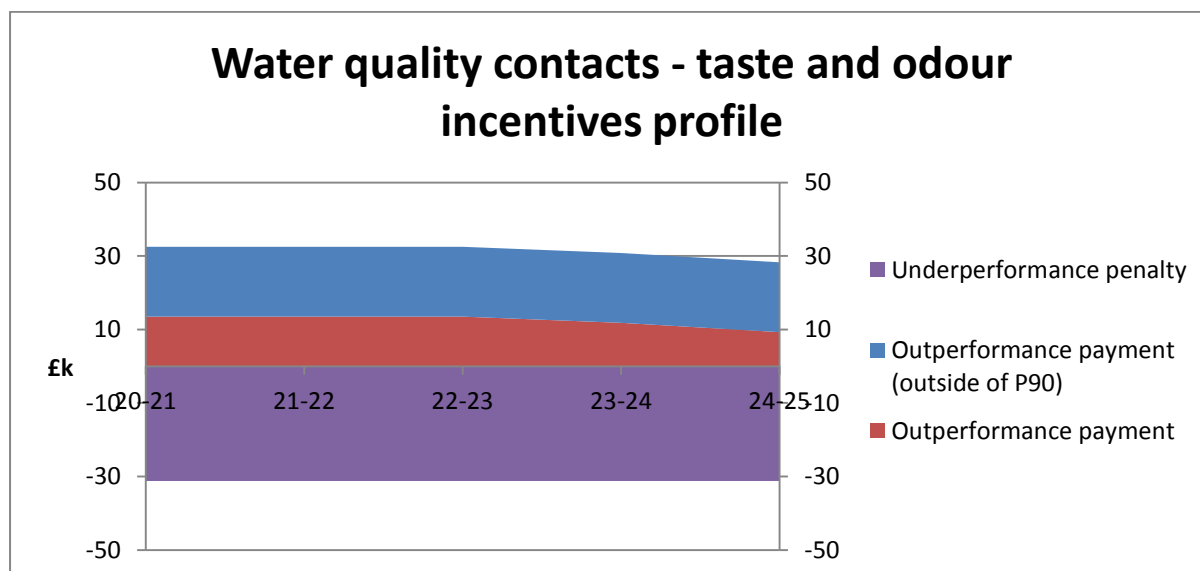


Figure 8-33 - Water quality contacts - taste and odour incentives profile

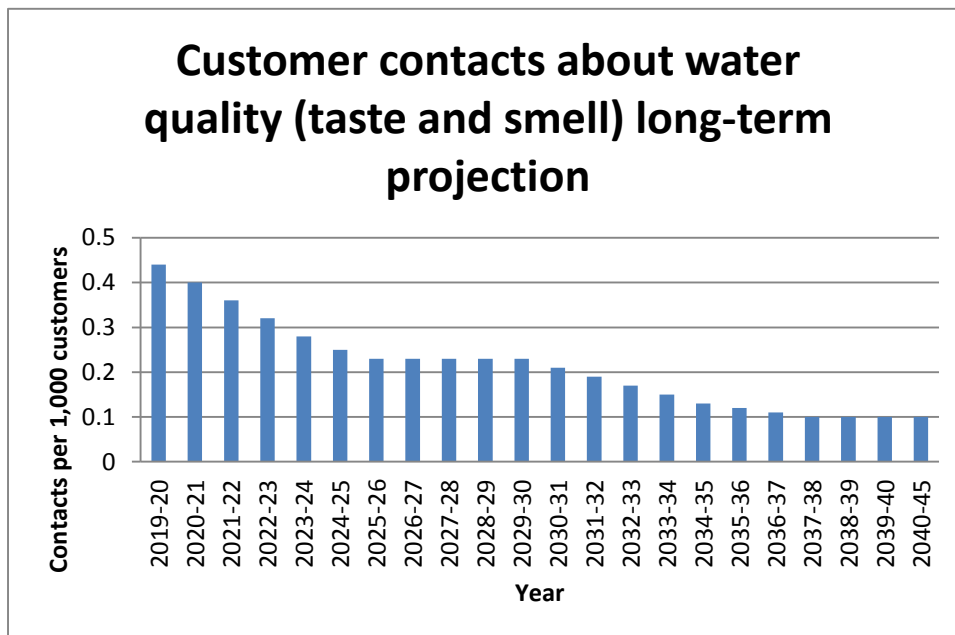
The total underperformance amounts to £0.157m and outperformance £0.157m. The £0.095m outperformance rate 2 is outside the P90 range as it reflects performance above the industry frontier of 0.14 contacts per 1,000 customers.

C3 - Delivering outcomes for customers

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.8.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.



It is our long-term ambition to customer contacts about the taste and odour of their water to the minimum level achievable.

8.9. Properties at risk of receiving low pressure

8.9.1. Definition

Although this is not a common metric, Ofwat has set standard definitions for asset health metrics. We have adopted the standard definition, which can be found on the Ofwat [website](#). This is the total number of properties in our supply area which, at the end of the year, have received, and are likely to continue to receive, a pressure or flow below the reference level.

This was an AMP6 sub-indicator to our Asset Reliability (Infrastructure) performance commitment. It is now being reported as a separate performance commitment, to ensure that our performance is more transparent and therefore easier to understand for customers.

The original definition (as submitted to Ofwat on 3 May) can be found in Appendix 3.

8.9.2. Customer views

Water pressure is a common reason for customers to contact us (10% of complaints), and we have been working hard to improve our response as those customers are too often dissatisfied with our response. When talking to customers more generally, pressure is not often referred to as a priority. However, as instances of low pressure are often connected to leaks and bursts, our efforts to reduce leakage directly impact our customers' water pressure.

We know that customers are willing to pay a small amount towards reducing incidences of low pressure but it isn't as high a priority as reliability. However, our most recent Willingness to Pay study showed an increase in this value from PR14. Following triangulation, we estimate a conservative central valuation from a large Willingness to Pay study of £2.00 per customer to reduce the probability of an incident at one property by 1%. Following on from triangulation, we wanted to test the "low", "medium" and "high" values with customers, to test their acceptability of the values used, which resulted in the "expected" values, as shown below.

C3 - Delivering outcomes for customers

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 8-34 - Customer WTP values

The value reduced to £1.84 based on the NERA triangulation, within the low estimate of £0.80 and upper estimate of £3.10. The industry stated preference range according to a research study is £21 to £1,064 per property for household valuation, increasing to £68 to £1,100 once business valuations are included (ignoring 1 outlier high). From stated preference the per property Bristol Water value is £80 household and £92 combined per property (£184 in NERA triangulation testing once a range of research was considered).

We have also talked to customers about low pressure in the context of Active Pressure Management as a tool to reduce leakage on the network: participants were initially sceptical of this based on a reluctance to experience reduced pressure in their homes.

We have described the outcomes of our conversations with customers about leakage and pressure in the following reports:

- Customer priorities focus groups (B5);
- Customer forum (A3);
- Online Customer Panel (A4);
- Annual customer survey (customer priorities and perceptions) (A5);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Triangulation by attribute (B20);
- Deliberative resilience research (B11); and
- WRMP demand reduction deliberative events (B23).

8.9.3. Regulatory requirements

In its final methodology Ofwat stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

C3 - Delivering outcomes for customers

For comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance. Although there is some data reported on across the industry, this has not been reported on a consistent basis and so is of little relevance as a comparator. We have therefore considered our historical performance to date when proposing our future targets.

Low Pressure – Historical Information						
		2014/15	2015/16	2016/17	2017/18	Average
Bristol Water	Target	69	69	69	69	69
	Company Performance	52	71	94	65	71

Table 8-41 - Low Pressure – Historical Information

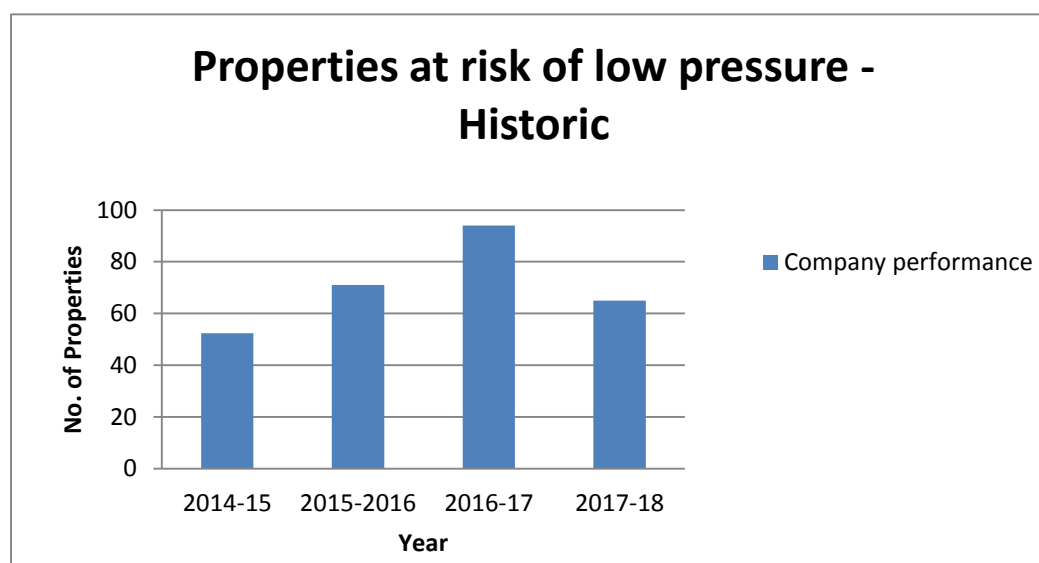


Figure 8-35 - Properties at risk of low pressure - Bristol Water historic performance

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	60	This target considers the economic level of service, customer preferences, historical data and the impact on the wider environment. This was included in our draft Business Plan	✓	✓
Comparative information	N/A	Comparative information is not available		
Historical information	72	Our average historical performance since 2014/15 is to report 72 properties at risk of low pressure		
Historical information	52	This is our best historical performance since 2014/15		
Minimum improvement	55	A 20% improvement rate on our PR14 target would result in this target		
Maximum level attainable	0	This target assumes we could achieve the frontier level of performance across the industry		

C3 - Delivering outcomes for customers

Expert knowledge	69	As this is an asset health measure and a metric where properties could be added, as well as taken away from the register, there was a proposal to roll forward our PR14 target		
------------------	----	--	--	--

Table 8-42 – Assessment of options for setting performance commitment for properties at risk of low pressure

8.9.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because the activity relates to the network.

8.9.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’, published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. In ‘Bristol Water...Clearly’ we set out an ambition to provide all customers with good water pressure (including end consumers on shared connections)

We also then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Properties at risk of receiving low pressure	No. of properties	69	N/A	60	N/A	0
Forecast increase to the average bill from additional investment			N/A	N/A	N/A	N/A

Table 8-43 - - Low Pressure – Draft Business Plan Proposals

8.9.6. Draft Business Plan Consultation feedback

Customers generally do not view pressure as a priority, but as instances of low pressure are often connected to leaks and bursts, our efforts to reduce leakage will directly impact on our customers’ water pressure. See ‘Leakage’ and ‘Supply Interruptions’ for more consultation feedback on this issue.

Low pressure is not a high customer priority, and the investment is delivered largely by general network improvements and side benefits from leakage and supply interruption reduction activities.

8.9.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Low pressure - Summary							
Stretch	2019/20	2024/25	ODI	ODI	ODI Caps/	Payment	Penalty

C3 - Delivering outcomes for customers

	Baseline	Target		Deadband	Collars	(£m) – total 2020-25	(£m) – total 2020-25
Cost-benefit analysis	69	60	Out and Under	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.598	-1.598
						Payment (£m) within P90 – total 2020-25	Penalty (£m) within P10 – total 2020-25
						0.391	-0.173

Table 8-44 - Low Pressure – Summary

The overall ODI design and performance commitment targets are presented in the chart below.

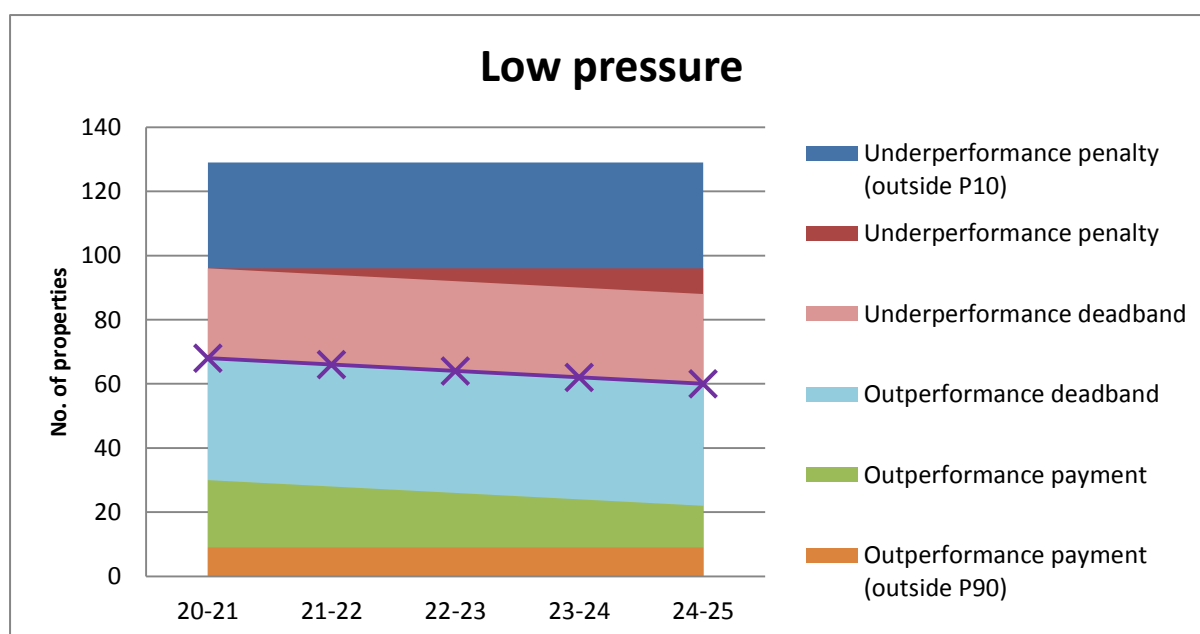


Figure 8-36 - Properties at risk of low pressure - ODI design

The 2025 target has not been set at the forecast upper quartile level across the industry because the data available is not on a comparative basis (there is volatility in the historical data reported by companies). This measure is part of our asset health measures, but as it also has an individual customer WTP driver a reward and penalty is proposed on top of asset health deadbands.

Underperformance penalty deadbands have been proposed as recognition that we may need time to address the addition of any new properties at risk of low pressure register throughout the five-year period. The standard underperformance penalty collar has been set at the current upper threshold limit. The outperformance payment deadband ensures no payment is due unless our performance moves toward a leading company in the industry.

A collar has been included for this performance commitment. This reflects that low pressure would also be reflected in other asset health and customer service measures, including mains bursts, leakage and supply interruptions. It also recognises the potential for new

C3 - Delivering outcomes for customers

developments to create unexpected low pressure impacts, although we have no track record of such risks occurring and the penalty collar is sufficiently high.

Customers opposed bill variation on an excessive range of performance, and therefore the collar ensures that incentives are applied over a meaningful range of performance, based on a level beyond historic worst performance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

Our proposed AMP7 targets are provided below for information. The level of stretch in the targets has taken into account a cost/ benefit analysis.

We propose that the table below be included in our final determination.

Low pressure – Performance Commitment							
Properties at risk of Low pressure	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	No. of properties	69	68	66	64	62	60
Underperformance Penalty Deadband	No. of properties		96	94	92	90	88
Standard Underperformance penalty collar	No. of properties		129	129	129	129	129
Outperformance Payment Deadband	No. of properties		30	28	26	24	22
Standard Outperformance Payment Cap	No. of properties		0	0	0	0	0

Table 8-45 – Properties at risk of low pressure - Proposed performance commitments

8.9.8. Costs, Benefits and Incentive Rates

We have applied Ofwat’s standard formula for this performance commitment:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The incremental benefit is based on valuation of avoiding low pressure. The source of this value is stated preference surveys. The calculation of the value is below:

C3 - Delivering outcomes for customers

1. Performance Commitment

PC	Properties at risk of receiving low pressure
Units	Number of properties

2a. Input values

	Units	Lower	Central	Upper
DG2 Poor pressure	Incidents	4000	9200	15500

2b. Other inputs

None required

3. Assessment of the value prior to addressing overlaps

Lower	Central	Upper
£4,000	£9,200	£15,500

4. Further adjustment for overlaps

None required as covers chronic pressure problems

Figure 8-37 - calculation of benefit value for properties at risk of low pressure

The costs have been taken from the Company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this outcome include:

- Network monitoring £2.3m

Full details of the investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per number of properties at risk of low pressure	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Outperformance payment total					0.120	0.598	0.1
Outperformance payment	0.009	-	0.0046	Triangulated WTP	0.078	0.391	0.0
Outperformance payment (outside P90)	0.009	-	0.0046	Triangulated WTP	0.041	0.207	0.0
Underperformance penalty total					-0.320	-1.598	-0.2
Underperformance penalty	0.009	0.001	0.0086	Triangulated WTP and suggested plan	-0.035	-0.173	-0.0
Underperformance penalty (outside P10)	0.009	0.001	0.0086	Triangulated WTP and suggested plan	-0.285	-1.425	-0.2

Table 8-46 - Low Pressure – Calculation of Incentive Rates

C3 - Delivering outcomes for customers

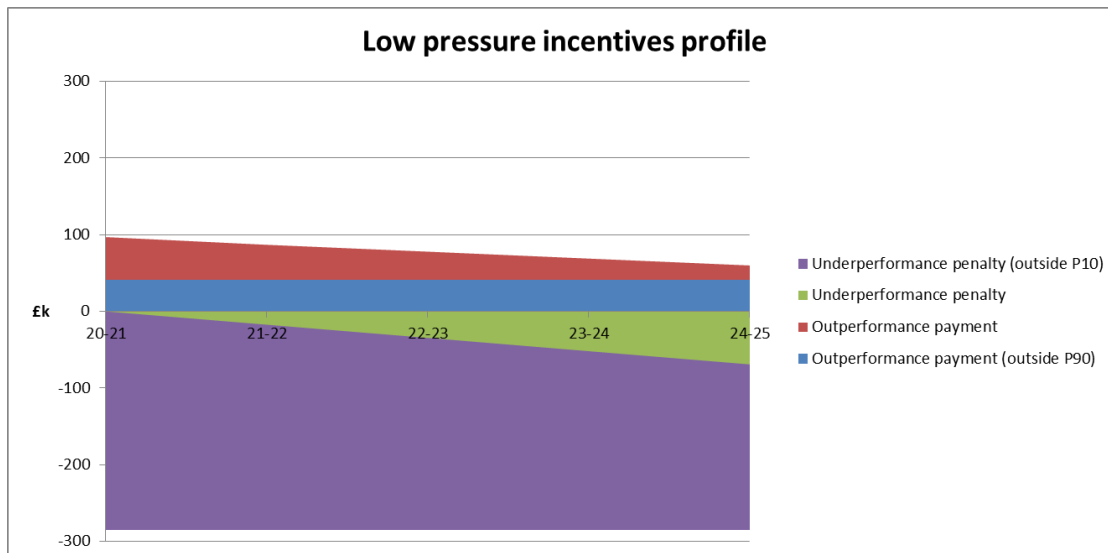


Figure 8-38 - Properties at risk of low pressure - incentives profile

The P10 level is set at 96 properties and the P90 level at 9 properties. This means there is £1.425m underperformance of the £1.598m total outside of P10 and £0.207m out of £0.598m outperformance outside of P90.

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.9.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

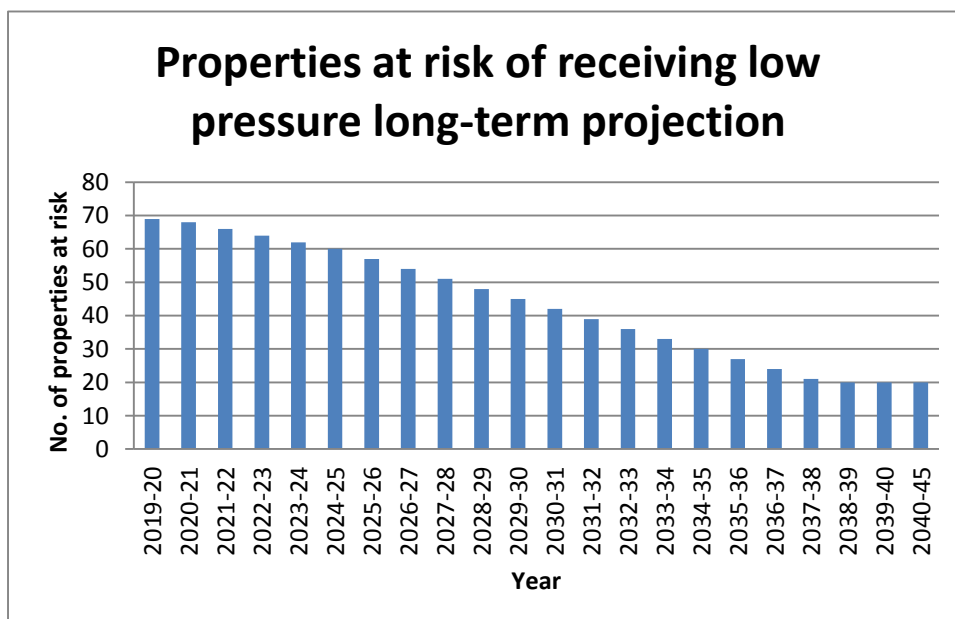


Figure 8-39 - Properties at risk of low pressure - long-term projection

It is our long-term ambition to significantly reduce the number of properties at risk of receiving low pressure.

8.10. Turbidity performance at treatment works

8.10.1. Definition

This was an AMP6 sub-indicator to our Asset Reliability (Non-Infrastructure) performance commitment. It is now being reported as a separate performance commitment to ensure that our performance is more transparent and therefore easier to understand for our customers.

Owat expects that bespoke asset health measures follow a standardised definition for reporting. This reporting definition is aligned to Ofwat's guidance from June Return 2011 (a submission document that Ofwat required from companies that has since been superseded by the informed reported as part of the Company's Annual Performance Report). This is the number of operational potable water treatment works whose turbidity 95th percentile equals or exceeds a 0.5 NTU (Nephelometric Turbidity Units) threshold.

The measure enables the company to consider the following:

- the use of turbidity as a measure to provide assurance of the optimal operation of filter performance, where filtration is used to address identified risks associated with chlorine resistant pathogens in the source water;
- the impact of turbidity on the efficiency of disinfection processes; and
- the effect that turbidity has on the aesthetics of the treated water.

The original definition (as submitted to Ofwat on 3 May) can be found in Appendix 3.

8.10.2. Customer views

Turbidity performance at treatment works is linked to the appearance of the water that comes out of customers' taps. We know the appearance of water is valued highly by our customers. It's a consistent top priority across all research and engagement. 1.5% of all complaints we receive are related to the appearance of customers' water. Our triangulation of a range of valuation studies concluded that a central value of customers' Willingness to Pay in this area is £2.10.

Please see customer views on Customer Contacts about water quality) for more details.

We have asked customers about their views on water appearance as part of the following activities:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey (customer priorities and perceptions) (A5);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Triangulation by attribute (B20); and
- Youth board (A12).

8.10.3. Regulatory requirements

In its final methodology Ofwat stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

We have assumed that the target should be set at zero, which is consistent with our historical performance. This assumption takes into account Ofwat’s view on water quality compliance indicators; namely, that companies should aim for full compliance as a minimum.

Turbidity Performance at Treatment Works – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	0	0	0
	Company Performance	0	0	0	0

As the target is to achieve the maximum level attainable no other approaches to setting the performance commitment levels have been considered.

8.10.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because the activity relates to water treatment.

8.10.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’ , published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Turbidity performance at treatment works	No. of failures	0	N/A	0	N/A	0
Forecast increase to the average bill from additional investment			N/A	0	N/A	N/A

Table 8-47 - Draft business plan information on Turbidity

8.10.6. Draft Business Plan Consultation feedback

Turbidity performance at treatment works is linked to the appearance of the water that comes out of customers’ taps, as well as water quality compliance.

The appearance of water is often a priority for customers had the highest customer support for the faster plan out of all areas in the safe and reliable outcome. When we talked to customers about water that doesn’t look clear they sometimes talked about it at the same time as health and safety concerns, whilst others acknowledged the distinction between

C3 - Delivering outcomes for customers

aesthetic and safety issues. Some customers say they experience regular issues with the appearance of water and are keen to see it improved.

8.10.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Turbidity - Summary						
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Penalty (£m) - total 2020-25
Max level attainable	0	0	Under Only		<input checked="" type="checkbox"/>	-4.171
						Penalty (£m) within P10- total 2020-25
						-4.171

Table 8-48 - Turbidity - Summary

The overall ODI design and performance commitment targets are presented in the chart below.

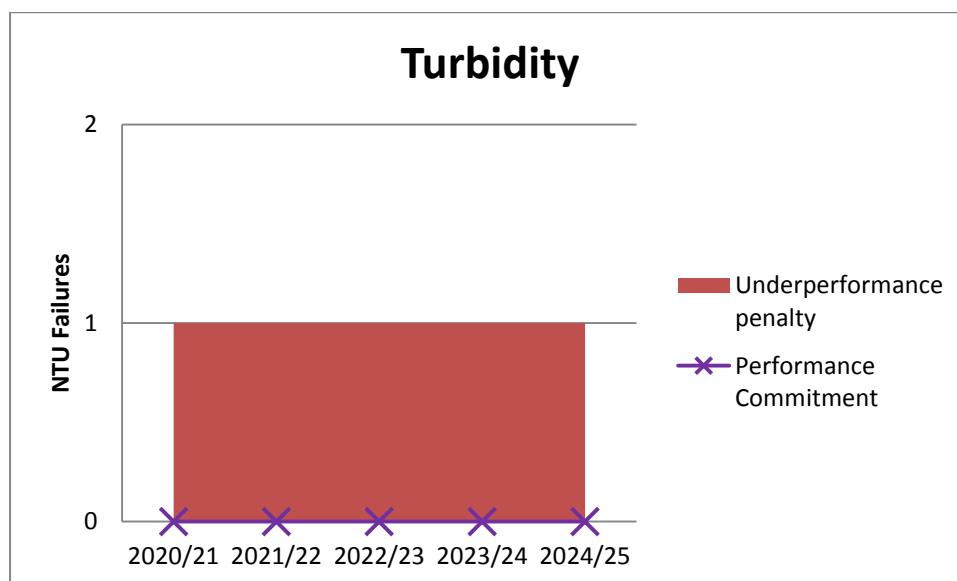


Figure 8-40 - Turbidity ODI Design

The target has been set at the maximum level attainable, i.e. there is no further stretch possible beyond zero turbidity failures.

There is no underperformance penalty deadband proposed; any reported failure would automatically result in the maximum annual penalty rate. The penalty level has a collar at one failure; if more than one failure is reported in a year no further penalty applies.

Collars have been included for this performance commitment. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor

C3 - Delivering outcomes for customers

performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall collars on our incentive package as a whole. Given this is for asset health and is weighted as a multiple of directly allocated cost, the use of a very tight collar is justified.

Our proposed AMP7 targets are provided below for information. We propose that the table below be included in our final determination.

Committed Performance Levels							
Turbidity	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	No. of failures	0	0	0	0	0	0
Underperformance Penalty Deadband	No. of failures		0	0	0	0	0
Standard Underperformance penalty collar	No. of failures		1	1	1	1	1

Table 8-49 – Turbidity - Committed Performance Levels

8.10.8. Costs, Benefits and Incentive Rates

We have not applied Ofwat's standard formula for this performance commitment. The rate proposed is greater than the rate that is calculated using the standard Ofwat formula; the deviation away from the formula is in our customers' interests and this approach carries greater risk to Bristol Water than a cost-only approach. We have applied a cost-only incentive, based on the following formula:

- $10^* (\text{Unit cost} * 50\% \text{ customer sharing rate}).$

As the costs of avoiding Turbidity are indirect, we did not apply a 50% sharing rate to this spend as in reality it is not possible to accurately separately identify Turbidity expenditure. Effectively, for asset health penalties and to recognise the deadband we use 10^* cost and then apply the 50% sharing rate.

Benefit values are discussed further below.

The costs have been taken from the company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment contributing to Turbidity is Mechanical & Electrical WTW maintenance at a total value of £2.5m.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

C3 - Delivering outcomes for customers

Incentive per NTU	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Underperformance penalty total	0.163	0.176	0.308	10*cost to get asset health penalty	-0.834	-4.171	-0.4%

Table 8-50 – Turbidity – Calculation of Incentives Rates

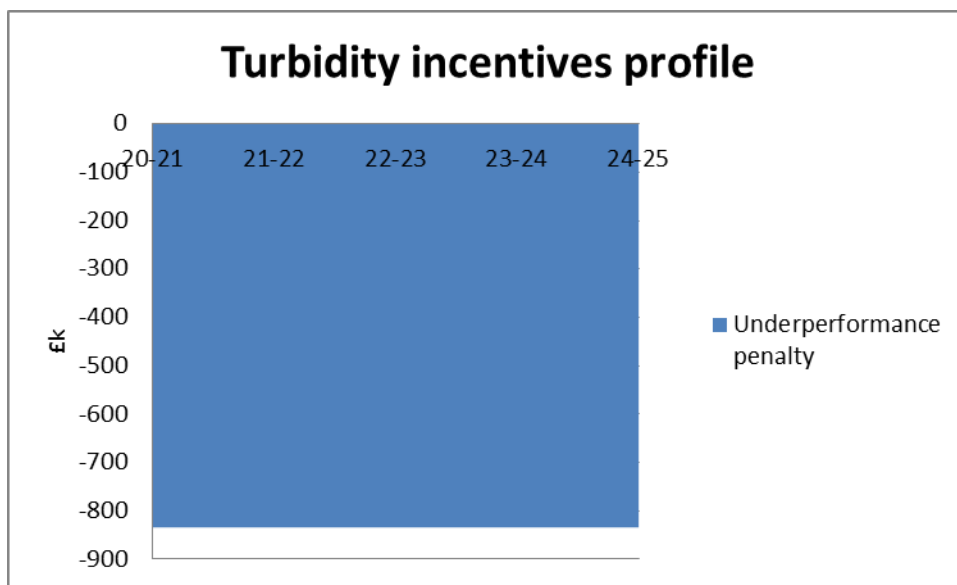


Figure 8-41 - Turbidity Incentives Profile

We have no direct WTP for turbidity; we have estimated WTP for turbidity based on outage of one week, although as we do not have any experience with turbidity failures since 2010 we do not consider this to be a robust estimate. We have therefore used a cost-based incentive. We have allocated a suitable multiplier of cost in order to derive a reasonable range of asset health penalties to protect customers against turbidity failures. Given the importance of turbidity, our overall RoRE range that we tested used a 10 times cost multiplier for this metric. The WTP was calculated using the values below.

C3 - Delivering outcomes for customers

1. Performance Commitment

PC	Turbidity at water treatment works
Units	Number of turbidity failures

2a. Input values

	Units	Lower	Central	Upper
Unplanned outage	%	£20,686	£103,432	£372,355
Supply interruptions, mains burst, unplanned outage, u	Properties at reduced risk	0	534.2	3464

2b. Other inputs

Number of treatment works	16
Number of properties	536138
Likelihood that a turbidigy failure will cause an interrup	0.1%
Works output	

3. Assessment of the value prior to addressing overlaps

Number of properties per WTW	33,509			
Likelihood of interruption	1%			
Expected properties per works failing	335			
Value of an interruption		Lower	Central	Upper
		-	179,003	1,160,739
Proportion of maximum production capacity due to 1 wc	6.3%			
% of year outage lasts - 1 week	1.9%			
Proportion of maximum production capacity due to 1 wc	0.12%	Lower	Central	Upper
		2,486	12,432	44,754
		Lower	Central	Upper
		£2,486	£191,435	£1,205,493

4. Further adjustment for overlaps

None required as the likelihood of a turbidity failure is very low so this is unlikely to overlap with the interruptions performance commitment in practice.

Figure 8-42 - Calculation of benefit value for Turbidity

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.10.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. For Turbidity performance at our treatment works the long-term target is to remain at zero (full compliance).

8.11. Unplanned maintenance – non-infrastructure

8.11.1. Definition

This was an AMP6 sub-indicator to our Asset Reliability (Non-Infrastructure) performance commitment. It is now being reported as a separate performance commitment to ensure that our performance is more transparent and therefore easier to understand for our customers

Although this is not a common metric, Ofwat has set standard definitions for asset health metrics. We have partially adopted the standard definition, which can be found on the [Ofwat website](#). This is the total unplanned non-infrastructure maintenance jobs, required as a result of equipment failure or reduced asset performance,. The data collected is a count of all the unplanned jobs completed (with a completed work order). It is not a count of investigations where nothing was done, or minor jobs carried out as a result of an inspection - which are not recorded as a work order. We have opted to continue reporting the total number, rather than the number of jobs as a proportion of all non-infrastructure assets, because this ensures the performance commitment is consistent in its reporting in AMP6, which aids comparability and transparency for our customers when considering our historic

performance.

The original definition (as submitted to Ofwat on 3 May) can be found in Appendix 3.

8.11.2. Customer views

We talked to customers about the way that our work can most impact them, in this case, most likely through interruptions to their water supply, as set out in the summary of views on Supply Interruptions above. Unplanned maintenance events is an asset health measure so does not directly link to interruptions, although having production available is an important part of resilience at peak demand (both freeze-thaw winter and dry weather circumstances).

When we spoke to customers about this performance commitment specifically, they didn't prioritise it to the same extent as other measures relating more directly to their water quality and the impact our work has on the environment. As with some other issues relating to interruptions to supply, many customers saw these as inevitable and only causing short-term disruption.

Engagement and research with customers on their views on reliability and interruptions to supply include:

- Customer priorities focus groups (B5);
- Revealed preference research (B15);
- Focus groups on performance commitments (B14); and
- Triangulation by attribute (B20).

8.11.3. Regulatory requirements

In its final methodology Ofwat stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

Although there is some data reported on across the industry, this has not been reported on a consistent basis and so is of little relevance as a comparator. We have therefore considered our historical performance to date when proposing our future targets.

Unplanned Maintenance (Non-Infrastructure) – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	3976	3976	3976
	Company Performance	3595	3353	2870	3279

Table 8-51 - Unplanned Maintenance (Non-Infrastructure) – Historical Information

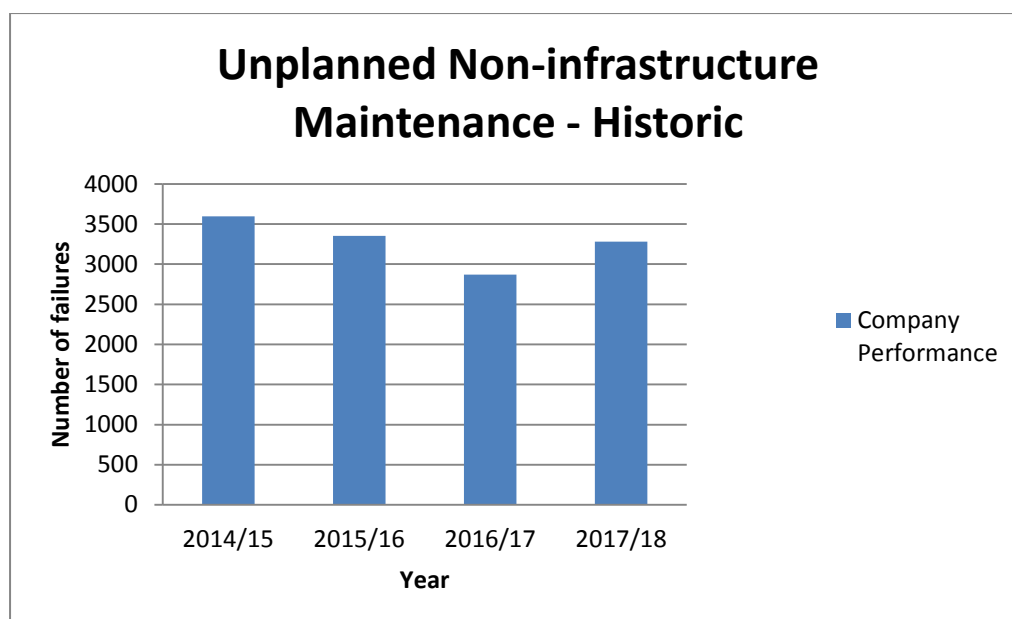


Figure 8-43 - Unplanned Non-Infrastructure Maintenance - Bristol Water historic performance

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	3272	Internal judgement was used to consider whether to maintain targets at historic levels, but a review of the optimised investment programme meant that the 3 year average proved to be the best way of using this target as a measure of asset health		✓
Comparative information	N/A	Comparative information is not available		
Historical information	3272	Our average performance over a three year period is 3272		
Minimum improvement	3181	A 20% improvement rate on our PR14 target would result in this target		
Maximum level attainable	2870	To comply with the Ofwat methodology the target would be set at the best historical performance to date of 2870		
Expert knowledge	3976	Internal judgement was used to consider whether to maintain targets at historic levels, but a review of the optimised investment programme meant that the 3 year average proved to be the best way of using this target as a measure of asset health. This target based on expert judgement was used on our draft Business Plan	✓	

Table 8-52 - Assessment of approaches for setting Unplanned Non-Infrastructure Maintenance Events performance commitment

8.11.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because of the activity relates to water treatment.

8.11.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water...Clearly’, published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. However, no long-term target was suggested as this performance commitment was not considered as a long-term target for the Company.

We also then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target		
			Slower improvement	Suggested improvement	Faster improvement
Unplanned maintenance – non-infrastructure	No. of jobs	3976	N/A	3976	N/A
Forecast increase to the average bill from additional investment			N/A	0	N/A

Table 8-53 - Unplanned Maintenance (Non-Infrastructure) – Draft Business Plan Proposals

We did not consult on long-term targets for unplanned non-infrastructure maintenance as it is not in customer interests to necessarily incentivise lower maintenance in the long term, and the balance between planned and reactive maintenance will be reviewed from a long-term least cost perspective over time.

8.11.6. Draft Business Plan Consultation feedback

We talked to customers about the way that our maintenance work can most impact them, in this case, most likely through interruptions to their water supply. Most customers who commented on supply interruptions said they were not concerned because either they had not experienced them or because they felt they were manageable if customers were kept informed.

8.11.7. Final performance commitment, stretching targets and ODI

We have proposed the following:

Unplanned Maintenance (non-infrastructure) -Summary						
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Penalty (£m) - total 2020-25
Historical information	3976	3272	Under Only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-4.722
						Penalty (£m) within

P10– total 2020-25
-2.062

Table 8-54 - Unplanned Maintenance (Non-Infrastructure) – Summary

The overall ODI design and performance commitment targets are presented in the chart below.

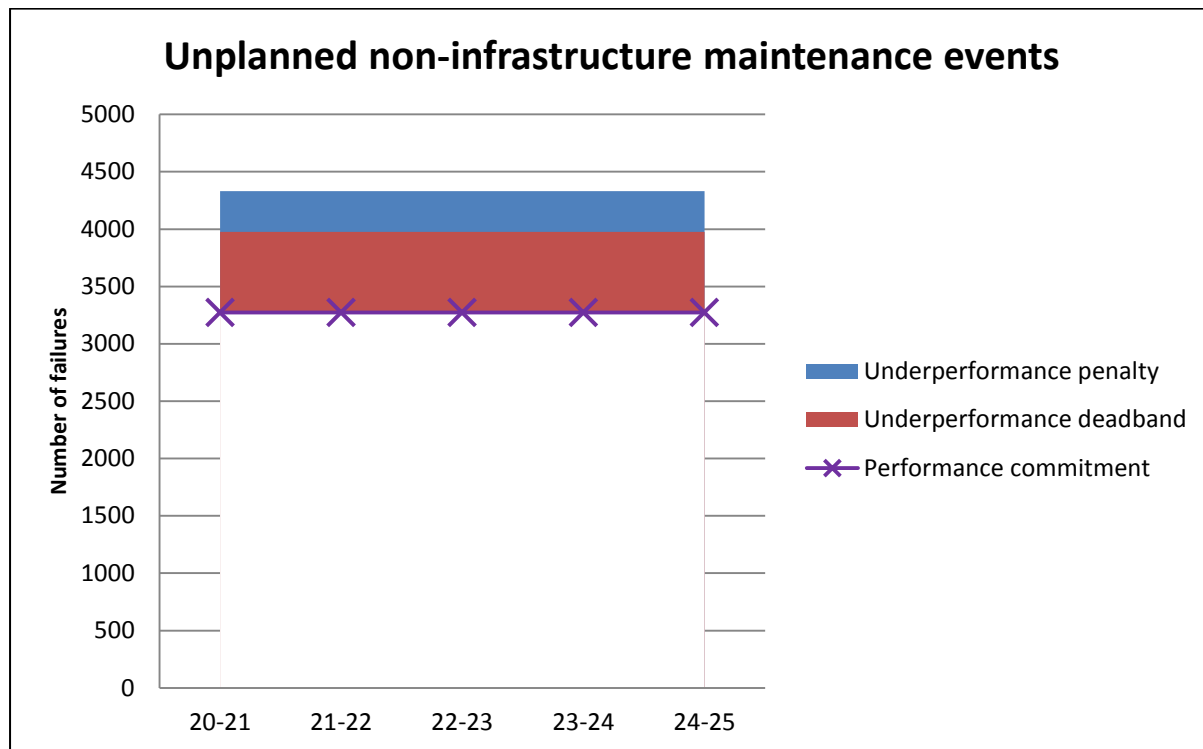


Figure 8-44 - Unplanned non-infrastructure maintenance events - ODI design

No glidepath is being proposed for this performance commitment. This approach aligns to Ofwat’s methodology for serviceability metrics; the target has been reset for the next five-year period. The level of stretch in the targets has taken into account our historical performance. The target has been set at a 3-year average of our best historic performance, at 3272. We considered using the best year or a 2-year averages, but considered that this would not reflect asset health and would provide a disincentive to maintain stand-by assets. This reflects that customer service has not been impacted by outage caused by failure to carry out planned non-infrastructure maintenance work.

An underperformance deadband has been included for this performance commitment in recognition of the natural variation in operational factors affecting this performance commitment that are outside short-term control, appropriate for monitoring long-term asset health. The underperformance deadband has been set at the target for the AMP6 reporting period, reflecting that this is the point at which long-term asset health could be deteriorating.

Collars have been included for this performance commitment. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in

C3 - Delivering outcomes for customers

our Customer Forum event in July 2018 also supported our proposals to include overall collars on our incentive package as a whole.

Our proposed AMP7 targets are provided below for information. We propose that the table be included in our final determination.

Committed Performance Levels							
Unplanned Maintenance (non-infrastructure)	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
Target	No. of jobs	3976	3272	3272	3272	3272	3272
Underperformance Penalty Deadband	No. of jobs		3976	3976	3976	3976	3976
Standard Underperformance penalty collar	No. of jobs		4331	4331	4331	4331	4331

Table 8-55 - Unplanned Maintenance (Non-Infrastructure) – Committed Performance Levels

8.11.8. Costs, Benefits and Incentive Rates

We have not applied Ofwat's standard formula for this performance commitment. The rate proposed is greater than the rate that is calculated using the standard Ofwat formula; the deviation away from the formula is in our customers' interests and this approach carries greater risk to Bristol Water than a cost only approach. We have applied a cost-only incentive, based on the following formula:

- $8 * (\text{Unit cost} * 50\% \text{ customer sharing rate})$

When undertaking our cost benefit analysis, we have taken into account the benefits that the improvements in this performance commitment will have on our water quality contacts (appearance and taste/ odour) performance commitments and its impact on the likelihood of our customers to experience occasional low pressure. Benefit values are discussed further below.

The incentive rates is set at 8 times cost as a direct WTP is not available (other than the water restrictions component as per unplanned outage and turbidity asset health measures) and a level of penalty to reflect lumpiness in maintenance expenditure at treatment works and suitable incentives for long-term asset health overall has resulted in this strong incentive to investment in maintenance being selected.

The main investment cases for 2020-25 which contribute to the delivery of this outcome include:

- Purton High Lift Pumping Station Refurbishment £2.0m
- Other pumping station refurbishment £2.9m
- Axbridge PS refurbishment £3.4m
- Stowey Ozone plant refurbishment £3.2m
- Cryptosporidium barrier plant refurbishments £2.4m

Full details of these investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

C3 - Delivering outcomes for customers

Incentive unplanned maintenance event per	WTP £m	Annual cost £k	Unit rate £k	Basis	Total Annual £m	Total AMP7 £m	RORE %
Underperformance penalty total					-0.944	4.722	-0.4%
Underperformance penalty	0.041	0.665	2.66	8*cost to get asset health penalty	-0.412	-2.062	-0.2%
Underperformance penalty (outside P10)	0.041	0.665	2.66	8*cost to get asset health penalty	-0.532	-2.660	-0.2%

Table 8-56 - Unplanned Maintenance (Non-Infrastructure) – Calculation of Incentive Rates

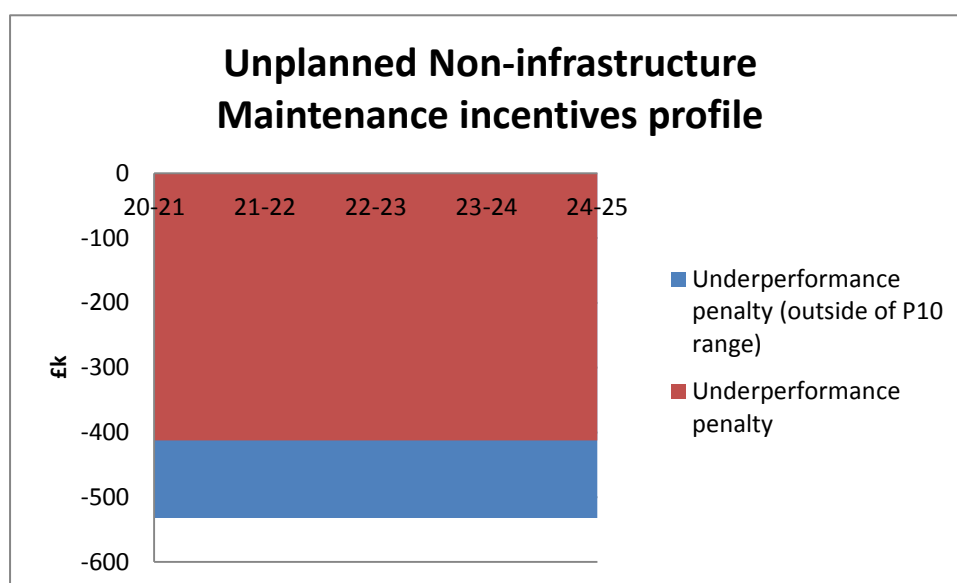


Figure 8-45 - Unplanned Non-Infrastructure Maintenance - Incentives profile

The P10 level is set at 4,131 (i.e. 200 events below the cap) based on asset modelling to estimate the likelihood that additional maintenance events would arise with a phased approach to reactive maintenance.

For the WTP we have used the operational pressure value from our triangulation report, which is a one off pressure incident (and not the value for a chronic pressure problem). This is a benefit not covered by the other performance commitments, including on the DG2 properties at risk of receiving low pressure. The WTP was calculated using the values below.

C3 - Delivering outcomes for customers

1. Performance Commitment					
PC	Unplanned maintenance on non-infrastructure assets				
Units	Number of jobs				
2a. Input values					
	Units	Lower	Central	Upper	
One-off pressure	#REF!	£80.00	£200.00	£310.00	
2b. Other inputs					
Water pumping stations		15			
Water treatment works		16			
Properties		536,138			
Likelihood that unplanned maintenance impa		0.01%			
3. Assessment of the value prior to addressing overlaps					
	Average properties per asset	34,590	Assumes a WTW and WPS are in series not in parallel.		
	Expected properties per job	3			
	Impact per job	£276.72	£691.79	£1,072.28	
4. Further adjustment for overlaps					
	None required.				

Figure 8-46 - Calculation of benefit value for Unplanned Non-Infrastructure Maintenance Events

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.11.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

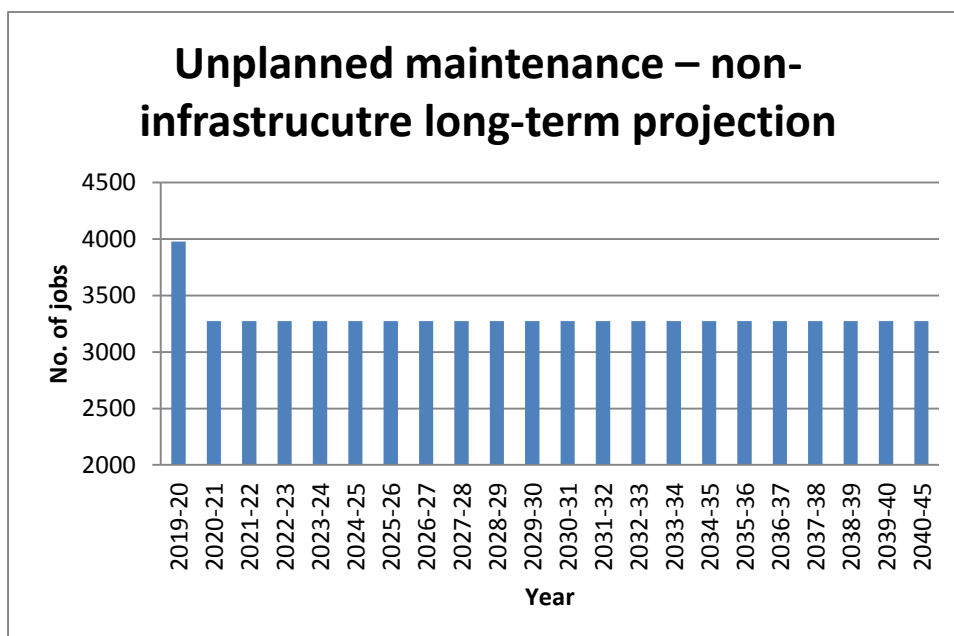


Figure 8-47 - Unplanned Non-Infrastructure Maintenance Events - long-term projection

Our long-term projections reflect our targets for the next five years but we will review during AMP7 our capabilities for further improving on this performance commitment in the future.

8.12. Population at Risk from Asset Failure

8.12.1. Definition



This is a bespoke performance commitment unique to Bristol Water; it is a revision of our AMP6 performance commitment for AMP7²⁶.

This measure relates to populations in centres of greater than 10,000 who are at risk of failure of the asset serving them (providing less than 3m water pressure for a duration greater than 30 minutes). The risk relates to water supply interruptions over 24 hours in the event that a critical asset (either a pumping station, reservoir or critical mains) is unable to operate or a source is contaminated.

This metric reflects the risk of large scale interruptions to supply and represents population centres that have inadequate resilience to disruptive events outside of normal operating limits, where:

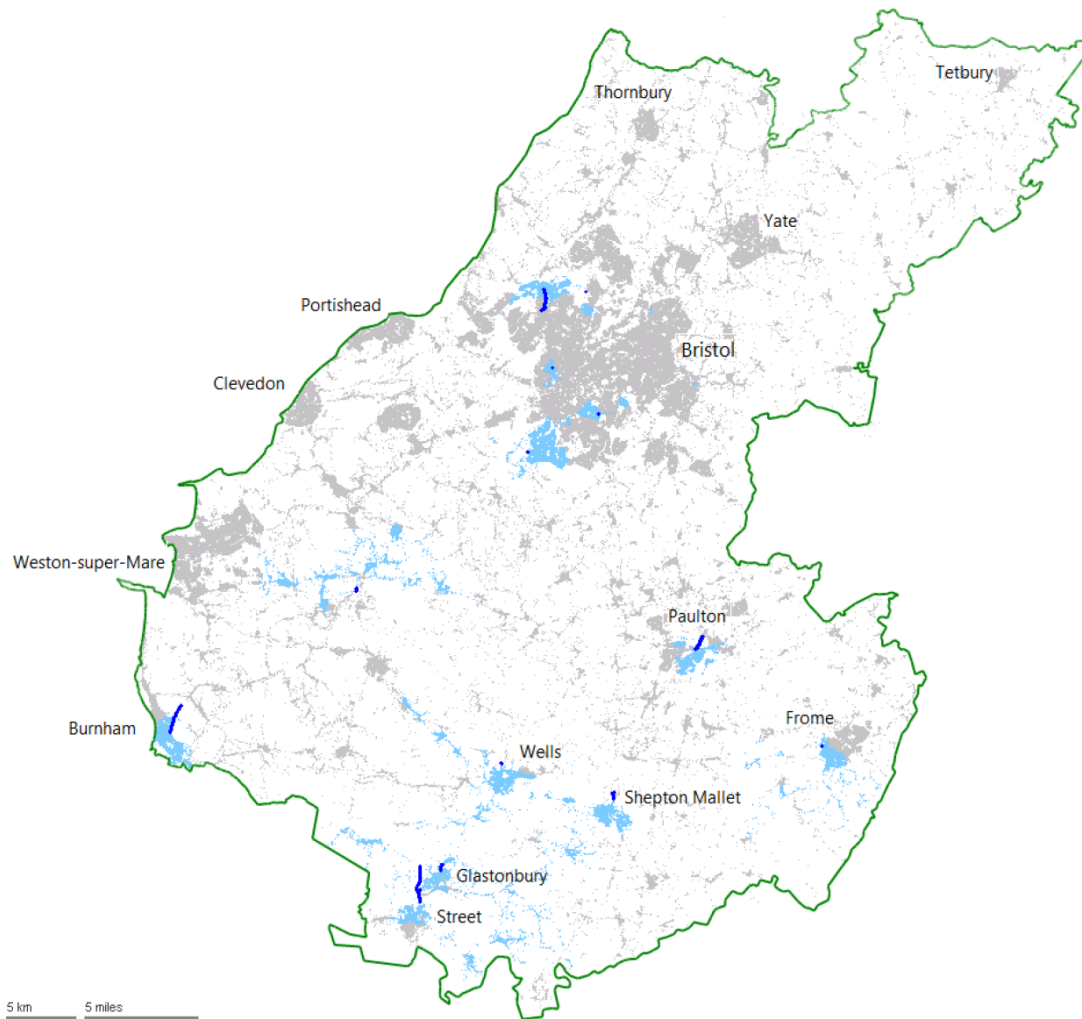
- There is no redundancy/backup (as the service disruption is a long-term interruption to supply >24 hours);
- There is a provable and non-trivial risk from an identifiable hazard that means the system cannot be repaired within a set timescale (e.g. treatment works in flood zone, inaccessible trunk main);
- More than a given threshold of customers would be affected if the system fails (in population centres >10,000); and
- The risk assumes there is absolutely no connection to any other supply source.

The maps below show the planned activity through laying new mains and installing new valves which is intended to deliver this performance commitment.

²⁶ Our AMP6 performance commitment of Population in centres >25,000 at risk from above ground asset failure related to a single source of supply - water treatment works (and it did not include mains). This is resolved in AMP6 by the Southern Strategic main and, in AMP 7, the Glastonbury-Wells main.

C3 - Delivering outcomes for customers

New Mains to mitigate populations at risk $\geq 10\,000 < 25\,000$





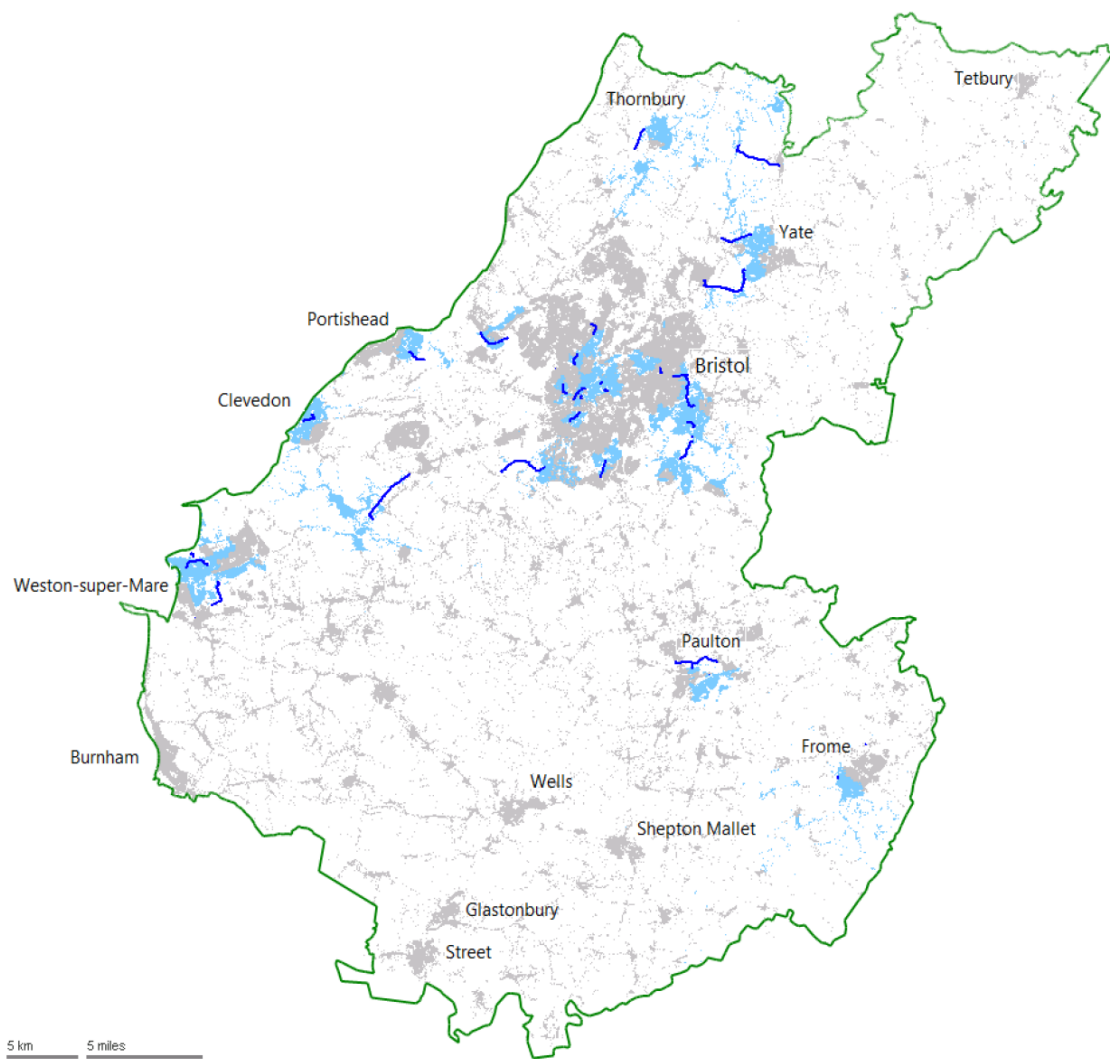
KEY	
New Mains to mitigate $\geq 10\,000 < 25\,000$ population	 8.9 km
Population at Risk $\geq 10\,000 < 25\,000$	 194, 2



Figure 8-48 - Generic Interventions for Population Centres greater than 10,000, less than 25,000 (new mains)

C3 - Delivering outcomes for customers

New Valves to mitigate populations at risk $\geq 10\ 000 < 25\ 000$





KEY	
New Valves to mitigate $\geq 10\ 000 < 25\ 000$ population	 50 x Dynamic Valves 55 x Manual Valves
Population at Risk $\geq 10\ 000 < 25\ 000$	 368, 250* population <small>* 2.31 multiplier on Suoolv Points</small>



Figure 8-49 - Generic Interventions for Population Centres greater than 10,000, less than 25,000 (new valves)

The full definition of this measure can be found in Appendix 3.

Full details of our plans for resilience investment can be found in 'Resilience Investment Case', which can be found in the Section C5B Technical Annex.

8.12.2. Customer views

Reliability of water supply is a top priority for our customers. Please see customer views on mains bursts and unplanned outage.

We started talking to customers specifically about the idea of a “back-up supply” when considering a range of Business Plan options. In our initial conversations, customers had mixed views. Some saw the value in investing to ensure as many customers as possible were served by more than one source, whereas others were happy with the current level of service and risk and did not see the need for additional investment. We also talked to customers about improving the resilience of our network in the context of managing supply – at our deliberative events we found that they were supportive of measures that made the network more flexible and avoided the need to increase supply in some areas.

Engagement and research with customers on their views on reliability and interruptions to supply include:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Customer experience of attributes review (B4);
- Focus groups on performance commitments (B14);
- Revealed preference research (B15);
- Triangulation by attribute (B20);
- Business Plan options – deliberative event (B24);
- Business Plan options – focus groups with seldom-heard customers (B25);
and
- Draft Business Plan consultation: Representative Survey (B28).

8.12.3. Regulatory requirements

Bristol Water has made significant investment in resilience over successive price review periods, to improve the reliability of our network, provide greater inter-connectivity and increase the robustness of our business. This is a bespoke performance commitment unique to Bristol Water; comparative information is not available. It has been included as Ofwat has mandated at least one bespoke performance commitment must reflect the company's approach to resilience. Our internal data suggests there are 832,886 population (2.34 per property) in population centres greater than 10,000.

The approaches considered for assessing the performance commitment levels are below.

C3 - Delivering outcomes for customers

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	0 population in centres over 10,000 over a 10 year programme	This target considers the economic level of service, customer preferences, historical data and the impact on the wider environment. This target would leave 290,000 in population centres over 10,000 at risk by 2024/25	✓	✓
Comparative information	N/A	Comparative information is not available		
Historical information	N/A	Historical information is not available		
Minimum improvement	0 population in centres over 25,000	This would be a continuation of our AMP6 performance commitment	✓	
Maximum level attainable	0 population in centres over 10,000 over a 5 year programme	This target deliver our resilience programme but at a faster and costlier rate than the 10 year programme proposals	✓	
Expert knowledge	N/A			

8.12.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because of the investment relates to network distribution and resilience of supplies.

8.12.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. Within this document we committed to providing all major population centres to be served by more than one source of supply.

We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Population at Risk from Asset Failure	No. of people (population)	Centres over 25,000	Centres over 25,000	Centres over 10,000 people (10 year programme)	Centres over 10,000 people (5 year programme)	Centres over 3,000 people
Forecast increase to the average bill from additional investment £			1	3	3	N/A

Table 8-57 - Population at Risk from Asset Failure – Draft Business Plan Proposals

8.12.6. Draft Business Plan Consultation feedback

C3 - Delivering outcomes for customers

When we talked to customers about protection against a major water supply event a few commented on the importance of preventing a major event, but most commented more generally on interruptions to supply. Customers from the online panel preferred the slower plan, whereas customers in the representative survey preferred the suggested or faster plans.

Most customers chose the lower cost plan for protecting against major water supply events, but the remainder were split between the suggested and faster plans even though there is no difference in cost. This suggests that supply events or outages are not a priority and that the current level of risk is acceptable. This was because most customers had not experienced severe interruptions, and those that had were happy with the customer services response. However, within the package of measures within the draft Business Plan, the suggested plan was preferred including the resilience reduction, as long as the plan could be delivered at a lower cost. We tested a delay at a lower cost through our acceptability testing.

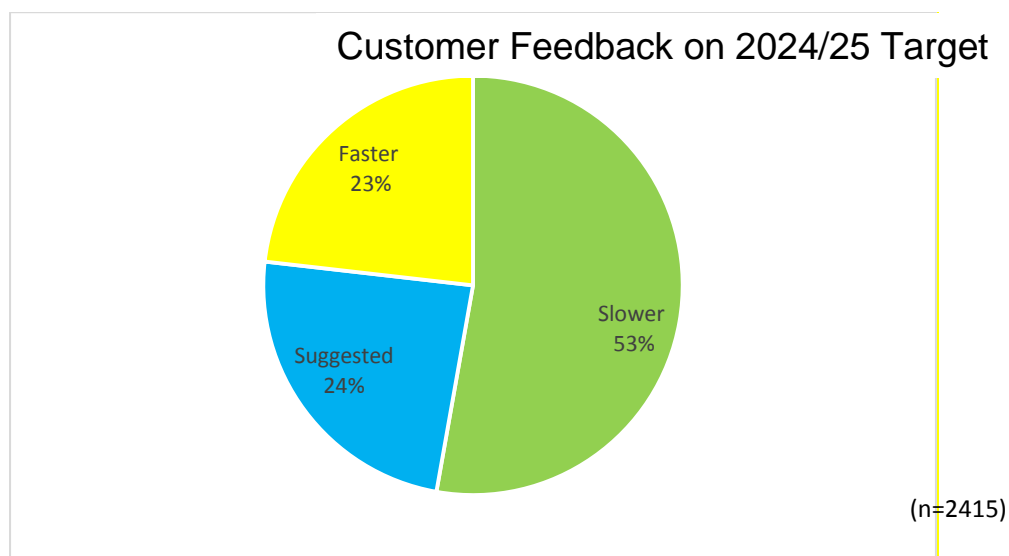


Figure 8-50 - Customer preferences for Draft Business Plan proposals on Population at Risk from Asset Failure

We initially considered an ODI plan that did not include any deadbands (which follows Ofwat’s preferred approach), in addition to slower planned progress on implementing asset resilience schemes throughout AMP7. This alternative design aligns to the feedback from our consultation with customers.

Population at Risk from Asset Failure – Alternative Targets							
Per property	2019/20 (Baseline)	Stretch	2020/21	2021/22	2022/23	2023/24	2024/25
Target	832,886	Cost/ benefit analysis	832,886	832,886	542,886	542,886	542,886
Underperformance Penalty Deadband			832,886	542,886	542,886	542,886	542,886
Standard Underperformance penalty collar			832,886	832,886	832,886	832,886	832,886
Outperformance Payment Deadband			832,886	542,886	542,886	542,886	542,886

C3 - Delivering outcomes for customers

Standard Outperformance Payment Cap			0	0	0	0	0
-------------------------------------	--	--	---	---	---	---	---

Table 8-58- Alternative targets considered for Population at Risk of Asset Failure

The conclusion on safe and reliable supply outcome measures was to continue with the suggested plan, if phasing of improvement means that it can be delivered at a time when bills are reducing overall. A safe and reliable supply has always been the top priority for customers throughout all our research and engagement.

Final plan acceptability testing (which included comparative information on bills and performance) identified 75% support for the proposals for this service area, with only 4% of people disagreeing.

8.12.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Population at Risk from Asset Failure – Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Outperformance Payment (£m) - total 2020-25	Underperformance Penalty (£m) - total 2020-25
Cost/benefit analysis	832,886	290,000	Out and Under		<input checked="" type="checkbox"/>	5.976	-6.440
						Payment (£m) within P90- total 2020-25	Penalty (£m) within P10- total 2020-25
						5.976	-6.440

Table 8-59 - Population at Risk from Asset Failure – Summary

The overall ODI design and performance commitment targets are presented in the chart below.

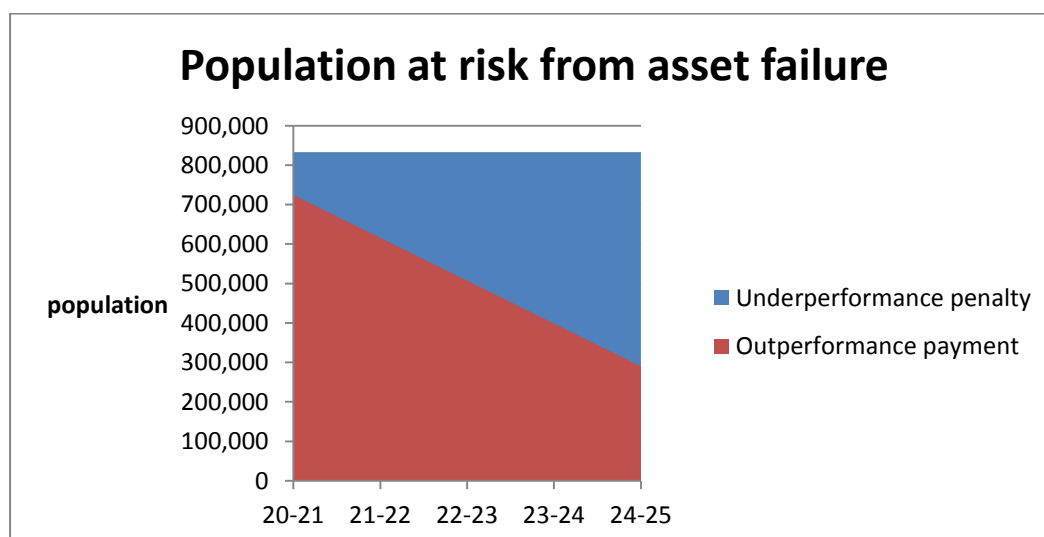


Figure 8-51 - Population at Risk of Asset Failure - ODI Design

Our proposed performance commitment is a ten-year programme to reduce the population at risk to zero, of which 290,000 will not be removed from risk until the 2025-2030 period. The level of stretch in the targets has taken into account a cost/ benefit analysis; there would be

C3 - Delivering outcomes for customers

a substantial cost to meet a target of zero people in population centres >10,000 at risk within AMP7.

No deadbands have been proposed. A standard penalty would be due if we failed to improve on the number of people assumed to be at risk at 2020. The maximum standard payment would be due if we achieved our 2030 target (to have zero people in population centres >10,000 at risk) within AMP7.

Caps and collars have been included for this performance commitment. A cap is justified on the grounds that as this performance commitment has an in-period ODI. We have taken into consideration the importance of bill smoothing to reflect customers' preferences. When combining all data sources from the draft Business Plan consultation we found that there was least support for the faster plan, and broadly a 50/50 split between preferences for the slower and suggested plan. We took from this that our customers did not want bills to be increased by any more than the faster plan, which the proposed cap ensures. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

Our proposed AMP7 targets are provided below for information. We propose that the table be included in our final determination.

Committed Performance Levels							
Population at Risk from Asset Failure	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	No. of people (population)	832,886	724,309	615,732	507,154	398,577	290,000
Underperformance Penalty Deadband	No. of people (population)		724,309	615,732	507,154	398,577	290,000
Standard Underperformance penalty collar	No. of people (population)		832,886	832,886	832,886	832,886	832,886
Outperformance Payment Deadband	No. of people (population)		724,309	615,732	507,154	398,577	290,000
Standard Outperformance Payment Cap	No. of people (population)		0	0	0	0	0

Table 8-60 - Population at Risk from Asset Failure – Committed Performance Levels

8.12.8. Costs, Benefits and Incentive Rates

The baseline formulae for this performance commitment has been determined using Ofwat's standard formula:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The benefit value is based on the unexpected interruptions greater than 24 hours.

C3 - Delivering outcomes for customers

The incremental benefit is based on our customer valuation for unexpected interruptions greater than 24 hours. The source of this value is the stated preference and slider surveys. These values have been compared to other available values from other companies as part of the triangulation process.

The WTP calculation weights the supply interruptions WTP values, using the triangulated value as the central estimate from the NERA acceptability research linked to our draft plan consultation. The values are below:

1. Performance Commitment				
PC	Population at risk from asset failure			
Units	Number of people (population)			
1. Overlap with other PCs				
Supply interruptions	PC covers hypothetical risk unlikely to be realised therefore minimal overlap with other PCs. No adjustment proposed for overlap.			
Unplanned outage				
Unplanned maintenance non-infra				
Mains bursts				
2a. Input values				
	Units	Lower	Central	Upper
24 hours or more	Properties at reduced risk	£0.00	£534.20	£3,464.00
More than a week	Properties at reduced risk	£351.60	£1,339.60	£2,327.60
2b. Other inputs				
Total properties affected by supply interruption	11889			
Properties	536,138			
Likelihood of a supply interruption > 24hours	2.2%			
3. Assessment of the value prior to addressing overlaps				
		Lower	Central	Upper
Per person per interruption > 24 hours p.a.		223	223	1,443
property		2.2%	2.2%	2.2%
Risk of long interruption per property after investment		0.1%	0.1%	0.1%
WTP		2.1%	2.1%	2.1%
		£4.71	£4.71	£30.56
4. Further adjustment for overlaps				
None required as the likelihood of impact occurring within AMP7 is low so this is unlikely to overlap with the interruptions performance commitment in practice.				

Figure 8-52 - Calculation of benefits for Population at Risk of Asset Failure

The £534 WTP per affected property translates into a £228 per person using the standard 2.4 people per property assumption. In 2017/18 11,990 properties out of 526,000 were affected by interruptions greater than 24 hours, a 2.2% risk. We anticipate that the residual risk of a likely impact after this scheme has been implemented is 0.1%. Therefore the change in risk we have used is 2.1%. This therefore translates into $£228 * 2.1\% = £4.71$ per annum per person at risk. We separately had calculated a value of £5.34 per property at risk per year assumes a 1% risk in any one year of an interruption greater than 24 hours, having adjusted the risk to reflect critical assets over areas of 10,000 population rather than the risk in general, as a cross-check.

The costs have been taken from the Company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this outcome include:

- Critical pipe resilience (>10k) £11.1m
- Forum to Millmarsh £0.6m
- Whitchurch to Stowey £0.9m

C3 - Delivering outcomes for customers

Full details of the investment cases can be found in Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per number of people at risk of asset failure	WTP £	Annual cost £	Unit rate £	Basis	Total Average Annual £m	Total AMP7 £m	RORE %
Outperformance payment total	£4.71	-	£2.36	Triangulated WTP for supply interruptions >24hrs	1.195	5.976	0.6%
Underperformance penalty total	£4.71	£1.52	£3.95	Triangulated WTP for supply interruptions >24hrs	-1.288	-6.440	-0.6%

Table 8-61 - Population at Risk from Asset Failure – Calculation of Incentive Rates

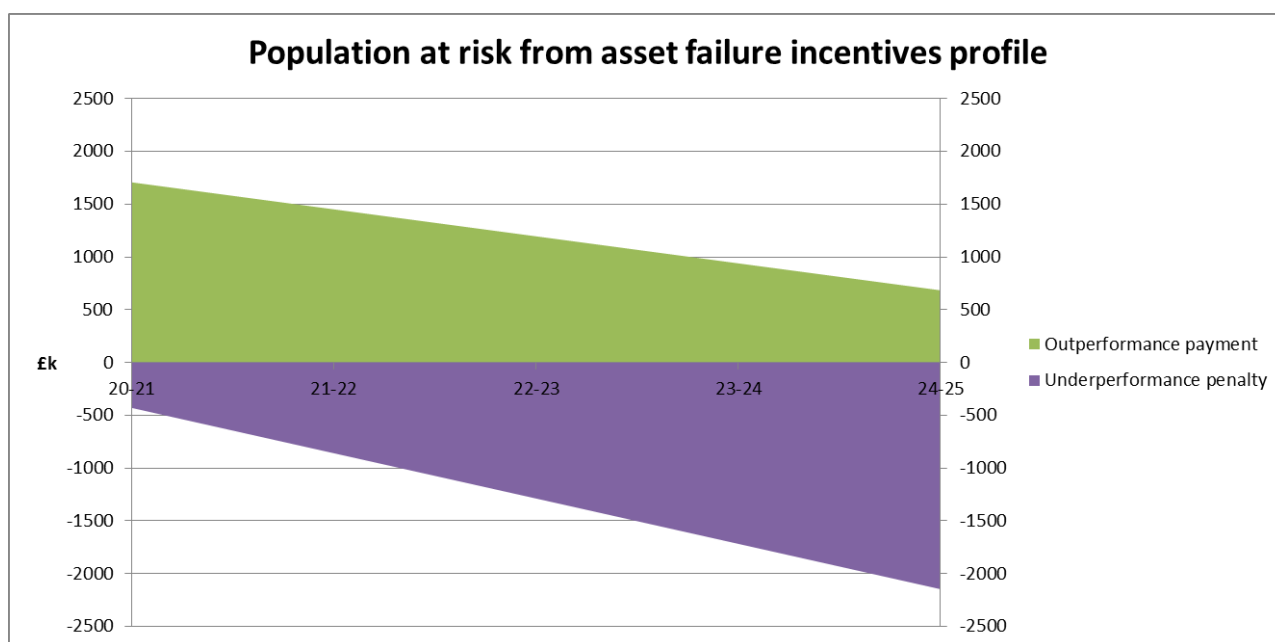


Figure 8-53 - Population at Risk from Asset Failure - Incentives Profile

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

8.12.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

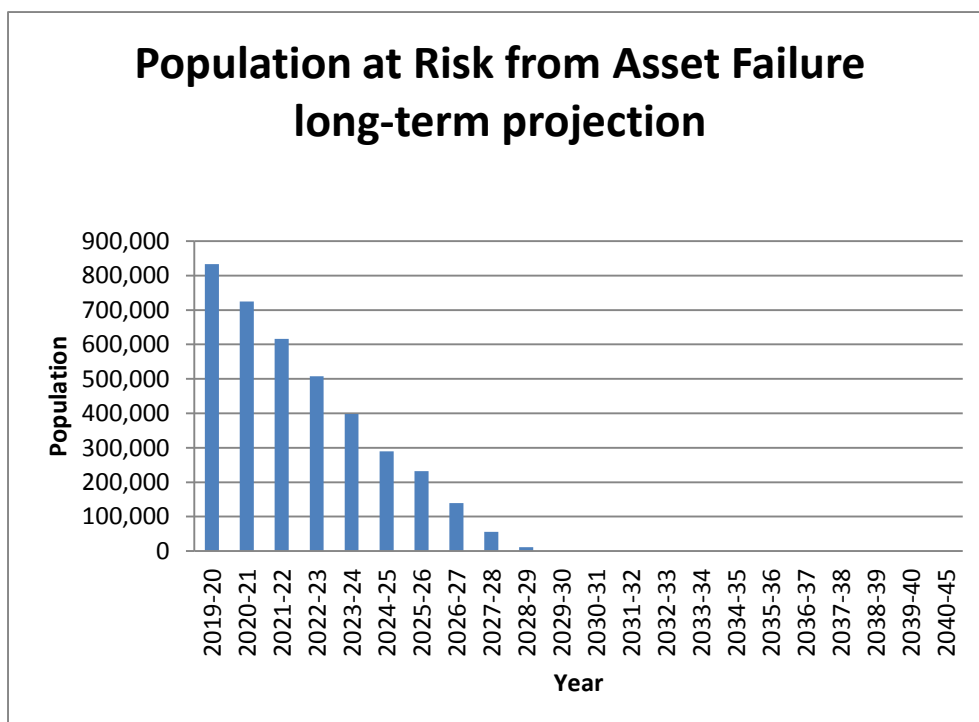


Figure 8-54 - Population at Risk from Asset Failure

Our target for 2030 is to improve the resilience of our water supply network so that an issue with one of our critical assets (e.g. one of our key pumping stations, service reservoirs or mains) does not affect more than 10,000 people. At the end of AMP6 (2015-20), 832,886 people (68.6% of the total population served) will be at risk of losing supply if one of the mains serving them fails and cannot to be fixed within 24 hour period. Our AMP7 (2020-25) target is to provide resilience to 542,886 people (44.7% of the total population served), with the remaining 290,000 people (23.9% of the total population served) addressed in AMP8 (2025-30).

Through our AMP7 investment plans, resilience to these population centres will be provided primarily by implementing a programme of measures to address shortcomings in the resilience of critical mains, including mains duplication, and the installation of manual and dynamic valves and turbidity meters. We will also address known constraints in performance for assets that are part of existing resilience plans, and we will undertake system resilience assessments to develop an improved understanding of the risk including root causes, likelihood and potential risks during planned operational activities.

This performance commitment is based on a ten year programme; the aim is to remove the 290,000 people who remain at risk at the end of AMP7 by the end of AMP8 (by 2030). Beyond this we intend to address a lower threshold of population centres of 3,000, and remove these from being at risk by 2045:

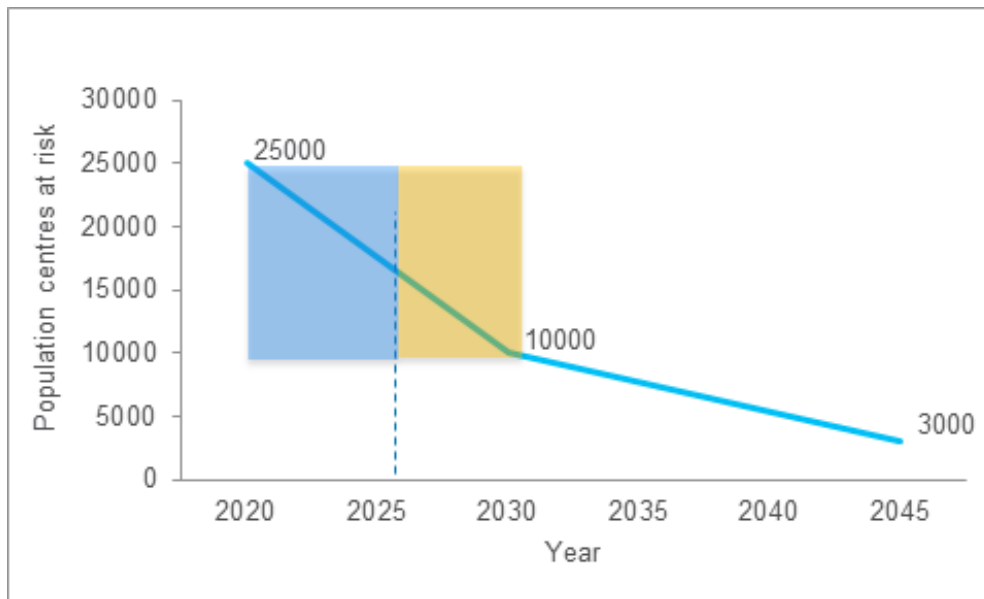


Figure 8-55 - Glide path for Resilience performance commitment targets

9. Detailed evidence by performance commitment – Local Community and Environmental Resilience

9.1. Outcome – Local Community and Environmental Resilience

We make our services robust to what the future may hold. We achieve this through collaborative working with our communities and through protecting and enhancing our local environment.



9.2. Leakage

9.2.1. Definition



We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). Annual average leakage is defined as the sum of distribution system leakage, including service reservoir losses and trunk main leakage plus customer supply pipe leakage. It is reported as the annual arithmetic mean (referred to as ‘average’ in the guidance) daily leakage expressed in mega-litres per day (Ml/d).

9.2.2. Customer views

Leakage is a consistently high priority for customers in research including our annual surveys, focus groups on priorities and deliberative workshops on resilience and demand-reduction. A quarter of all calls to our operational team are about leaks and customers are less satisfied than average with our response. We know that leaks are one of the most visible service failures for us, and the roadworks often involved in repairing them can be disruptive to customers as well. Our future customers told us that leakage can demotivate customers to save water. Whenever we talk in detail to customers about leakage, they are surprised by the amount of water lost through leakage. Customers want us to be ambitious about leakage targets, but are often reassured by our relatively good performance compared with other water companies.

Our valuation surveys tell us customers place a high value on reducing leaks, and when we talk to customers about long-term water supply they prioritise reducing leaks as a good way to reduce demand. Following triangulation, we estimate a conservative central valuation from a large Willingness to Pay study of 60p per customer to reduce leakage by 1 megalitre per day, and a higher estimate of £11.00, these figures are weighted to reflect the different views of business and domestic customers. Following on from triangulation, we wanted to test the “low”, “medium” and “high” values with customers, to test their acceptability of the values used, which resulted in the “expected” values, as shown below.

C3 - Delivering outcomes for customers

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a “Few hour” incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a “Few hour” incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 9-1 - Customer WTP Values

Although the NERA survey has suggested a higher weighted value of £2.57/customers / Ml/d, we have throughout used the low value, consistent with general customer research that leakage is expected to save customers money in order to justify a reduction, and to avoid double-counting with other incentives such as supply interruptions and metering which also help to reduce leakage. This value equates to £321,683 per Ml/d. Based on the Accent/PJM Economics survey of stated preference studies the range of industry values varies from £24,293/Mld to £1,134,246/Mld. The median combined residential/business value is £476,616/Mld and for residential only £390,688/Ml/d. This validates our use of £321,683/Mld as our triangulated value

When we talk to customers in detail about how we can address leakage customers favour Active Leakage Control, followed by pressure management. They generally do not favour getting to leaks more quickly. Water meters are also strongly favoured by some customers, particularly as an approach to improving efficiency in fixing leaks once the link is explained; however there are other customers who are strongly opposed to the compulsory introduction of meters because of concerns about fairness. Customers who don’t support metering are still keen to see Bristol Water taking responsibility action on leakage where it is within the company’s control.

Engagement and research with customers on their views on leakage includes:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey (A5);
- Water resource research (B7);
- Customer experience of attributes review (B4);
- Deliberative resilience research (B11);
- Innovative “slider” stated preference game (B12);
- Focus group on performance commitments (B14);

C3 - Delivering outcomes for customers

- Triangulation by attribute (B20);
- WRMP Demand Reduction Deliberative events (B23);
- Youth Board (A12);
- Business Plan options deliberative events (B24);
- Business Plan options focus groups with seldom-heard customers (B25);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);
- Pre-acceptability testing (B31);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

In addition, our WRMP consultation responses support our PR19 Business Plan approach to reduce leakage by 15%.

9.2.3. Regulatory requirements

This was a performance commitment at PR14; in the last reporting period we have been working with Ofwat and the rest of the industry to align the reporting definition to help customers understand comparative performance. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. Our historical information is based on our current view of leakage, once technical changes to the non-household night use (NHHNU) component have been taken into account (i.e. this data is different to the historical information reported in our Annual Performance Reports in Table 3A.

In its PR19 methodology, Ofwat offered three approaches to setting the baseline and targets for leakage, which should be set using three year averages. In addition, for comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance. However for leakage, Ofwat has specifically proposed that companies challenge their performance commitment levels against a specific set of approaches, one of which is a 15% reduction in leakage service levels over the 2020-25 period. The full list of approaches is below.

Approach	Commentary	Draft Proposal	Final Proposal
Achieve forecast upper quartile performance (in relation to leakage per property per day and leakage per kilometre of main per day) where this is not being achieved – or justify why this is not appropriate	As evidenced below, we are already performing better than the current upper quartile level of performance when measuring leakage per property per day / per km per day is similarly near the upper quartile		
Achieve at least a 15% reduction in leakage (one percentage point more than the largest reduction commitment at PR14) – or justify why this is not appropriate	We have adopted this approach	✓	✓
Achieve the largest actual percentage reduction achieved by a company since PR14 – or justify why this is not appropriate	We are committed to achieving a 12% reduction at PR14 whilst performing around the upper quartile level of		

C3 - Delivering outcomes for customers

	performance		
--	-------------	--	--

Table 9-1 - Assessment of options for setting leakage performance commitment

Our analysis for our Water Resources Plan determined that delivering a 15% reduction in leakage during AMP7 is cost-beneficial. As a result we adopted the target of achieving a 15% reduction as suggested in the PR19 methodology.

As the size of areas companies supply can vary considerably, the amount of leakage in each company's area is different. To accurately compare companies against each other, the comparative information is presented in how much leakage there is per property. The historic information demonstrates that we are performing better than the upper quartile level of performance.

Leakage (litres per property per day) – Historical Information		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	-	-	-
	Company Performance	86	84	88	87
Industry	Average	109	107	108	107
	Upper Quartile	90	86	88	88
	Frontier	75	77	80	80

Table 9-2 - Leakage - Historic Information

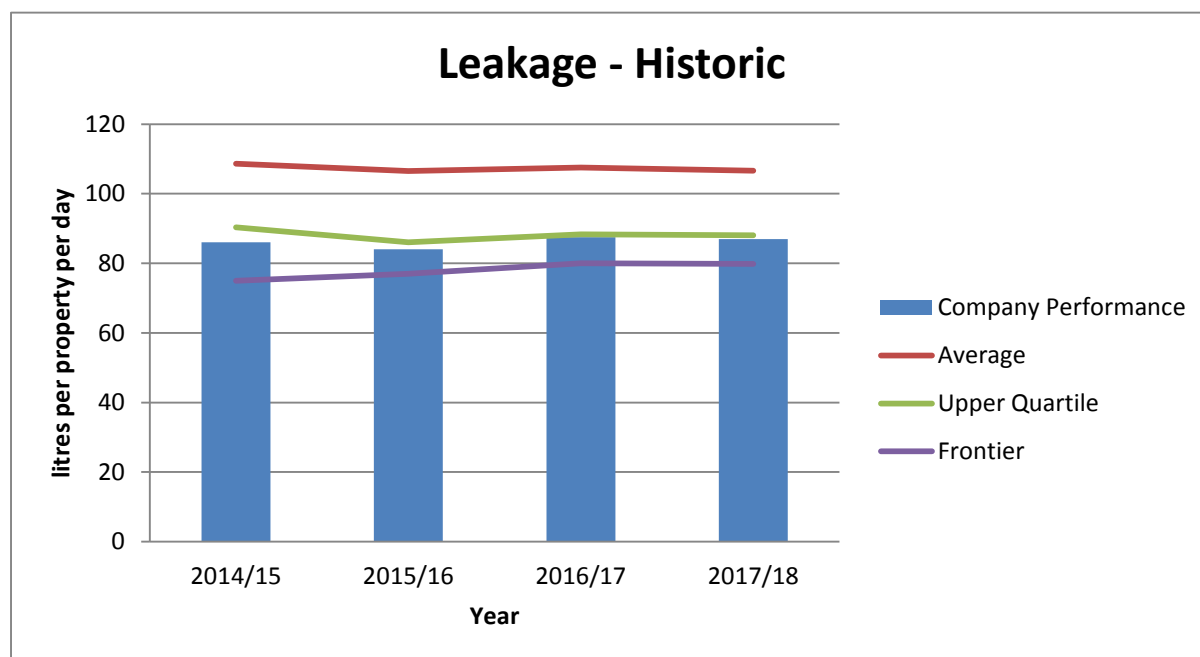


Figure 9-2- Leakage – Bristol Water Historic Performance

Leakage (m3 per km per day) – Historical Performance		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	-	-	-
	Company Performance	6.7	6.6	6.9	6.8
Industry	Average	8.4	8.3	8.4	8.3
	Upper Quartile	6	6.1	6.2	6.2

C3 - Delivering outcomes for customers

	Frontier	4.9	4.8	4.8	4.8
--	----------	-----	-----	-----	-----

Table 9-3 - Leakage - Historic Performance as m3/km/day

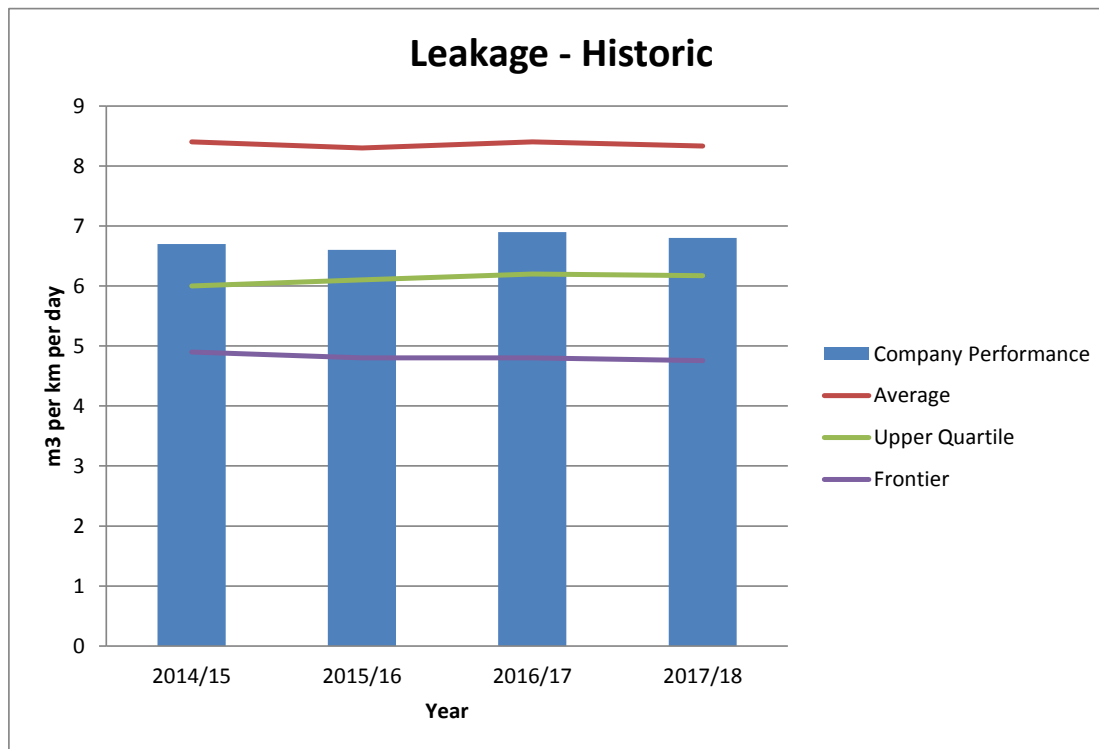


Figure 9-3 - Leakage - Historic Performance as m3 per km per day

To assist our customers’ understanding of the 15% reduction, we have throughout our consultations presented leakage information as annual reductions, rather than three-year averages. The table below explains our position on Ofwat’s approach to determining the three-year average.

Approach	Setting the average baseline	Setting the average target	Our view
1 – Ofwat’s preferred approach	Backcast data for 2017-18 and 2018-19, and forecast 2019-20, to calculate a three-year average baseline, against which changes can be measured.	We use three-year averages from Year 1 of the price control period onwards. In July 2021, we report 2020-21 data and back-cast data for 2018-19 and 2019-20, to calculate the three-year average to make it as close to fully compliant with the reporting guidance as possible. The same process applies in July 2022. In July 2023, no back-casting is needed.	As the required performance numbers will not be known until after we have published our Business Plan, we propose to follow option 2 as an illustration. We will however move to option 1 when the actuals are known.

C3 - Delivering outcomes for customers

Approach	Setting the average baseline	Setting the average target	Our view
2	Use the best available data for 2017-18 and 2018-19, and forecast for 2019-20 (even if it is not fully compliant with the new reporting guidance) to calculate a three-year average baseline, against which changes can be measured.	Companies use three-year averages from Year 1 of the price control period onwards. Ofwat accept that the data used in the three-year averages is not fully compliant with the new reporting guidance for a number of companies until July 2023.	We have followed this approach to demonstrate how three-year averages would impact our targets, but we will re-adjust in line with option 1 when the actuals are known.
3	Companies use forecast 2019-20 data (i.e. one year only) as the baseline, against which changes will be measured.	We do not use three-year averages for leakage because fully compliant data will not be available for 2017-18 to 2019-20, for all companies. We use annual performance commitments instead.	We have only followed this approach when consulting with our customers, in order to demonstrate leakage reduction in simple terms. We will not follow this approach for regulatory reporting.

For simplicity, App1 presents leakage performance as an annual reduction (i.e. aligned to option 3 above). In addition, the EA were concerned that three-year averages would hide the 15% leakage reduction and would result in inconsistency with Water Resources Management Plans. Therefore we prefer to present targets based on our current level of leakage as annual targets, transparently calculate the three-year average consistent with our WRMP measurement of leakage, and then reset targets once the currently shadow new industry leakage estimates can be reapplied to our three-year average targets.

9.2.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because it is driven by the activity of maintaining the network.

9.2.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Leakage	MI/d	43.0	41.0	36.5	36.0	35.0
Forecast increase to the average bill from additional investment £			1	4	5	N/A

Table 9-4 – Leakage – Draft Business Plan Proposals

C3 - Delivering outcomes for customers

The baseline was based on our PR14 current measurement of leakage target (after technical changes to non-household night use assumptions, which are not included in our PR14 ODI calculation).

9.2.6. Draft Business Plan Consultation feedback

When we talked to customers about leakage as part of our consultation some said that leakage was a priority but it should be improved without an increase in the bill, arguing that if less water is used then bills should go down. However, the majority of customers mentioning leakage see it as a key area for investment and are willing to pay to address it. 'Social Renters' are most likely to choose the slower plan whereas 'Safely Affluent' customers tend to favour the faster plan.

We know from our other customer engagement and research that there is strong support for leakage reduction. It's noticeable that 39% of customers did choose the suggested plan, despite it being the biggest bill impact of any of the suggest plan performance commitments (there was no other bill impact of over £3 that received more than 30% support). As such, it's likely that the split of opinion is over "who pays" and that customers would like us to deliver improvements at a lower cost to them.

We consider that those customers who preferred the slower plans demonstrated bill sensitivity, but not necessarily a lack of support for service improvements as a whole. Customers see leakage as a demotivating factor for water efficiency, and do not see why they should use less water, and pay more on their bill to enable that. Messaging around these areas is critical as they are seen as interconnected and underpinned by the idea of waste. Overall customers supported the suggested plan as it offered the best value for money, with the faster plan potentially requiring further innovation that could see leakage being addressed with new targets once a 15% reduction (27% since 2015) had been delivered, as long as the overall bill was reducing in real terms.

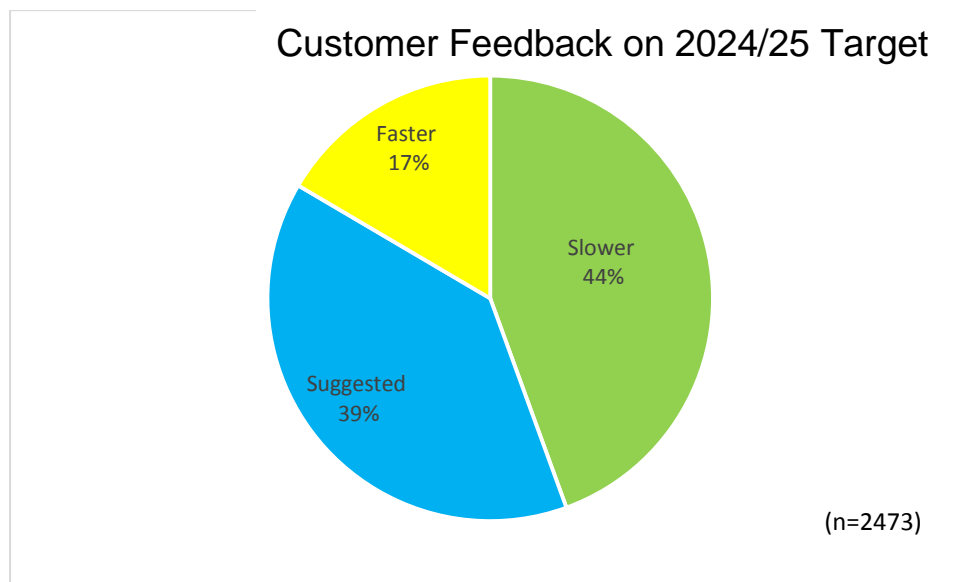


Figure 9-4 - Customer preferences for draft Business Plan proposals on leakage

Final plan acceptability testing (which included comparative information on bills and performance) identified 83% support for the proposals for this service area, with only

2% of people disagreeing. This is the second highest area of support, supporting the interpretation of the research above.

9.2.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Leakage - Summary							
Stretch	2019/20 Annual Baseline	2024/25 Annual Target	ODI	ODI Deadband	ODI Caps/ Collars	Outperform ance Payment (£m) – total 2020-25	Underperf ormance Penalty (£m) – total 2020-25
Ofwat instruction (15% reduction)	43	36.5	Out and Under		<input checked="" type="checkbox"/>	9.377	-7.890
	2019/20 Average Baseline	2024/25 Average Target				Payment (£m) within P90 – total 2020-25	Penalty (£m) within P10 – total 2020-25
	44.5	38				2.139	-1.977

Table 9-5 – Leakage - Summary

The overall ODI design and performance commitment targets are presented in the charts below.

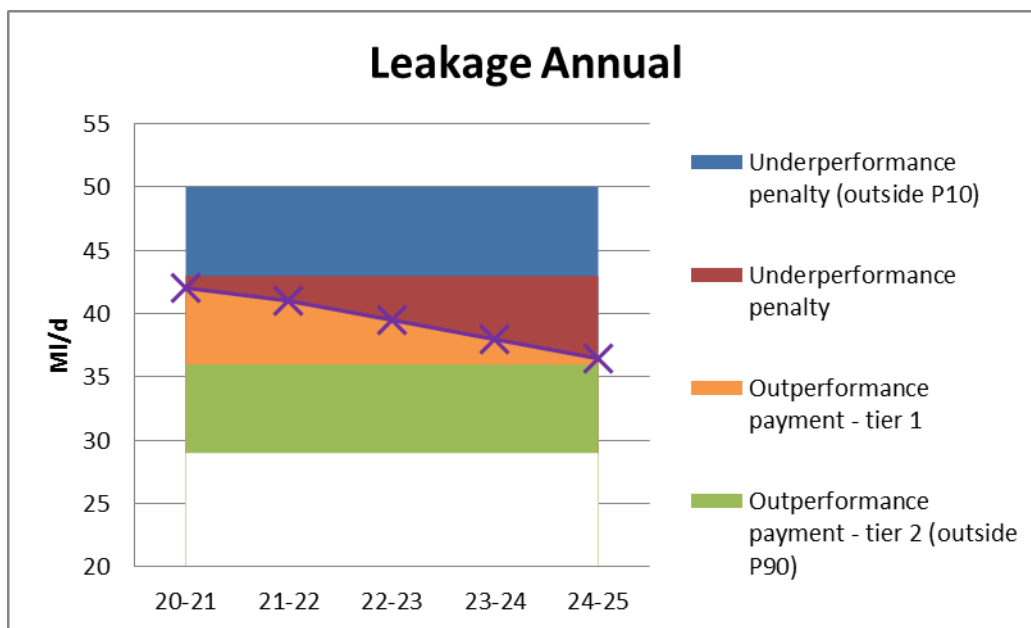


Figure 9-5 - Leakage ODI Design – Annual Targets

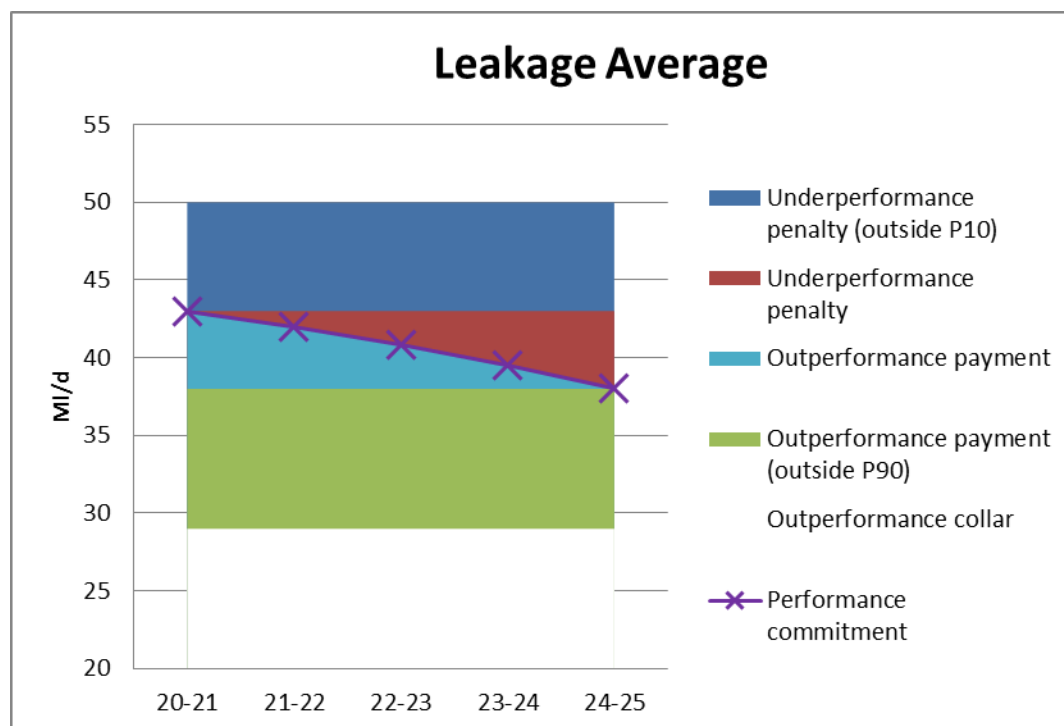


Figure 9-6 - Leakage ODI Design - Average Targets

Leakage reduction is an important control measure to improve water availability in our Water Resources Management Plan, and it is strongly supported by our customers, as well as being aligned to the strategic objectives of the government and other regulators. Bristol Water is already a strong performer within the industry on leakage, performing better than the upper quartile in the current price review period and already targeting a 12% reduction from 2015 to 2020. The stretch for this performance commitment is to achieve a 15% reduction in leakage levels. This target is based on our optimisation of customer WTP and cost of delivery, and is consistent with Ofwat’s proposal in the PR19 methodology that companies target a 15% reduction in leakage.

As we will be adopting Ofwat’s preferred approach (using three-year averages) deadbands have not been proposed; this ensures underperformance penalties will be due if we do not improve on our forecast level of leakage for 2019/20.

Caps and collars have been included for this performance commitment. As this performance commitment has an in-period ODI we have taken into consideration the importance of bill variations being limited to the extent that they reflect customers’ preferences. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

The first standard outperformance payment would only be due if we achieved a level of leakage reduction as suggested for the ‘faster’ improvement target in the draft Business Plan. The second standard outperformance payment below the ‘faster’ plan improvement target would only be due if we achieved a level of leakage reduction below current expected WRMP required levels towards the Unavoidable Annual Real Losses (UARL) level of performance (the lowest level of leakage theoretically possible with current standard supply systems and technology).

C3 - Delivering outcomes for customers

The UARL for 2017-18 is 10,579,300 m³/Year, or the equivalent of 29.0 MI/day. The UK specific UARL is calculated for a given system taking into account what is technically achievable. It is derived using the following equation: UARL (m³/year) (6.57 x Lm + 0.292 x NC + 9.13 x Lsp) x Pc. Where Lm = underground mains length (km), Nc = Number of Service Connections, Lsp = total length (km) of underground supply pipes and Pc = current average operating pressure (metres).

UARL calculation	2017/18	Source
Properties	533708	
Average Length of SP m	13.3	
Lm (mains length) km	6828.07	APR table
Nc (number of service connections)	476885	APR table
Lsp (supply pipe length) km	7099	From GIS
Pc (current average operating pressure) m	42.5	Derived from AZNP/HDF calc.
UARL (m ³ /year)	10579300	
UARL (MI/day)	29.0	

Table 9-6 - Calculation of UARL

Our proposed AMP7 targets are provided below for information. This is presented using Ofwat's 'option 2' approach. We will use the data in line with option 1 when it is available. We propose that the table below be included in our final determination.

Committed Performance Levels (Three-Year Average)							
Leakage	Unit	2017/18-2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	MI/d	44.5	43	42	40.8	39.5	38
Underperformance Penalty Deadband	MI/d		43	42	40.8	39.5	38
Standard Underperformance penalty collar	MI/d		43	43	43	43	43
Standard Underperformance penalty collar	MI/d		50	50	50	50	50
Outperformance Payment Deadband	MI/d		43	42	40.8	39.5	38
Standard Outperformance Payment	MI/d		36	36	36	36	36
Standard Outperformance Payment Cap	MI/d		29	29	29	29	29

Table 9-7 – Leakage - Committed Performance Levels (Three-Year Average)

The P10 level is set at 43 MI/d based on current delivery and the P90 on a 3 year average basis set at 38MI/d. Based on the annual results this was set at a lower figure of 36MI/d, reflecting the benefits of averaging to risk and opportunity management.

This information is for information only; it represents our targets if we had adopted 'option 3'.

C3 - Delivering outcomes for customers

Committed Performance Levels (Annual)							
Leakage	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	MI/d	43	42	41	39.5	38	36.5
Underperformance Penalty Deadband	MI/d		42	41	39.5	38	36.5
Standard Underperformance penalty	MI/d		43	43	43	43	43
Standard Underperformance penalty collar	MI/d		50	50	50	50	50
Outperformance Payment Deadband	MI/d		42	41	39.5	38	36.5
Standard Outperformance Payment	MI/d		36	36	36	36	36
Standard Outperformance Payment Cap	MI/d		29	29	29	29	29

Table 9-8 – Leakage - Committed Performance Levels (Annual)

9.2.8. Costs, Benefits and Incentive Rates

The baseline formulae for this performance commitment has been determined using Ofwat's standard formula:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The incremental benefit is based on our customer valuation for leakage reduction. The source of this value is our stated preference surveys and deliberative events. These values have been compared to other available values from other companies and our slider results, as part of the triangulation process. The value is below:

1. Performance Commitment					
PC	Leakage				
Units	MI/d				
2a. Input values					
	Units	Lower	Central	Upper	
	Leakage	MI/d saved	£321,683	£321,683	£5,897,518
3. Assessment of the value prior to addressing overlaps					
		Lower	Central	Upper	
	Total £ per MI/d	£321,683	£321,683	£5,897,518	
4. Further adjustment for overlaps					
	None required				

Figure 9-7 - Calculation of benefits for leakage

As the triangulated leakage WTP value was high (of £1.337m / MI/d) we have adopted a lower/ central value, which we feel is more appropriate, as the higher value resulted in excessive outperformance payments and underperformance penalties. The value used does not double-count with other incentives.

C3 - Delivering outcomes for customers

The costs have been taken from the company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this outcome include:

- Sliplining schemes £3.1m
- All maintenance of distribution mains and trunk mains
- Increased network monitoring £2.3m
- Active leakage control - target reduction opex £5.4m capex, £0.7m p.a.

Full details of the investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per MI/d leakage	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual (average d) £m	Total AMP7 £m	RORE %
Outperformance payment total					1.875	9.377	0.9%
Outperformance payment (outside P90 range)	0.322	-	0.161	Central WTP	1.448	7.238	0.7%
Outperformance payment	0.322	-	0.161	Central WTP	0.428	2.139	0.2%
Underperformance penalty total					-1.578	-7.890	-0.7%
Underperformance penalty	0.322	0.305	0.169	Central WTP	-0.395	-1.977	-0.2%
Underperformance penalty (outside P10 range)	0.322	0.305	0.169	Central WTP	-1.183	-5.914	-0.5%

Table 9-9 – Leakage – Calculation of Incentive Rates

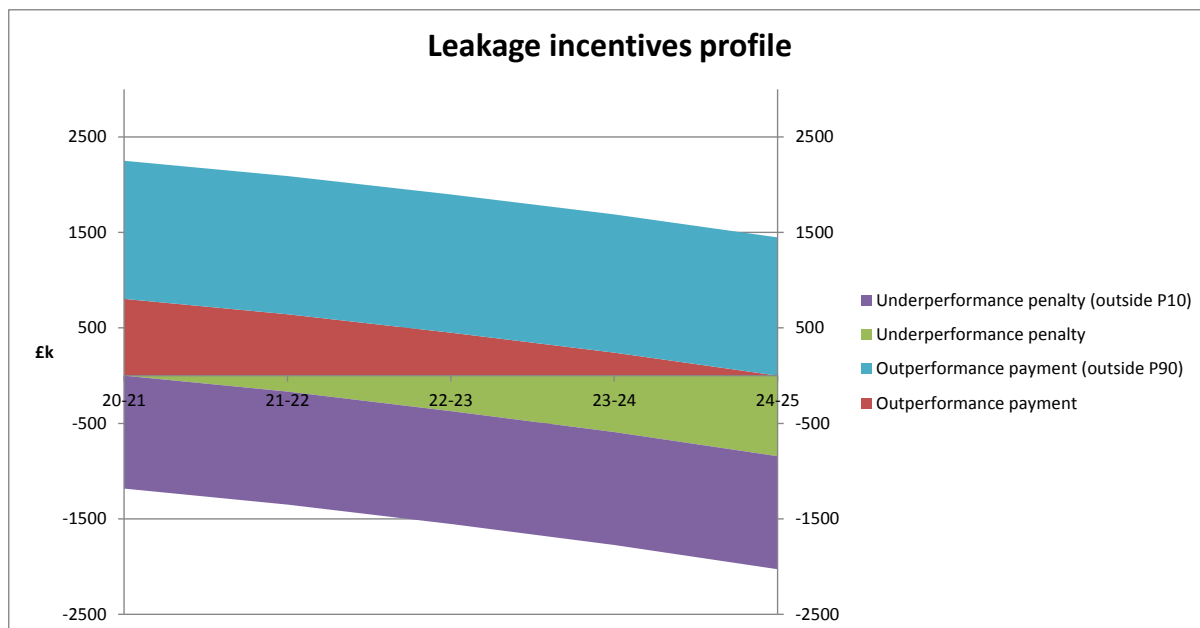


Figure 9-8 - Leakage incentives profile

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

9.2.9. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment. The future ambition will be reset to reflect innovations we expect to emerge in leakage-reduction. At the moment the target is consistent with the needs of our Water Resources Management Plans, and no other investment in water sources are required, even after considering trading opportunities. This may change over time.

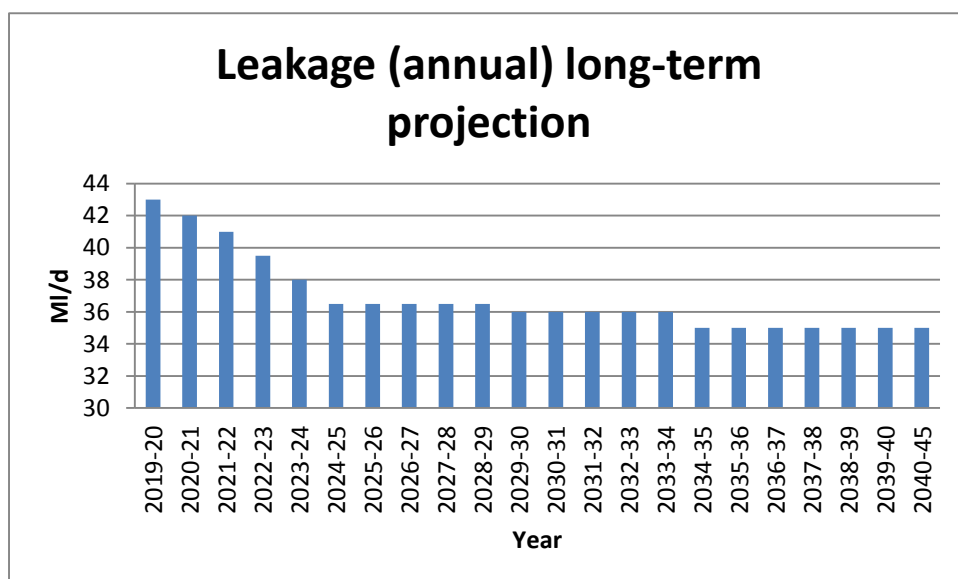


Figure 9-9 - Leakage - long-term projection

9.3. Per Capita Consumption

9.3.1. Definition



We have adopted the industry-standard definition for this metric, which can be found on the Ofwat [website](#). Annual average per capita consumption is defined as the sum of measured household consumption and unmeasured household consumption divided by the total household population. This is to be reported at the whole company level for this PC.

9.3.2. Customer views

All our research tells us that customers want us to lead on reducing water use – it was the top performance commitment when we asked our Customer Forum to review our draft Business Plan. Customers and stakeholders want us to educate customers and children about the importance of water as a resource. Our stakeholders also tell us that they want us to work with others to deliver resource efficiency and take a leading role in promoting the value of water. When we asked our customers and future customers to help us design water efficiency projects in March 2018 they gave us dozens of ideas about new water saving devices, advertising campaigns and behaviour change tools. We learnt that knowing more about our customers will help with this – as our future customers focused on showering behaviours as being more pertinent to their age group, with older customers identifying gardens and car-washing as important focuses for water saving.

We have a range of valuation data that tells us how much customers value efforts either to educate and inform people about water efficiency, or to provide water efficiency devices. Some of our research tells us that customers value water efficiency for its environmental benefits as well as for its own sake. When we combine and triangulate this different valuation data we get a wide range, from a low estimate of £2 per customer in one Willingness to Pay survey to a high estimate of £9.30 in the context of a workshop on water resource management. In the context of proposed investment a few customers ask us why they should pay more to use less water, but the majority see it as an investment for the long term. The triangulated value based on our NERA draft Business Plan acceptability research is an annual willingness to pay of £6.62 per customer for water efficiency support to reduce consumption, as shown below.

C3 - Delivering outcomes for customers

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a “Few hour” incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a “Few hour” incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Figure 9-10 - Customer WTP Values

When we ask customers how we should ensure an adequate supply of water in the future, they prefer us to focus on reducing how much water is used, rather than creating new supply. Customers want us to be efficient in how we operate and to take an active role in helping others reduce their water usage. When we asked customers in a workshop setting to consider the pros and cons of different tools for reducing demand they were more likely to choose options like pressure management which delivered more reliable reductions than behaviour change measures, but they felt a balance of measures was needed overall.

Engagement and research with customers on their views on per capita consumption includes:

- Online Customer Panel (A4);
- Annual customer survey (A5);
- Water resource research (B7);
- Macroeconomic analysis of drought impacts (B9);
- Deliberative resilience research (B11);
- Innovative “slider” stated preference game (B12);
- Focus groups on performance commitments (B14);
- Triangulation by attribute (B20);
- WRMP Demand Reduction Deliberative events (B23);
- Youth Board (A12);
- Business Plan options deliberative events (B24);
- Business Plan options focus groups with seldom-heard customers (B25);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);
- Pre-acceptability testing (B31);

C3 - Delivering outcomes for customers

- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

9.3.3. Regulatory requirements

This was a performance commitment at PR14; in the last reporting period we have been working with Ofwat and the rest of the industry to align the reporting definition to help customers understand comparative performance. It has been included within our Outcomes Framework because it is a common metric that Ofwat has mandated for inclusion. Our historical information is based on our current view of PCC, once technical changes to our leakage reporting have been taken into account (i.e. this data is different to the historical information reported in our Annual Performance Reports in table 3A).

In the PR19 methodology, Ofwat offered three approaches to setting the baseline and targets for PCC, which should be set using three year averages. In addition, for comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance. To assist our customers' understanding of our performance, we have throughout our consultations presented PCC information as annual reductions, rather than three-year averages.

Per Capita Consumption – Historical Information		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	145.4	144.5	143.6
	Company Performance	141.5	141.1	143.5	146.3
Industry	Average	139.5	140.1	141.6	143.0
	Upper Quartile	133.0	132.0	135.0	136.2
	Frontier	126.0	129.8	129.1	129.0

Table 9-10 - Per Capita Consumption – Historical Information

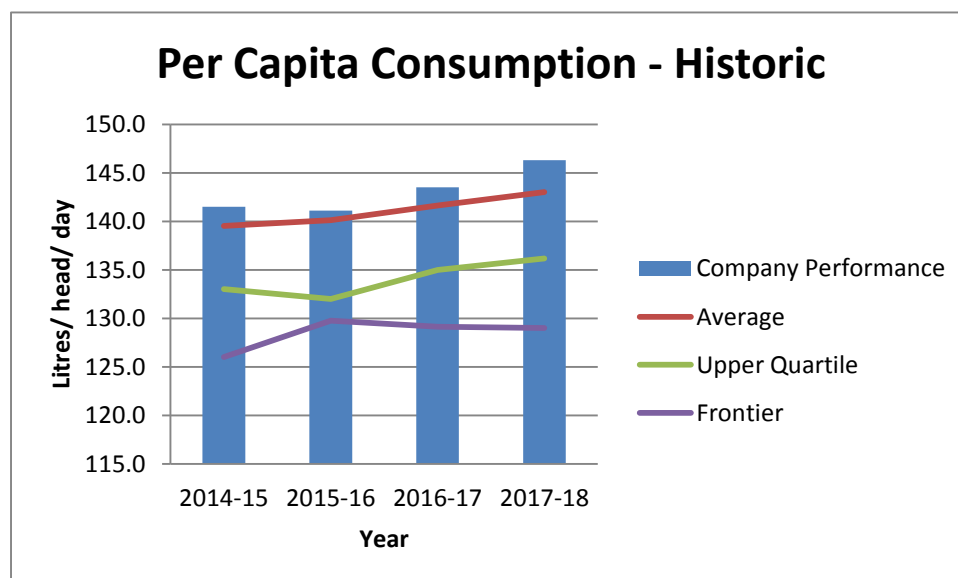
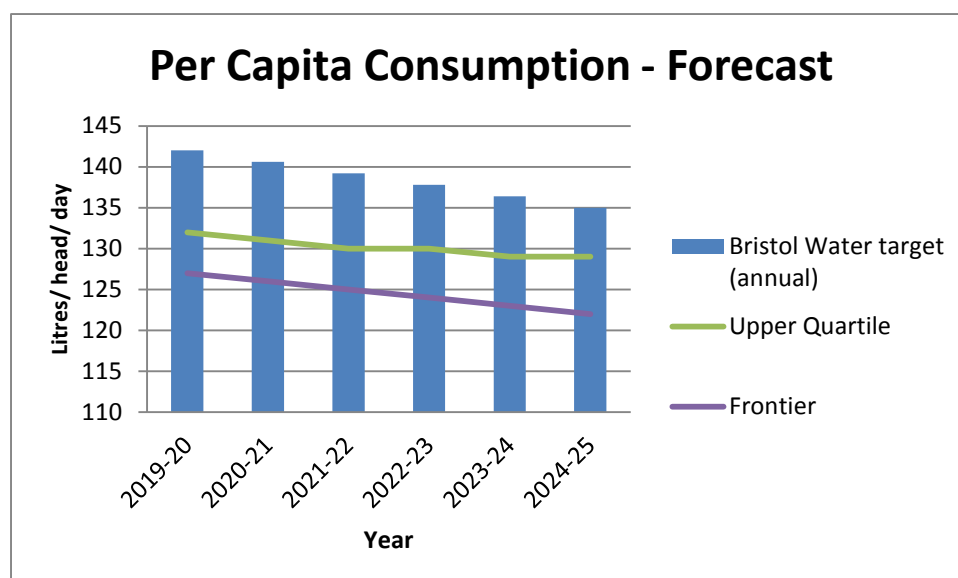


Figure 9-11 - Per Capita Consumption - Historic Performance data



To assist our customers' understanding of our performance, we have throughout our consultations presented PC information as annual reductions, rather than three-year averages. The table below explains our position on Ofwat's approach to determining the three-year average.

Approach	Setting the average baseline	Setting the average target	Our view
1 – Ofwat's preferred approach	Backcast data for 2017-18 and 2018-19, and forecast 2019-20, to calculate a three-year average baseline, against which changes can be measured.	We use three-year averages from Year 1 of the price control period onwards. In July 2021, we report 2020-21 data and back-cast data for 2018-19 and 2019-20, to calculate the three-year average to make it as close to fully compliant with the reporting guidance as possible. The same process applies in July 2022. In July 2023, no back-casting is needed.	As the required performance numbers will not be known until after we have published our Business Plan, we propose to follow option 2 as an illustration. We will however move to option 1 when the actuals are known.
2	Use the best available data for 2017-18 and 2018-19, and forecast for 2019-20 (even if it is not fully compliant with the new reporting guidance) to calculate a three-year average baseline, against which changes can be measured.	Companies use three-year averages from Year 1 of the price control period onwards. Ofwat accept that the data used in the three-year averages is not fully compliant with the new reporting guidance for a number of companies until July 2023.	We have followed this approach to demonstrate how three-year averages would impact our targets, but we will re-adjust in line with option 1 when the actuals are known.
3	Companies use forecast 2019-20 data (i.e. one year only) as the baseline, against which changes will be measured.	We do not use three-year averages for leakage because fully compliant data will not be available for 2017-18 to 2019-20, for all companies. We use annual performance commitments instead.	We have only followed this approach when consulting with our customers, in order to demonstrate leakage reduction in simple terms. We will not follow this approach for regulatory reporting.

C3 - Delivering outcomes for customers

For simplicity, App1 presents PCC performance as an annual reduction (i.e. aligned to option 3 above). However, we present the incentive calculations and ODI metrics on app1 using the 3 year average of the annual performance commitments.

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	135	This target considers the economic level of service, customer preferences, historical data and the impact on the wider environment.	✓	✓
Comparative information	129	This target assumes Bristol Water could achieve the industry forecast upper quartile level of performance	✓	
Historical information	143.1	Our average historical performance since 2014/15 is		
Historical information	141.1	This is our best historical performance since 2014/15		
Maximum level attainable	122	This target assumes Bristol Water could achieve the industry forecast frontier level of performance		
Expert knowledge	138		✓	

The justification for not referencing the industry Upper Quartile for this comparative metric is that we cannot use compulsory metering (because we are not in an area designated as being water-stressed), so companies' relative levels of meter penetration and therefore consumption cannot be directly compared as performance measures.

9.3.4. Allocation to price control

The performance commitment has been partially (50%) allocated to the Residential Retail price control because it covers customer-related services that we provide through water efficiency information. It is also partially (50%) allocated to Water Network Plus due to the impact of metering activity on consumption.

9.3.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

C3 - Delivering outcomes for customers

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Per Capita Consumption	Litres/head/day (l/h/d)	142	138	135	129	110
Forecast increase to the average bill from additional investment			£1	£2	£3	N/A

Table 9-11 - Per Capita Consumption – Draft Business Plan Proposals

9.3.6. Draft Business Plan Consultation feedback

Most customers support the slower plan for reducing water use. However, when we talked to customers about water use as part of our consultation most of those who commented felt that reducing consumption is an important goal and called for educational measures to help customers address it. Nonetheless, there are a few customers who explicitly disagree and say that water use is a personal choice and not something they pay for.

We know from other conversations that customers do think reducing water usage is important. However, as they expect it to reduce bills, this consultation did not translate it into an area where they supported a bill increase (when splitting a plan package into its components). Future customers gave strong support in this area.

Future customers gave strong support in this area.

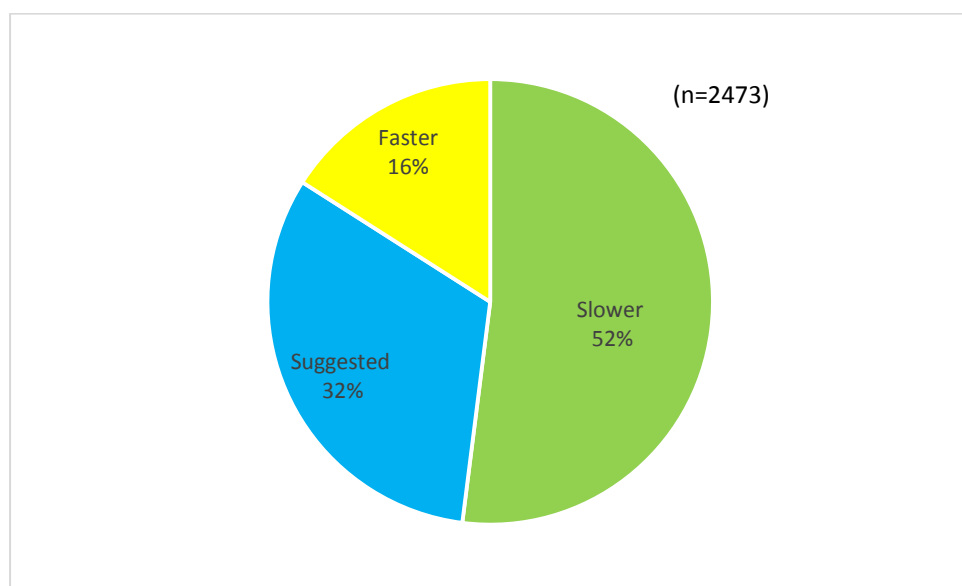


Figure 9-12 - Customer preferences for draft Business Plan proposals on PCC

We initially considered an ODI plan that aligns to the feedback from the customer consultation. As with leakage, for per capital consumption and water efficiency, we concluded that customer support for ambitious leakage and water efficiency targets would depend on the acceptability of overall bills. We concluded we would need to balance short and long-term ambitions in a way that maintained customer support, but if we could deliver

C3 - Delivering outcomes for customers

the improvements at a time bills were seen to be reducing as well, they would gain strong support.

Per Capita Consumption – Alternative Targets (Annual)							
Per Capita Consumption	2019/20 (Baseline)	Stretch	2020/21	2021/22	2022/23	2023/24	2024/25
PC	142	Cost-benefit analysis	140.6	139.2	137.8	136.4	135
Underperformance Penalty Deadband			138	138	138	138	138
Standard Underperformance penalty collar			145	145	145	145	145
Outperformance Payment Deadband			129	129	129	128.2	126.9
Standard Outperformance Payment Cap			116	116	116	116	116

Table 9-12 - Per Capita Consumption – Alternative Targets (Annual)

In moving from annual targets to a three-year average, we removed the underperformance deadband which we had set at a three-year variation. We also increased the level of underperformance collar in light of more recent evidence of increasing consumption which we needed to incentivise how we would address this.

Final plan acceptability testing (which included comparative information on bills and performance) identified 71% support for the proposals for this service area, with only 6% of people disagreeing.

9.3.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Per Capita Consumption - Summary							
Stretch	2019/20 Annual Baseline	2024/25 Annual Target	ODI	ODI Deadband	ODI Caps/ Collars	Outperformance Payment (£m) – total 2020-25	Underperformance Penalty (£m) total 2020-25
Cost-benefit analysis	142	135	Out and Under		<input checked="" type="checkbox"/>	0.862	-1.633
	2019/20 3 year average Baseline	2024/25 3 year average Target				Outperformance Payment (£m) within P90 – total 2020-25	Underperformance Penalty (£m) within P10 total 2020-25
	143.7	136.4				0.029	-1.229

Table 9-13 - Per Capita Consumption – Summary

The level of performance equivalent to P90 is set at 128 l/p/d. Reductions in consumption below this level would be exceptional given the relatively high PCC starting point in the Bristol Water area, in part because of the historic level of metering. The P10 level is set at

C3 - Delivering outcomes for customers

145 l/p/d, which is below current levels but recognises that as metering increases, higher consumption will become less likely. The overall ODI design and performance commitment targets are presented in the chart below.

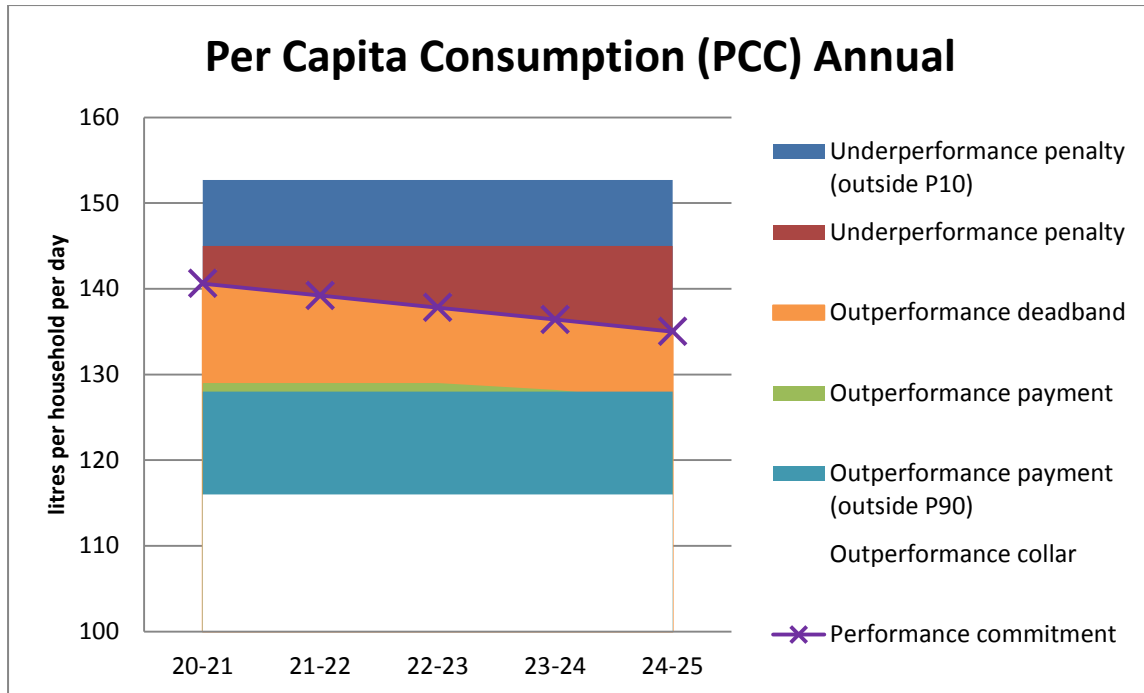


Figure 9-13 - PCC ODI Design - Annual

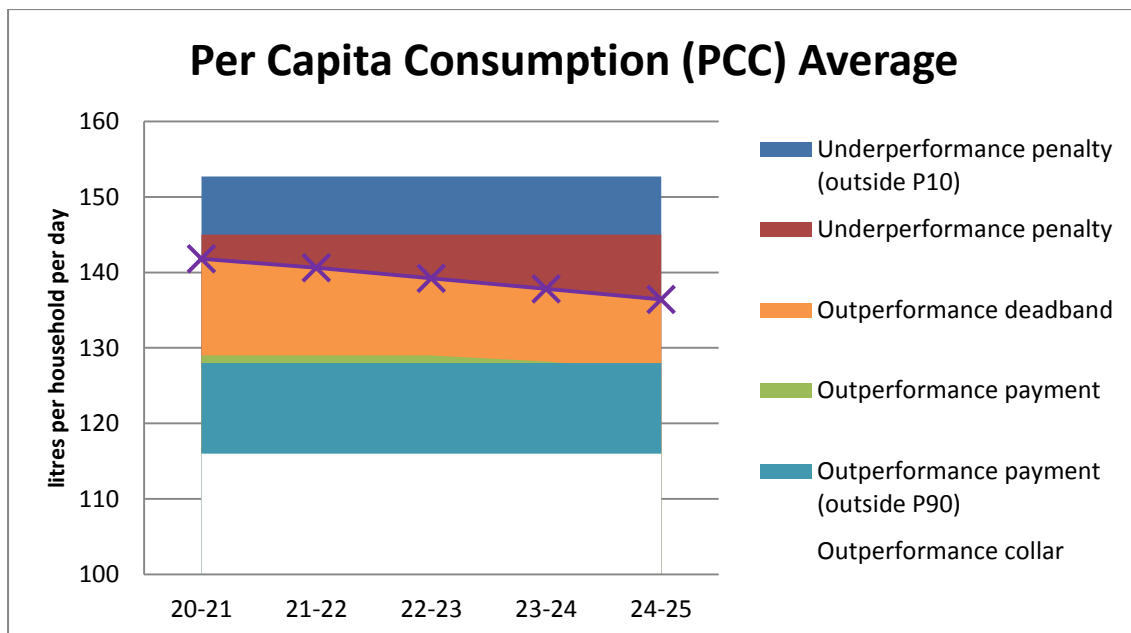


Figure 9-14 - PCC ODI Design - Average

There are no penalty deadbands included for this performance commitment, following conversion to a three-year average this reduces the need for a 3% variation in demand in normal weather circumstances.

C3 - Delivering outcomes for customers

Caps and collars have been included for this performance commitment. A cap is justified on the grounds that as this performance commitment has an in-period ODI we have taken into consideration the importance of bill smoothing to reflect customers' preferences. When combining all data sources from the draft Business Plan consultation we found that there was least support for the faster plan, and broadly a 50/50 split between preferences for the slower and suggested plan. We took from this that our customers did not want bills to be increased by any more than the faster plan, which the proposed cap ensures. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

As we will be adopting Ofwat's preferred approach (using three averages) no underperformance penalty deadbands are currently proposed; this ensures that a penalty is automatically due if the target is not met. An outperformance deadband has been proposed in recognition that our targets are not at the forecast upper quartile level of performance. Although this arguably should not apply given the close link to customer choice on metering, we have reflected the weak customer support for PCC targets by only applying rewards for an exceptional level of consumption reduction. Although our stated long-term ambition is 110l/p/d by 2045, we have set an outperformance collar at 116l/p/d to avoid outperformance rewards potentially outweigh potential underperformance penalties. This reflects customer views on incentives in this area of performance.

Our targets are not set at the upper quartile level because this metric is heavily impacted by metering and we cannot use compulsory metering (because we are not in an area designated as being water-stressed).

Our proposed AMP7 targets are provided below for information. This is presented using Ofwat's 'option 2' approach. We will use the data in line with option 1 when it is available.

We propose the following incentives design for per capita consumption.

Committed Performance Levels (Three-Year Averages)							
Per Capita Consumption	Unit	2017/18-2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Litres/person/day	143.7	141.8	140.6	139.2	137.8	136.4
Underperformance Penalty Deadband	Litres/person/day		141.8	140.6	139.2	137.8	136.4
Standard Underperformance penalty collar	Litres/person/day		152.7	152.7	152.7	152.7	152.7
Outperformance Payment Deadband	Litres/person/day		129	129	129	128.2	126.9
Standard Outperformance Payment Cap	Litres/person/day		116	116	116	116	116

Table 9-14 - Per Capita Consumption – Committed Performance Levels (Three-Year Averages)

C3 - Delivering outcomes for customers

This information is for information only; it represents our targets if we had adopted option 3.

Committed Performance Levels (Annual)							
Per Capita Consumption	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Litres/person/day	142	140.6	139.2	137.8	136.4	135
Underperformance Penalty Deadband	Litres/person/day		140.6	139.2	137.8	136.4	135
Standard Underperformance penalty collar	Litres/person/day		152.7	152.7	152.7	152.7	152.7
Outperformance Payment Deadband	Litres/person/day		129	129	129	128.2	126.9
Standard Outperformance Payment Cap	Litres/person/day		116	116	116	116	116

Figure 9-15 - Per Capita Consumption - Annual Performance Commitment Levels

9.3.8. Costs, Benefits and Incentive Rates

The baseline formulae for this performance commitment has been determined using Ofwat's standard formula:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The incremental benefit is based on our customer valuation for metering and water efficiency. The source of these values are stated preference, deliberative event and slider surveys. These values are below:

C3 - Delivering outcomes for customers

1. Performance Commitment						
PC	Water consumption (PCC)					
Units	Litres per head per day					
2a. Input values						
		Units	Lower	Central	Upper	
Water conserved		Per property supported	£2	£7	£9	
Metering		Nr of properties [opting for] met	£4	£8	£19	
2b. Other inputs						
Water saving						
Annual water saving per metered property		Litres per day	84			
Annual water saving per property supported with water efficiency		Litres per day	60			
WRMP programme						
Annualised water saving from metering		MI/d	9.6	0.97		
Annualised water saving from water efficiency		MI/d	0.3	0.03		
Population						
Population			1,207,583			
Occupancy (per household)			2.40			
3. Assessment of the value prior to addressing overlaps						
Value per litre						
Metering		£/l/day	0.051	0.091	0.229	0.97
Water efficiency		£/l/day	0.033	0.110	0.154	0.03
Weighted average of Water efficiency and metering						
		Weighted £/l/day	0.0503	0.0920	0.2263	
		£/h/day	25,265	111,077	113,769	
4. Further adjustment for overlaps						
Adjustment to reflect meter penetration increase						
			6,316	27,769	28,442	0.25
				24,969		

Figure 9-16 - Calculation of benefit value for PCC

The values are weighted (between meter penetration and per capita consumption) in recognition that the benefits of PCC are largely as a result of the activities undertaken for meter penetration i.e. even if PCC was not a performance commitment, customers would still experience some benefits because of our commitment to meter penetration.

We calculated the incentive rates based on the weighted central WTP estimates. For water efficiency the value is £7 per property, this translated to a value of £0.11/l/day, based on an assumed 60 litres per property per day water saving. For water metering the value is £8 per property, this translated to a value of £0.09/l/day, based on an assumed 84 litres per property per day water saving.

We used the values per property supported, and did not include any water restriction benefit because of customer preferences for supply over demand side solutions, and a lack of WTP for reducing water restriction risk. The contribution for each element to the Water Resources Management Plan was then used to weight the value per litre per person per day. We then calculated a PCC WTP by limiting the weighted average to those not currently metered (65.9% in 2025 to 100% theoretical total). This produces the total WTP after adjusting for cross over with metering WTP of £28k per l/p/d reduction in PCC.

The costs have been taken from the Company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this outcome include:

- Meter optants programme £7.6m
- Selective meter programme (change of occupancy) £1.9m
- Customer communication and water efficiency investment c£0.7m

C3 - Delivering outcomes for customers

Full details of the investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per Litres/person/day	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual (averaged) £m	Total AMP7 £m	RORE %
Outperformance payment total					0.172	0.862	0.1
Outperformance payment total (outside P90)	0.028		0.014	Triangulated WTP	0.167	0.833	0.1
Outperformance payment	0.028		0.014	Triangulated WTP	0.006	0.029	0.0
Underperformance penalty total					-0.327	-1.633	-0.2
Underperformance penalty (outside P10)	0.028	0.007	0.024	Triangulated WTP	-0.081	-0.404	-0.0
Underperformance penalty	0.028	0.007	0.024	Triangulated WTP	-0.246	-1.229	-0.1

Table 9-15 - Per Capita Consumption – Calculation of Incentives Rates

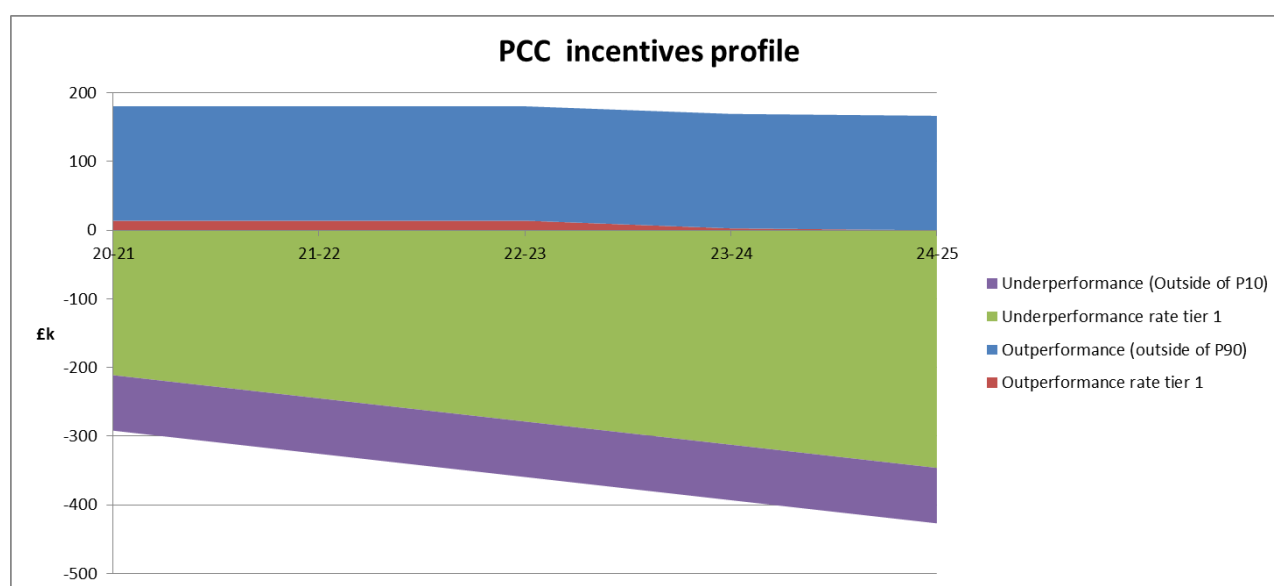


Figure 9-17 - PCC incentives profile

The performance commitment has been equally allocated to the Water Network Plus and Residential Retail price controls because the activities covered include the costs associated cost with maintaining the network and the activities we will undertake to educate and inform our customers on the benefits of water efficiency.

9.3.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

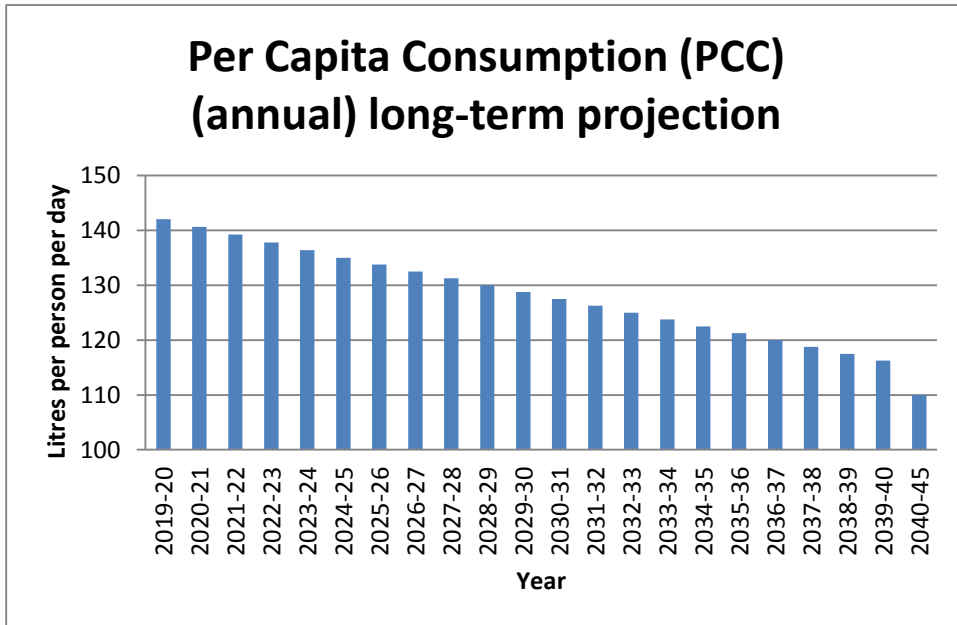


Figure 9-18 - PCC long-term projection

Our long-term ambition is to achieve reported performance of 110 litres consumption per person per day. This level of performance aligns with the long-term national expectations for the industry.

9.4. Meter penetration

9.4.1. Definition

This is measured as the proportion of total billed occupied household properties that are charged for water on a measured basis.

We measure the number of properties we serve using data from our billing system. This measure includes household properties only. Non-household, void properties and multiple properties served by a single meter are excluded. The measurement point is financial year-end (31st March). Households are defined as those properties not eligible for the business retail market. Where multiple properties are served by a single meter, this is counted as one metered supply point (and one household property) as this reflects that we only issue one bill for that property.

Metering is widely regarded as the fairest way to pay for water. We do not have the power to impose compulsory metering but we continue to see metering as an important part of our strategy to provide a resilient service, both in the short and long term. We recognise we need to continue our activities to encourage the uptake of meter installation (which helps reduce demand for water and improves household water efficiency). Metering is therefore an integral part of our draft Water Resources Management Plan (WRMP19), our plan to meet the changing demand for water between now and 2045. It is part of our approach to working closely with customers to help reduce demand for water.

This definition has been amended following feedback from Ofwat on the information we provided on 3rd May (as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission). The amended definition can be found in full in Appendix 3.

9.4.2. Customer views

Over half of all our household customers have water meters, and many of them say that having a meter has helped them to use less water and in many cases pay lower bills – although given the choice they'd often prefer a smart meter that they can read more easily. This was especially true for our future customers. 73% of our online panel said that understanding the benefits of metering is important and support wider water efficiency programmes in connection with metering. However, other customers are concerned that fitting water meters to all customers' properties is unfair to those who need to use more water, like large families. When we talked to customers about the link between metering and detecting leaks, many of them felt this made it a useful tool for reducing demand, but not everyone was convinced.

Even those customers who aren't keen on water meters want to see water use reduced, but they prefer other methods like information campaigns and a focus on leaks in our network rather than on the customer side.

C3 - Delivering outcomes for customers

Estimated “Expected” Willingness to Pay by Service Attribute

Service Attribute	WTP Units	“Low” WTP	“Med” WTP	“High” WTP	“Expected” WTP
Supply interruptions	Planned outage 3-6 hours: avoiding one affected property	£24.00	£127.70	£489.60	£164.66
	Planned outage 6-12 hours: avoiding one affected property	£32.50	£173.90	£658.80	£222.68
	Planned outage 12-24 hours: avoiding one affected property	£44.40	£232.50	£916.20	£304.70
	Unexpected interruption 3-6 hours: avoiding one affected property	£12.10	£245.20	£299.00	£184.49
	Unexpected interruption 6-12 hours: avoiding one affected property	£12.10	£385.80	£470.80	£288.24
	Unexpected interruption 12-24 hours: avoiding one affected property	£12.10	£434.40	£528.90	£323.85
Leakage	Avoid 1Ml/day in the whole supply area	£0.60	£0.60	£11.00	£2.57
Per capita consumption	Improving water efficiency (education and devices)	£2.00	£8.40	£9.30	£6.62
Drought risk	Avoiding one expected day of interruption in one property (level 4 restrictions)	£13.60	£62.20	£110.70	£56.60
Water quality - discolouration contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£0.80	£2.20	£5.00	£2.30
Water quality - taste/odour contacts	Reduce the probability of a "Few hour" incident at one property by 1 percentage point	£1.70	£3.60	£5.40	£3.36
Meter penetration	10 percentage points increase in metering	£0.40	£0.50	£1.80	£0.72
Risk of low pressure	Reduce the probability of an incident at one property by 1 percentage point	£0.80	£2.00	£3.10	£1.84
Modelled percentage of respondents choosing plan (baseline prices)		30.41%	50.66%	18.93%	

Table 9-16 - Customer WTP Values

When we triangulate our valuation studies it shows us that on average customers are not prepared to pay much more to invest in water meters. We estimated a low value of just 40p per customer for a 10% increase in metering, a central value of 50p and a high estimate of £1.80 from a workshop that explored the issues in detail. Figures are weighted averages including non-domestic customers who do not value an increase in metering. The triangulated value from the NERA acceptability research results in a central estimate of 72p per customer for a 10% increase in metering. This gives a value of £7.68 per property. Industry research suggests a range from £2 to £51 per household meter fitted, which helps validate our range and the use of the NERA triangulated acceptability study.

Engagement and research with customers on their views on metering includes:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey (A5);
- Water resource research (B17);
- Deliberative resilience research (B11);
- Innovative “slider” stated preference game (B12);
- WRMP Demand Reduction Deliberative events (B23);
- Focus groups on performance commitments (B19);
- Triangulation report (B20); and
- Youth board (A12).

In addition, Our WRMP consultation responses support our PR19 Business Plan approach to increase customer metering to 75% meter penetration.

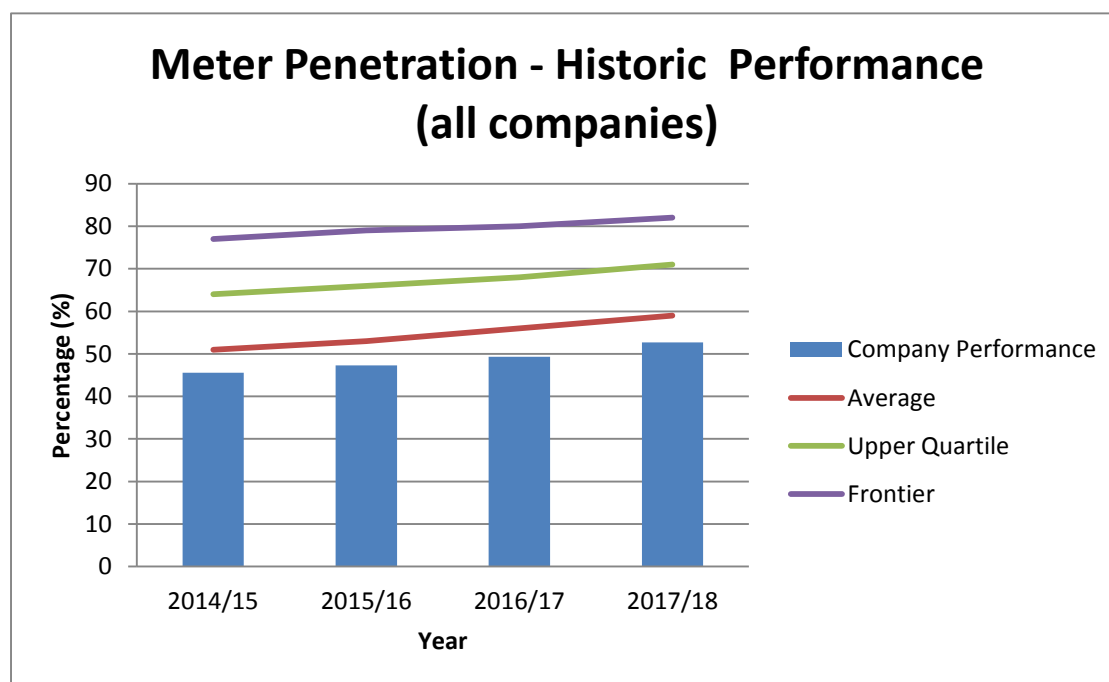
9.4.3. Regulatory requirements

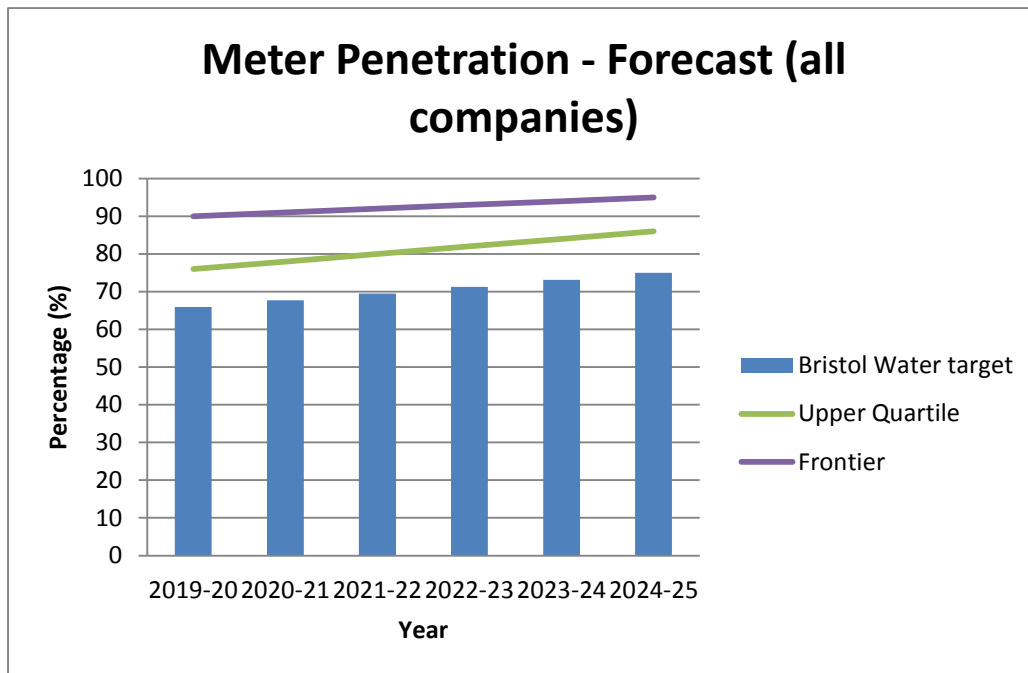
This is a continuation of our AMP6 meter penetration performance commitment. In its final methodology Ofwat stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

For comparative measures, Ofwat expects companies to consider targeting at least the forecast upper quartile level of performance. For our comparative performance setting we have compared our performance against all companies in the industry, based on PR14 business plan targets, and against companies which like ourselves are not in water-stressed areas and therefore do not have powers to compulsorily meter household properties.

Meter Penetration – Historical Information – all companies		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	50.4	54.8	58.8
	Company Performance	45.6	47.3	49.3	52.7
Industry (Business Plans)	Average	51	53	56	59
	Upper Quartile	64	66	68	71
	Frontier	77	79	80	82

Table 9-17 - Meter Penetration – Historical Information (all companies)





Meter Penetration – Historical Information (excluding companies in water stressed areas)		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	50.4	54.8	58.8
	Company Performance	45.6	47.3	49.3	52.7
Industry (Business Plans)	Average	48	50	52	54
	Upper Quartile	54	58	61	63
	Frontier	77	79	80	82

Table 9-18 - Meter Penetration – Historical Information (excluding companies in water stressed areas)

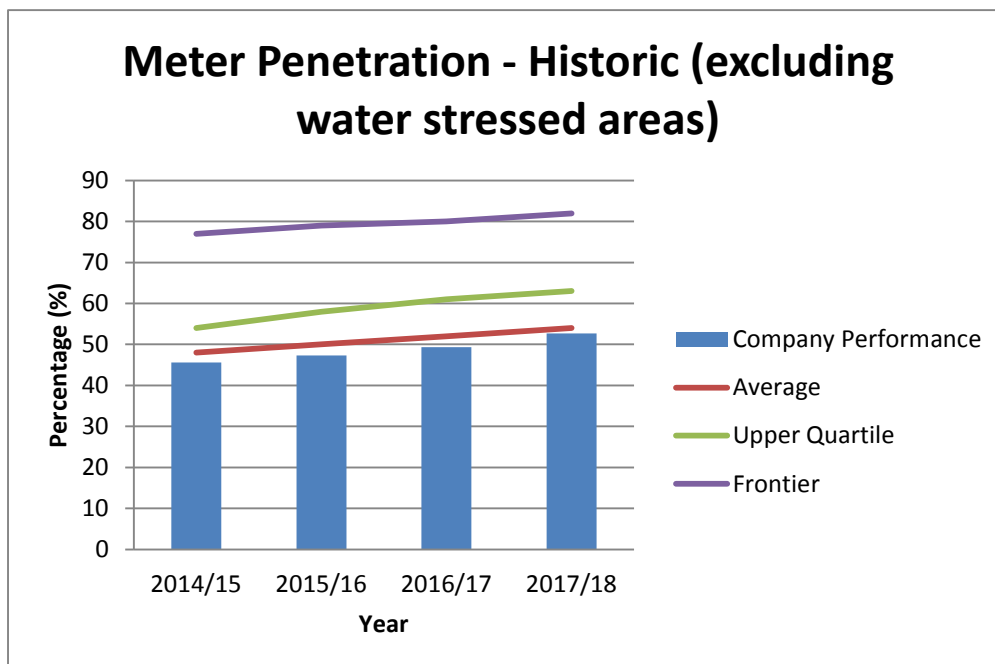


Figure 9-19 - Meter Penetration - Historic performance (excluding water stressed areas)

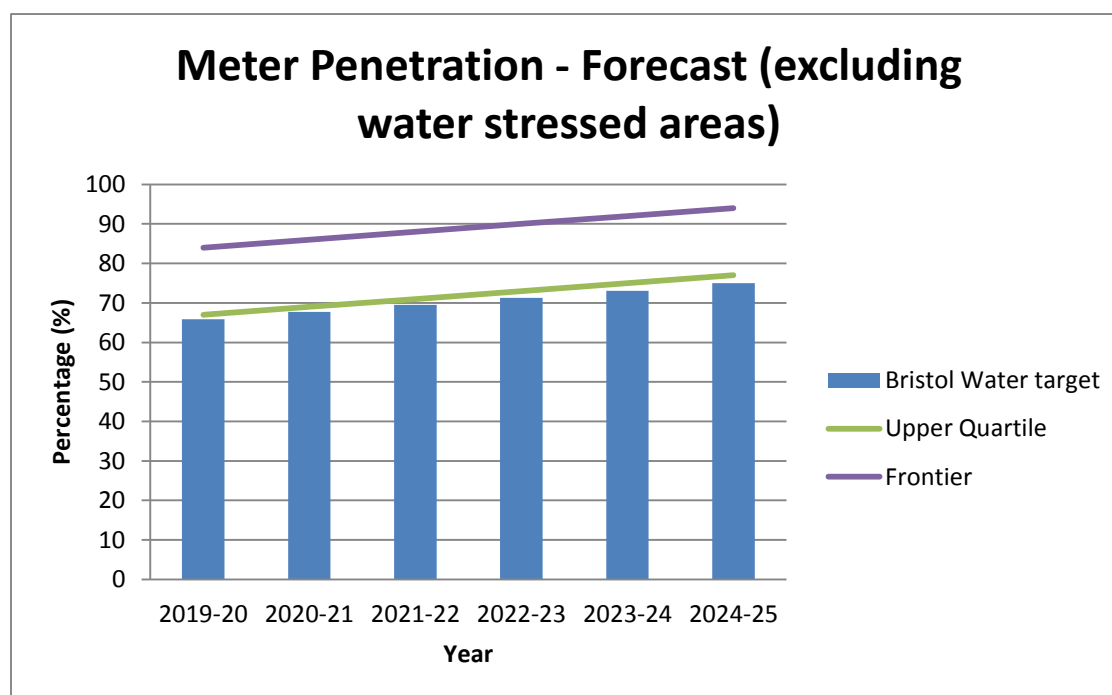


Figure 9-20 - Meter Penetration - Forecast performance (excluding water stressed areas)

The end of AMP7 target is a reflection of our optant and selective metering programmes. No other approaches have been considered for assessing the performance commitment levels (as we are not in water-stressed area).

9.4.4. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because metering is included as an activity within the Network Plus control.

9.4.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’, published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Meter penetration	%	65.9	N/A	75	N/A	90
Forecast increase to the average bill from additional investment			N/A	N/A	N/A	N/A

Table 9-19 - Meter Penetration – Draft Business Plan Proposals

9.4.6. Draft Business Plan Consultation feedback

Water meters are connected to reducing water use and can be used to help detect leaks. Most customers we spoke to about water use as part of our consultation say that reducing consumption is an important goal, although some say that water use is a personal choice and something they pay for. Some believe that having a meter has helped to reduce consumption and sometimes bills, but some feel that meters unfairly penalise groups who have to use more water, like large families.

9.4.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Meter Penetration - Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Outperformance Payment (£m) – total 2020-25	Underperformance Penalty (£m) – total 2020-25
Historical information	65.9	75	Out and Under		<input checked="" type="checkbox"/>	1.909	-1.806
						Payment (£m) within P90 – total 2020-25	Penalty (£m) within P10 – total 2020-25
						0.376	-1.247

Table 9-20 - Meter Penetration – Summary

The overall ODI design and performance commitment targets are presented in the chart below.

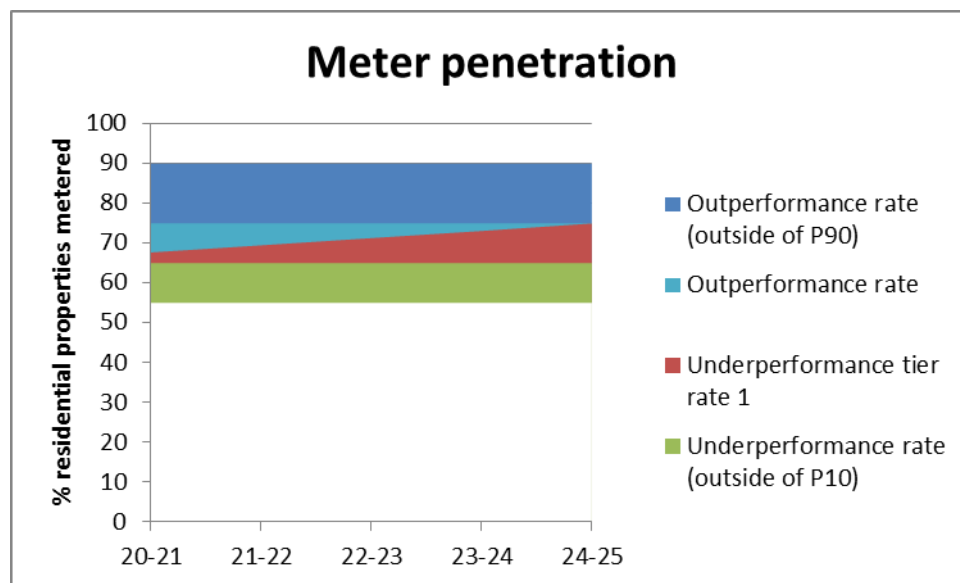


Figure 9-21 - Meter Penetration ODI design

The level of stretch in the targets has taken into consideration historical performance levels against a cost/ benefit analysis. This performance commitment is not strictly comparable as we are not in a water-stressed area and so cannot compulsorily meter household properties

C3 - Delivering outcomes for customers

The P10 level of performance has been set at 65% metering and the P90 level at 75%, which reflects the progress required from current levels (c53%) to hit the 65.9% target for 2020.

Caps and collars have been included for this performance commitment. A cap is justified on the grounds that as this performance commitment has an in-period ODI we have taken into consideration the importance of bill-smoothing to reflect customers' preferences. When combining all data sources from the draft Business Plan consultation we found that there was least support for the faster plan, and broadly a 50/50 split between preferences for the slower and suggested plan. We took from this that our customers did not want bills to be increased by any more than the faster plan, which the proposed cap ensures. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

No deadbands have been proposed for this performance commitment. Given our current performance we have set the standard underperformance penalty collar at 55% so that there is an ongoing penalty for not meeting the current performance commitment. The P10 level shows that this is full backstop protection for customers, potentially in customers' interests given the degree to which we require voluntary meter opting to hit the target. But this is appropriate as this forms a key part of Water Resources Management Plan and leakage long-term targets and ambition. As noted above, we have limited the potential PCC rewards and penalty range to avoid double counting as the business priority is best captured from a customer perspective through the meter penetration target.

Our proposed AMP7 targets are provided below for information. We propose that this table be included in our final determination.

Committed Performance Levels							
Meter Penetration	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	65.9	67.7	69.5	71.3	73.1	75
Underperformance Penalty Deadband	%		67.7	69.5	71.3	73.1	75
Standard Underperformance penalty collar	%		57.5	57.5	57.5	57.5	57.5
Outperformance Payment Deadband	%		67.7	69.5	71.3	73.1	75
Standard Outperformance Payment Cap	%		90	90	90	90	90

Table 9-21 - Meter Penetration – Committed Performance Levels

These targets align with the assumptions in our Water Resources Management Plan; we have not proposed a change from our existing policy of metering all new domestic properties; promoting voluntary take-up of water metering by unmetered household customers; and change-of-occupier metering for household properties.

9.4.8. Costs, Benefits and Incentive Rates

We have applied Ofwat’s standard formula for this performance commitment:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The benefit value is based on metering and water restrictions for hosepipe bans. The source of the hosepipe bans values are stated preferences, benefits transfer and slider. For non-domestics we have also included a macroeconomic study that focuses on the loss of economic output. The source of metering value is stated preference, deliberative event and slider surveys. These values are below:

1. Performance Commitment				
PC	Meter penetration			
Units	% of properties			
2a. Input values				
	Units	Lower	Central	Upper
Metering	Nr of properties [opting for]	£4.27	£7.68	£19.20
Water restrictions outage	MI/d saved	£7,537	£37,684	£135,663
2b. Other inputs				
	Household properties			
Number of household properties	502,633			
1% of household properties	5,026			
Litres per meter per day	84			
3. Assessment of the value prior to addressing overlaps				
Converting Water restrictions outage to value per litre				
	Lower	Central	Upper	
Water restriction benefit, value £/l	£0.01	£0.04	£0.14	
Value per meter	£4.27	£7.68	£19.20	
	Lower	Central	Upper	
Value £/yr for 1% of properties	£24,628	£54,513	£153,784	
4. Further adjustment for overlaps				
	Lower	Central	Upper	
Adjustment to reflect per capita consumption increases	0.75	£18,471	£40,885	£115,338

Figure 9-22 - Calculation of benefit value for meter penetration

The values are weighted (between meter penetration and per capita consumption) in recognition that the benefits of PCC are largely as a result of the activities undertaken for meter penetration i.e. even if PCC was not a performance commitment, customers would still experience some benefits because of our commitment to meter penetration.

The value per meter is translated into an annual value per 1% of properties, including a water saving component from the water restriction benefit value. We then calculated a metering WTP by adjusting for the value covered PCC performance commitment.

The costs have been taken from the company’s optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat’s guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this outcome include:

- Meter optants programme £7.6m
- Selective meter programme (change of occupancy) £1.9m
- New development (not included in cost as paid for by developers)

Full details of the investment cases can be found in the Section C5B Technical Annex.

C3 - Delivering outcomes for customers

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per % household properties metered	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual (averaged) £m	Total AMP7 £m	RORE %
Outperformance payment total					0.382	1.909	0.1
Outperformance payment (outside of P90)	0.041	-	0.0204	Triangulated WTP for metering	0.307	1.533	0.1
Outperformance payment	0.041	-	0.0204	Triangulated WTP for metering	0.075	0.376	0.0
Underperformance penalty total					-0.361	-1.806	-0.2
Underperformance penalty	0.041	0.029	-0.0261	Triangulated WTP for metering	-0.249	-1.247	-0.1
Underperformance penalty (outside of P10)	0.041	0.029	-0.0261	Triangulated WTP for metering	-0.112	-0.559	-0.1

Table 9-22 - Meter Penetration – Calculation of Incentives Rates

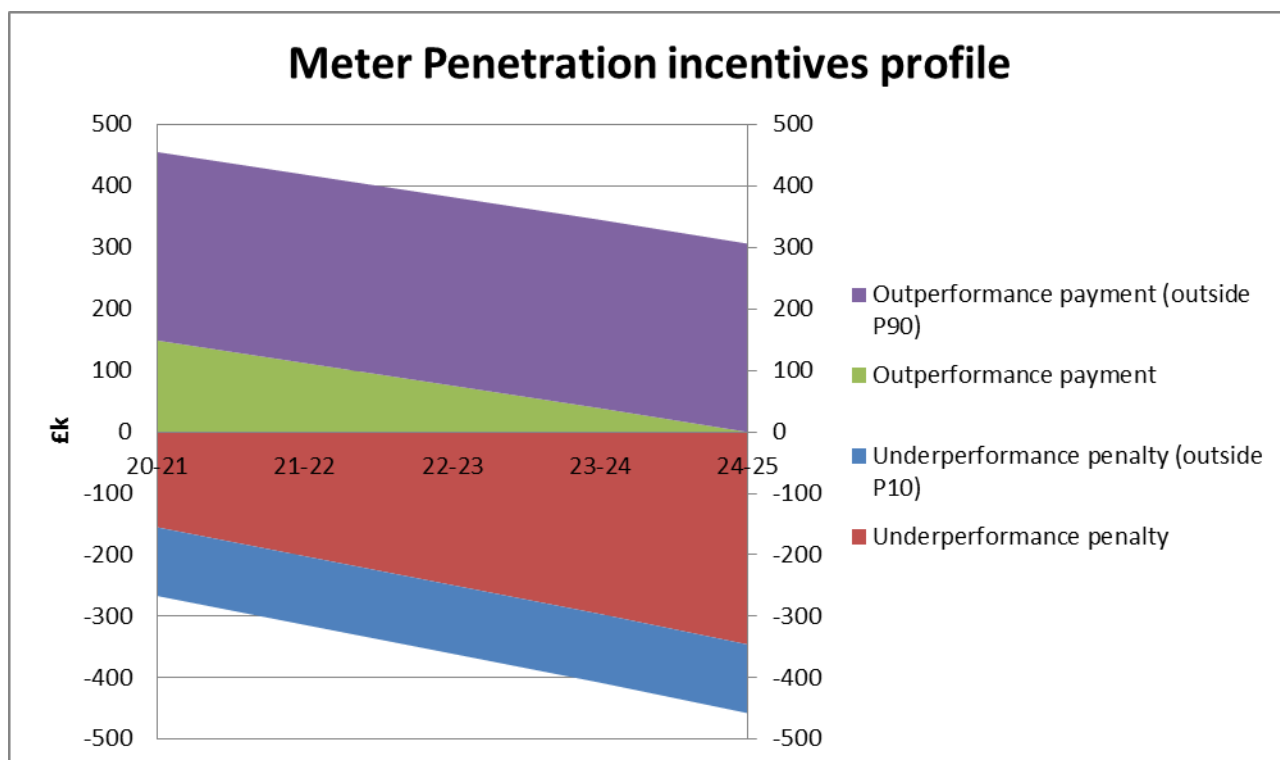


Figure 9-23 - Meter Penetration incentives profile

Within 80% probability, the rewards and penalties are balanced at +£0.765m to -£0.629m

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with maintaining the network.

9.4.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

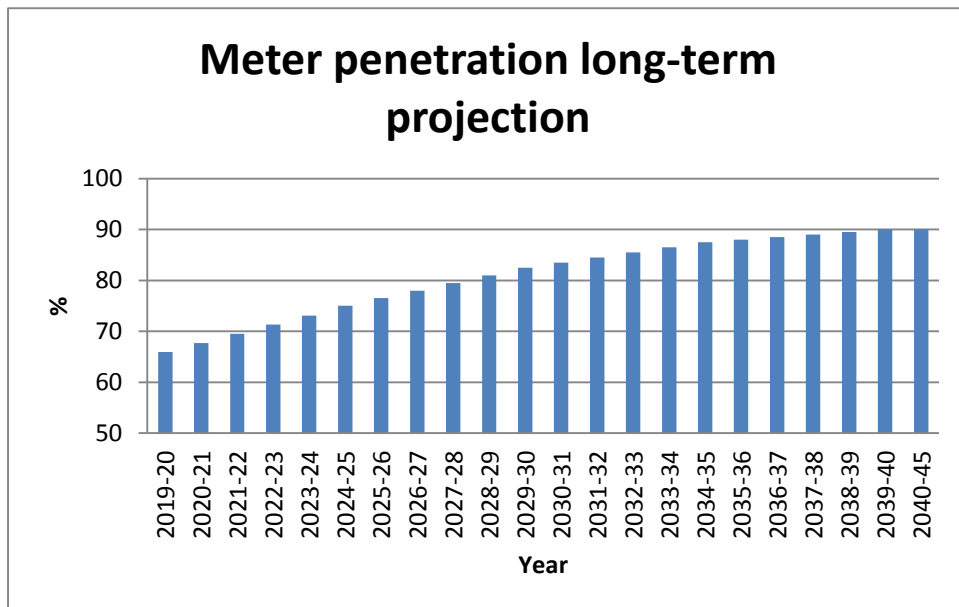


Figure 9-24 - Meter penetration long-term projection

Bristol Water is not legally allowed to introduce a compulsory metering programme as we do not cover a water-stressed area. We do, however, aim to increase household metering penetration to 90% by 2040.

9.5. Raw water quality of sources

9.5.1. Definition

This is a revision of our AMP6 performance commitment of the same name. This is an assessment of our progress in implementing catchment management of nutrients across its catchments. The measure relates to the level of nutrient loss reduction, modelled as kg of phosphorus not lost to the environment as a result of the interventions taken up by farmers across source catchments. The proposed AMP7 methodology, based on kilogrammes of phosphorus not lost to the environment as a result of our work with farmers, will more directly measure our delivery of catchment management than the AMP6 methodology, which is based on frequency of algal blooms in reservoirs.

Target delivery is based on that which has been achieved in AMP6 across the Mendip reservoir catchments (Chew, Blagdon, Cheddar), over two years; 2016/17 and 2017/18 – the first two whole years over which the Bristol Water Catchment Grant Scheme has been run.

The assessment of progress against the target will be made using a recognised model (Farmscoper) to calculate mass of nutrients saved according to interventions taken up. Farmscoper predicts pollutant losses from farms. In calculating these predictions it can take into account interventions which have been put in place to reduce pollutant losses. We are proposing to use Farmscoper to calculate changes to pollutant losses based on the interventions put in place as a result of our catchment management programme. The same model is used to assess the baseline loss of phosphorus across the catchments.

Each year, interventions delivered will be analysed in terms of the farm types, locations and sizes on which they have been implemented over the course of the year. These interventions may include provision of nutrient management plans, implementation of overwintering cover crops, and grassland aeration, as well as more infrastructure related schemes such as roofing of livestock yards.

Data on these interventions will on an annual basis be fed into the Farmscoper model to estimate the change to pollutant loss across the catchment. The Farmscoper model is then parameterised to take into account regional rainfall, farm type, farm size, and soil properties, currently based on 2015 farm census data. The model will then output an estimate of the total nutrient loss reduction achieved through implementation of the interventions.

This definition has been amended following feedback from Ofwat on the information we provided on 3rd May (as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission). The amended definition can be found in full in Appendix 3.

9.5.2. Customer views

Understanding customer views on the environment is challenging, as people often want to be seen to be supportive of environmental issues, but in practice and in their daily lives may not prioritise environmental concerns. In large-scale research customers don't seem to place a high priority on the environment relative to things they feel are more central to the water company's role, and some customers are unclear as to the extent Bristol Water should be engaged with and responsible for environmental protection. However many of our most engaged customers, like our customer forum, and our future customers, are strongly in favour of environmental protection and see it as having long-term benefits for all.

Despite this, our valuation research with customers shows us that on average customers do value the natural environment our water comes from and are happy for some of their bill to be spent protecting it, although it is not as high a priority as water quality or affordability.

C3 - Delivering outcomes for customers

Because we only have two valuations for environmental improvements we have chosen not estimate a value per customer, but we do note that both valuations were positive suggesting some willingness to pay.

When we ask customers about what environmental benefits mean to them they tell us that they want us to be clear about the benefits of our environmental work, and our stakeholders tell us that we should make the links between water and the environment clear. Stakeholders consistently emphasise the need for resources and collaborative approaches to catchment management and action planning. When we talked to customers who work or volunteer around our lakes they told us that projects like eel conservation, working with others to protect whole river catchments, and finding ways that more people can enjoy our sites without damaging the wildlife are priorities.

Engagement and research with customers on their views on the environment includes:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey – customer priorities and perceptions (A5);
- Customer forum (A3);
- Water resource research (B7);
- Deliberative resilience research (B11);
- Online attributes scenario game (B12);
- Focus groups on performance commitments (B14);
- Triangulation by attribute (B20);
- Youth board (A12); and
- Co-creation workshops with stakeholders (B17).

Although in the focus groups customers suggested a reputational incentive, this was due to Bristol Water's lack of control over agricultural practices and a desired focus on improving the quality of treated water. Our customers' objection to a financial incentive was therefore based on the metric's measurement at PR14. This has been revised for PR19.

9.5.3. Regulatory requirements

This is a bespoke performance commitment unique to Bristol Water; and a revision of our AMP6 performance commitment of the same name. This builds on the technical changes to the reporting of our performance that Ofwat agreed to in March 2018 (in particular converting performance from text into a transparent numeric calculation). However, neither historical nor comparative information is available because the measure proposed is materially different to the measure adopted throughout AMP6.

Ofwat are requiring companies to include at least one bespoke performance commitment on the environment. In its final methodology Ofwat also stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

The approaches considered for assessing the performance commitment levels are below.

C3 - Delivering outcomes for customers

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	531	This target considers the economic level of service, customer preferences, historical data and the impact on the wider environment.		✓
Comparative information	N/A	Comparative information is not available		
Historical information	N/A	Historical information is not available		
Minimum improvement	N/A	Historical information is not available		
Maximum level attainable	N/A	Historical information is not available		
Expert knowledge	140	This target was selected for inclusion within the draft Business Plan suggested plan. This was the 2025 annual rather than the cumulative value now included in the performance commitment	✓	

9.5.4. Allocation to price control

The performance commitment has been allocated to Water Resources, as it relates to activities within the Water Resources price control.

9.5.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document 'Bristol Water... Clearly', published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information. The draft Business Plan mostly focussed on the Biodiversity Index, as most of the raw water quality of sources information relates to continuing existing catchment management initiatives and addressing further initiatives that emerge as opportunities to extend catchment management arise. The actual ODI will reflect a cumulative change (to penalise or reward a total change to avoid rewarding past deficiencies, but was presented to customers in a simpler form of annual kg removed.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Raw water quality of sources	Kg of P loss reduction	0	N/A	140	N/A	150
Forecast increase to the average bill from additional investment			N/A	N/A	N/A	N/A

Table 9-23 - Raw Water Quality of Sources – Draft Business Plan Proposals

9.5.6. Draft Business Plan Consultation feedback

C3 - Delivering outcomes for customers

There is a clear reluctance from some customers to choose environmental and community options that have an impact on their bill. However, environment is also an area with the strong support for the faster plan. We have found in our research that customers are supportive of clearly described environmental initiatives, but the measures being proposed need to be specific descriptions of what is planned, rather than in a general survey description. Therefore we will maintain customer support through describing what we have done to deliver performance, as we have done with our new performance graphic for 2017/18.

Final plan acceptability testing (which included comparative information on bills and performance) identified 72% support for the proposals for this service area, with only 4% of people disagreeing.

9.5.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Raw Water Quality of Sources - Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Outperformance Payment (£m) – total 2020-25	Underperformance Penalty (£m) – total 2020-25
Expert knowledge	0	531	Out and Under		<input checked="" type="checkbox"/>	0.241	-0.341
						Payment (£m) within P90 – total 2020-25	Penalty (£m) within P10 – total 2020-25
						0.241	-0.341

Table 9-24 - Raw Water Quality of Sources - Summary

The overall ODI design and performance commitment targets are presented in the chart below.

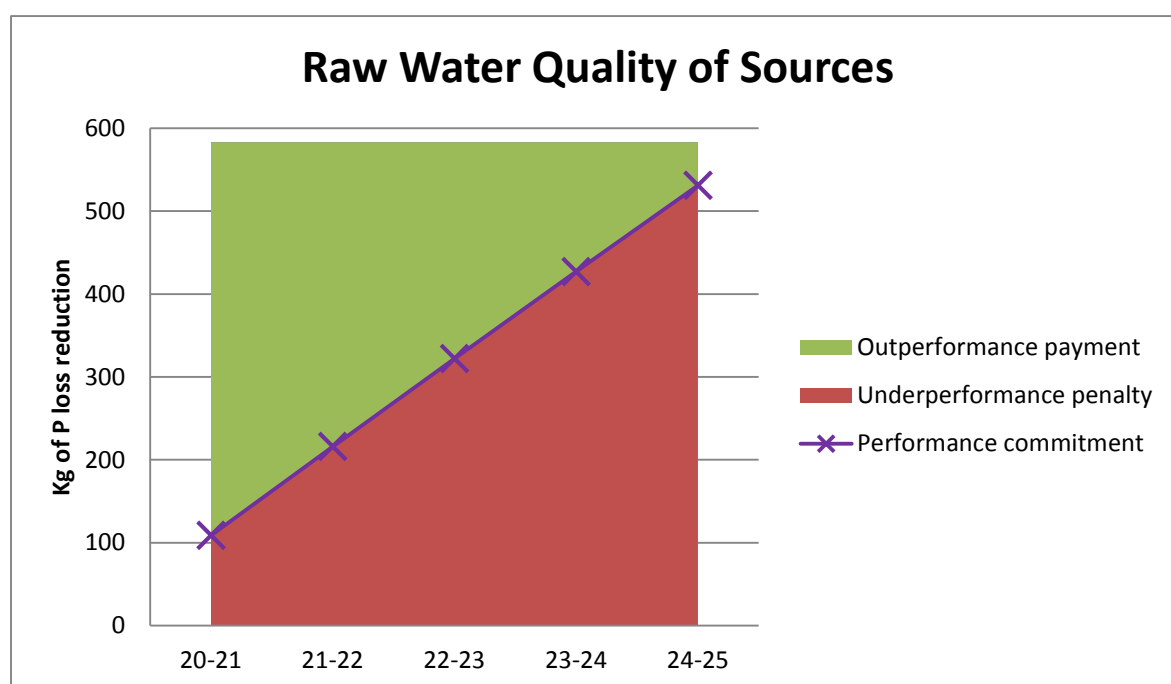


Figure 9-25 - Raw Water Quality of Sources - ODI design

C3 - Delivering outcomes for customers

As this is a new performance commitment with no historical dataset, we have set our targets based on known schemes, with a 10% potential for outperformance for innovation in new approaches to catchment management. Targets in AMP8 will be re-set once performance in AMP7 is known.

No deadbands have been proposed for this performance commitment.

A cap has been included for this performance commitment. A cap is justified on the grounds that there is a range of performance that has been subject to review and customer consultation. The outperformance area reflects going beyond legal requirements or early delivery.

All our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

The table below sets out our performance commitment. The performance is based on the cumulative Kg of P loss reduction achieved from schemes from 1 April 2020. We propose that the table below be included in our final determination.

Committed Performance Levels								
Raw Quality Sources	Water of	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC		Kg of P loss reduction	0	109	216	322	427	531
Underperformance Penalty Deadband		Kg of P loss reduction		109	216	322	427	531
Standard Underperformance penalty collar		Kg of P loss reduction		0	0	0	0	0
Outperformance Payment Deadband		Kg of P loss reduction		109	216	322	427	531
Standard Outperformance Payment Cap		Kg of P loss reduction		583	583	583	583	583

Table 9-25 - Raw Water Quality of Sources Committed Performance Levels

9.5.8. Costs, Benefits and Incentive Rates

We have applied Ofwat's standard formula for this performance commitment:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The WTP value for raw water quality has been based on benefits transfer from EA National Water Environment Benefit Survey (NWEBS) values, based on the Bristol Avon & North Somerset streams values. These cover different values for different changes in river water quality. We have taken 16.6% of the full value based on the EA water appraisal guidance – phosphate pressure, reference table here <http://www.ecrr.org/Portals/27/Publications/Water%20Appraisal%20Guidance.pdf> ; this assumes that only one of the six environmental benefit categories will be affected. These values are below:

C3 - Delivering outcomes for customers

1. Performance Commitment				
PC	Raw water quality			
Units	Kg of phosphorous loss reduction			
2a. Input values				
	Units	Lower	Central	Upper
Bad to poor	Per km improvement	£15,558.50	£18,969.96	£22,381.41
Poor to moderate	Per km improvement	£17,908.85	£21,836.07	£25,763.29
Moderate to good	Per km improvement	£20,801.90	£25,363.89	£29,925.88
2b. Other inputs				
Percentage value from EA Water Appraisal Gu	16.67%			
Kg of phosphate removed to improve 1 km	10			
3. Assessment of the value prior to addressing overlaps				
	Units	Lower	Central	Upper
Bad to poor	Per km improvement of phos	£2,593	£3,162	£3,730
Poor to moderate	Per km improvement of phos	£2,985	£3,639	£4,294
Moderate to good	Per km improvement of phos	£3,467	£4,227	£4,988
Average		£3,015	£3,676	£4,337
Value per kg of phosphate		£301	£368	£434
4. Further adjustment for overlaps				
None required.				

Figure 9-26- calculation of benefit for Raw Water Quality of Sources

The value per km is converted using the length of stream in our catchments and the KG targeted, which calculates as 10Kg/km per annum.

The costs have been taken from the company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this outcome include:

- Catchment management at Blagdon & Chew £1.5m
- Catchment management delivery (NEP) £2.1m

Full details of the investment cases can be found in the Section C5B Technical Annex.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive per kg P removed	WTP £k	Annual cost £k	Unit rate £k	Basis	Total Annual (averaged) £m	Total AMP7 £m	RORE %
Outperformance payment total	0.368	-	0.184	Central WTP	0.048	0.241	0.0
Underperformance penalty total	0.368	0.311	0.212	Triangulated WTP	-0.068	-0.341	0.0

Table 9-26 - Raw Water Quality of Sources – Calculation of Incentive Rates

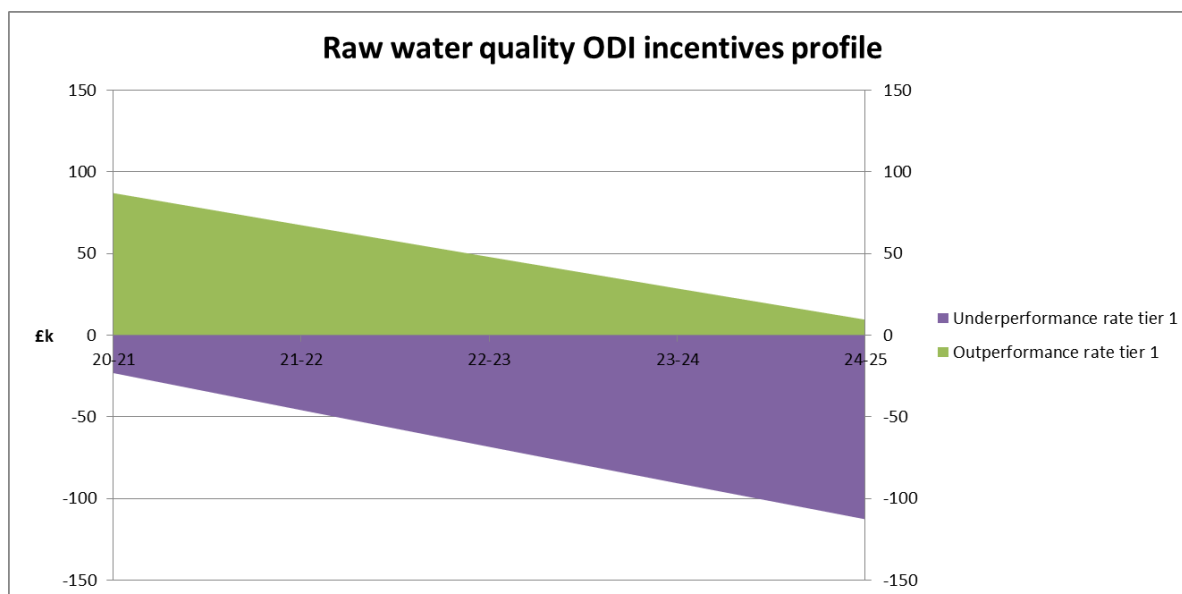


Figure 9-27 - Raw Water Quality of Sources - Incentives Profile

The performance commitment has been allocated to the Water Resources price control, because the activities covered include water resource catchment management activities.

As this is a novel ODI, we include more details of the change in outcome incentive and how this performance commitment will operate below.

9.5.9. Summary of AMP6 Raw Water Quality of Sources Performance Commitment

Bristol Water’s current version of the Raw Water Quality of Sources performance commitment (RWQ of S PC) is based on assessment against algal population data from weekly samples taken at each of Cheddar, Blagdon and Chew Valley Reservoirs. The assessment considers the frequency of samples containing algal concentrations exceeding a certain threshold (10,000 cells/ml), and compares the change in the rolling annual mean against a mean figure for AMP5. Performance is then assessed according to the direction and magnitude of change in the data and the period for which the change has been sustained. For AMP6, the committed (target) performance levels were ‘Deteriorating’ for Years 1 and 2 (acknowledging the time required to turn around an established pattern of deterioration), ‘Marginal’ for Years 3 and 4, and ‘Stable’ for Year 5. Thus far, the committed performance levels are being met, as shown in Table 1. Table 1 shows performance expressed qualitatively and as year on year change in rolling mean as % of AMP5 mean.

Year		2015/16	2016/17	2017/18	2018/19	2019/20
Target	Qualitative	Deteriorating	Deteriorating	Marginal	Marginal	Stable
	% change	>+10%	>+10%	+/-≤10%	+/-≤10%	+/-≤10% for ≥2 years
Assessment	Qualitative	Deteriorating	Deteriorating	Marginal	tbc	tbc
	% change	+20%	+11%	-4%	tbc	tbc

Table 9-27 – Raw Water Quality of Sources - AMP6 Targets and Performance

C3 - Delivering outcomes for customers

The AMP6 Raw Water Quality of Sources PC is reputational only; there are no financial rewards or penalties for over or under-performance. Catchment management was the approach proposed to deliver this PC. This acknowledges the fact that there are many factors beyond the control of Bristol Water which could influence algal populations in the reservoirs, and hence cause under or over-performance against the PC. It is also likely that as the Mendip reservoirs have a large sediment burden, we anticipate that they will respond slowly to changes in incoming water quality due to improvements in land management in the company's catchment area.

9.5.10. Development of AMP7 Raw Water Quality of Sources Performance Commitment

For AMP7 a more direct measure of the company's progress in delivering catchment management of nutrients across its catchments has been developed. The measure considers the level of nutrient loss reduction, modelled as kg of phosphorus not lost to the environment based on the interventions taken up by farmers across source catchments. These interventions are those that farmers take up as a result of encouragement and support delivered by Bristol Water in leading catchment programmes including the Mendip Lakes Partnership and the Metaldehyde Action Project. The assessment of progress against the target is made using a recognised model (Farmscoper) to calculate mass of nutrients saved according to measures taken up.

Target delivery is based on that which has been achieved in AMP6 across the Mendip reservoir catchments (Chew, Blagdon, Cheddar), over two years; 2016/17 and 2017/18 – the first two whole years over which the Bristol Water Catchment Grant Scheme has been run. The target rate equates to a rate of reduction of just over 1% of the total phosphorus lost from the catchments per year. This is comparable with that achieved by the Government's Catchment Sensitive Farming (CSF) scheme, which predicted an average of 7% reduction in dissolved phosphorus loss from catchments after 8 years of activity²⁷. Such comparisons should be treated with caution because:

- Methods of prediction and quantification vary will differ between projects; and
- Potential rates of reduction will differ between catchments, for example the potential rate across already extensively farmed Mendip catchments would be lower than for more intensively farmed catchments.

The target assumes a constant rate of effort across the Mendip reservoir catchments in delivering catchment management and advice to farms as funded by Bristol Water. As there are a finite number of farms across the target catchments, it is currently predicted that engagement efforts will record a slowly diminishing rate of return in terms of uptake of measures and management which delivers a kg P loss reduction via the Farmscoper model. It is for this reason, and because they are cumulative, that the targets are considered challenging.

The reward for outperformance would provide the company with an incentive to continue to invest in its environmental assets.

Relationship with WINEP

Under the AMP7 Water Industry National Environment Programme (WINEP), Bristol Water will undertake catchment management for nutrient reduction across the Cheddar Springs

²⁷ CSF Evidence Team Environment Agency (2014) Evaluation Report – Phases 1 to 3 (2006 – 2014).

C3 - Delivering outcomes for customers

and Egford Boreholes safeguard zones. Catchment management across the River Axe catchment is primarily aimed to reduce metaldehyde concentrations, but where possible interventions will be promoted which will also help to reduce nutrients reaching Cheddar Reservoir via the River Axe, noting that some phosphorus is currently removed from water abstracted from the River Axe by an Actiflo treatment system. Similarly, continuation of the Metaldehyde Action Project on the Gloucestershire & Sharpness Canal catchments will focus on reducing metaldehyde usage, but may present opportunities to also reduce nutrient losses. Catchment management across the Chew Valley and Blagdon Reservoir catchments will be undertaken outside of regulatory requirements on the basis that it will deliver a long-term direct benefit to Bristol Water customers by reducing treatment requirements. While the AMP7 PC will be used to incentivise delivery of interventions across all catchments, the main focus of nutrient reductions will continue to be the Mendip reservoir safeguard zones (Cheddar Springs, Blagdon and Chew Valley).

Delivery

We will continue to work with partners including Natural England, Environment Agency and the Wildlife Trusts under the Mendip Lakes Partnership. It is likely that these other organisations will continue to deliver advice and support under schemes similar to Catchment Sensitive Farming and Countryside Stewardship but as yet not finalised in the context of leaving the EU. Therefore overall loss reductions in the catchment should exceed those achieved through Bristol Water actions alone. Opportunities to widen the partnership to include Wessex Water and University of Bristol are actively being explored. Innovative mechanisms for delivery, such as phosphorus trading, will also be considered.

AMP7 Challenges and Risks

This approach does not measure the multiple benefits to Bristol Water of increasing and maintaining a high profile for water resource protection among the farming community across our catchments. Over time this will change behaviours, and may be increasingly important in the context of as yet unknown effects on the rural economy as a result of exiting the EU.

Using the Farmscoper modelling approach to assess kg phosphorus loss reduction does not measure other environmental benefits which may be delivered by on-farm interventions. The approach could incentivise delivery of interventions which while they deliver the highest modelled P reduction, may not be the most appropriate intervention for delivering all round benefit. That said it is possible that the model could be developed to incorporate additional interventions. Bristol Water is currently working with the developers of the tool, ADAS, to run catchment scale assessments.

There is a risk that the targets are unrealistic, particularly given that they have been set on the basis of only two years' worth of data on delivery of catchment interventions. As noted above, it may be that, there is a diminishing return on effort across small catchments and a finite number of farms.

The fact that for the catchment management programme to be successful, it relies on cooperation and delivery by partners beyond Bristol Water introduces a level of risk.

Summary

Bristol Water is looking forward to continuing its catchment management programme across AMP7. The re-design of the Raw Water Quality of Sources PC will more directly measure progress using an innovative approach, in terms of kg of phosphorus not lost to the water

environment – phosphorus is the key nutrient in reservoir water quality control. The proposed targets are challenging noting that there is likely to be a reduced rate of return on effort over time. The reward targets will encourage innovation.

9.5.11. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

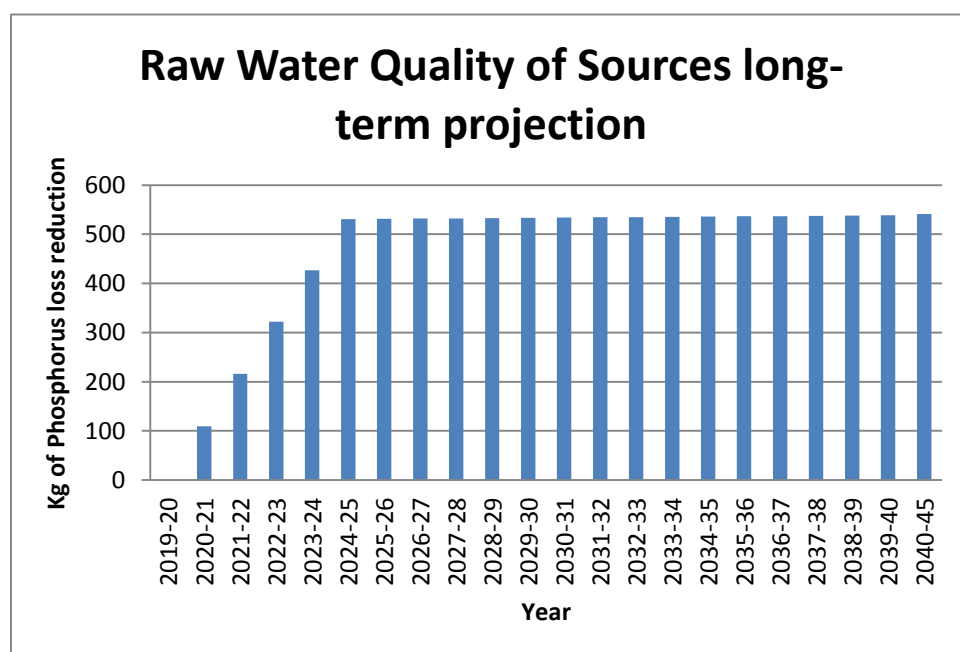


Figure 9-28 - Raw Water Quality of Sources long-term projection

Our long-term ambition is to continue to increase the number of interventions (such as nutrient management plans, implementation of overwintering cover crops, and grassland aeration, as well as more infrastructure related schemes such as roofing of livestock yards) put in place in order to reduce pollutant losses.

Risks to raw water quality are likely to continue and beyond and may increase due to as yet unknown pressures from agriculture and other industries, influenced by factors such as our exit from the EU and climate change. Natural capital will also be subject to change and potential influences which are as yet unknown. Through implementing the interventions detailed in this document, we will be in a good position to deal with further risks as they arise. However, it is likely that we will need to continue to invest in maintaining the quality of our raw water and in the quality of our designated and non-designated sites during AMP8 and beyond.

9.6. Biodiversity index

9.6.1. Definition



This is a metric that enables the company to quantify enhancements made to the natural environment across company sites. The metric is produced by calculating the cumulative hectares and meters of habitat (e.g. grassland or hedges) and the quality of this habitat. The Biodiversity Index is therefore a tool for the following purposes:

- To establish a common standard valuation tool for the natural environment and environmental improvements delivered;
- To assess the biological value of the natural environment and environmental improvements delivered;
- To drive forward an approach across the Company to deliver environmental mitigation and enhancements, ensuring that there is net gain for the natural environment which moves the company beyond its basic statutory duties; and
- To demonstrate in a transparent way to customers and stakeholders, where environmental enhancements and habitat works have ensured no net loss and provided a net gain-

Since 2015 our stewardship of the natural environment and development of the Biodiversity Index has demonstrated that Bristol Water has genuine enthusiasm for the protection and enhancement of the natural environment. We want to build upon the improvements made in AMP6 and go even further to deliver net gain and quantify the ecosystem services our natural environment provides. We also recognise the constraints of our associated operational activities, and the costs for stretching ourselves beyond the increase of 1 BI point a year. An increase in BI points will demonstrate enhancements and improvements delivered across our sites and we have identified the need to balance this delivery against the overall wider priorities of our customers.

Operational activities and constraints restrict enhancement works or expansion of habitats (therefore restricting an increase in Biodiversity Index points earned from the increase in quantity of a habitat or increasing the quality of a habitat). However opportunities considered for AMP7 improvements can be found in the Environment Investment Case (IC34) which also lists the Water Industry National Environment Programme (WINEP) obligations to be delivered.

Operational activities and production projects delivery will have a negative impact on the BI score in AMP7, as habitats and/or environmental features will be impacted or lost. The BI score will likely decrease in AMP7 if we do not delivery statutory maintenance work and the BI score would remain static if only statutory maintenance work was delivered. Therefore, future BI targets must account for negative impacts and resources to maintain designated site habitats in a stable condition. Without the prevention of no-net loss habitats would deteriorate and equate to deterioration in the company's BI score. Example of some of the statutory obligations and operational practicalities' which impede unconstrained BI improvements are:

- The Reservoir Act 1975
 - No planting of deep rooting plants on embankments
 - Maintain low cut grass on embankments to enable safety inspections of embankment structures;
- Land in agricultural use – tenancy agreements and considerations prevent swift changes in land use or land management;

C3 - Delivering outcomes for customers

- Network asset constraints – where pipe assets cross sites it is not possible to plant deeper rooted plants of species which may need to be removed during repairs and inspection work;
- Renewable energy initiatives – Ecological requests must be considered in balance with opportunities to install further solar arrays. This initiative potentially reduces available grassland habitats for BI development;
- Resilient and timely responses to emergencies and issues – reducing the risk of conflict between protected species and the requirement to access a site or asset to carry out emergency works. The present regulatory constraints for moving a protected species would delay emergency remedial work; and
- Bristol Water not acquiring new landholdings in AMP7.

To deliver habitat works that achieve 52 BI points (on average 10.4 BI points a year) over AMP7 is currently a challenging ambition due to the limited opportunities available. To achieve just 1 BI point a year (as the targets in AMP6 have been set at) we would need to look to deliver the following generic activities:

- Amend grassland management practices (e.g. periodic hay cut) of 0.25ha unimproved grasslands to upgrade conditions status from moderate to good.
- Plant 125m of new native species-rich hedgerow.
- Convert 0.25ha of semi-improved neutral grassland to woodland comprised of broad-leaved species.
- Deliver habitat management to 0.25ha of poor condition Woodland to bring the condition up to moderate.

In AMP7 we will be delivering on our statutory duty to maintain its designated sites in Favourable condition and mitigate the changes of operational activities, climate change and changes in recreational and land uses. This maintenance work (of our designated sites) will not claim BI points but it will require significant resources to deliver the maintenance and mitigate negative impacts to habitats. We will formally consult with Natural England when planning enhancement works to its designated sites to determine whether proposals would meet net-gain delivery and qualify for BI points accomplished. The external audit process will also provide verification on the BI points achieved and claimed each year of AMP7.

This performance commitment facilitates the appraisal of the company's environmental assets and enables a strategic programme of habitat improvement works to be delivered. We not only aspire to deliver net gain for the environment but to even further beyond this and develop additional natural capital accounting approaches to facilitate ecosystems services delivery in AMP8.

This definition has been amended following feedback from Ofwat on the information we provided on 3 May (as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission) as well as feedback from the Bristol Water Challenge Panel. The amended definition can be found in full in Appendix 3.

9.6.2. Customer views

As described under raw water quality above, we find mixed views on how important environmental commitments are to our customers. However we do know that our more engaged customers like our Customer Forum, and those involved with our environmental projects are keen for us to act to protect and enhance the natural environment. We also know from our valuation research that customers are willing to pay to protect the natural environment, although we need to test exactly how much. Our customers' willingness-to-pay

C3 - Delivering outcomes for customers

has been derived from a third-party study into habitat values from Christie and Rayment (2012).²⁸

When discussing potential performance commitments with our customers, they actually prioritised biodiversity as one of the most important measures by which to hold Bristol Water accountable. Customers see that Bristol has a reputation as a “green capital” to uphold, and that any damage of biodiversity could have significant negative knock-on effects. Customers selected this measure over other environmental measures (such as reduction in carbon emissions, % of water recycled, and % of energy from renewables) as their preferred measure.

Future customers also see biodiversity and protecting our water environment as important for long-term sustainability. When we asked customers in a survey about using our recreational sites they told us it was important to balance access with protecting habitat and wildlife, and we know that customers overall ascribe a positive value to improving the natural environment, although not how much.

Our environmental stakeholders advised us to make the links between water and the environment clear to our customers. They generally show a preference for initiatives that support biodiversity conservation, water quality, pollution reduction, and recreational access and facilities. The top three priorities were fish and eels; a holistic catchment approach to the water environment; and people and wildlife.

Engagement and research with customers on their views on the environment includes:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey (A5);
- Customer forum (A3);
- Water resources research (B7);
- Deliberative resilience research (B11);
- Innovative “slider” stated preference game (B12);
- Focus group on performance commitments (B14);
- Triangulation by attribute (B20);
- Youth board (A12);
- Co-creation workshops with stakeholders (B17);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30)
- Pre-acceptability testing (B31);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

Although in the focus groups customers suggested a reputational incentive, this was due to the perceived difficulty of measuring biodiversity. Their objection was based on a concern over transparency of the measurement. Since the focus group we have agreed for the current and PR19 Biodiversity Index a more transparent, numerical approach to reporting this performance commitment.

²⁸ <https://www.sciencedirect.com/science/article/pii/S2212041612000095>

9.6.3. Regulatory requirements

This is a bespoke performance commitment unique to Bristol Water and a continuation of our AMP6 performance commitment. This builds on the technical changes to the reporting of our performance that Ofwat agreed to in March 2018 (in particular converting performance from text into a transparent numeric calculation).

The PR19 methodology requires companies to include at least one bespoke performance commitment on the environment. In its final methodology Ofwat also stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

As this is a bespoke performance commitment unique to Bristol Water comparative information is not available. We have therefore considered our historical performance to date when proposing our future targets.

Biodiversity Index – Historical Information					
		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	17649	17650	17651
	Company Performance	17596	17649	17650	17657

Table 9-28 - Biodiversity Index - Historic Performance

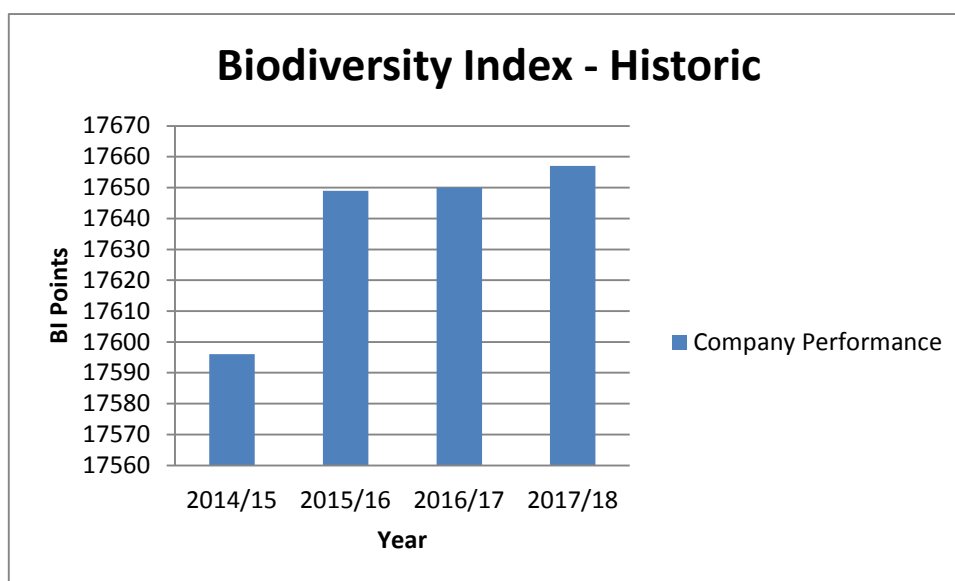


Figure 9-29- Biodiversity Index - Historic Performance

The other approaches considered for assessing the performance commitment levels are below.

Approach	2024/25 Target	Commentary	Draft proposal	Final proposal
Cost-benefit analysis	17711	This target considers the economic level of service, customer preferences, historical data and the impact on the wider environment, biodiversity and natural capital .This is a 52 point increase	✓	✓
Comparative	N/A	Comparative information is not available		

C3 - Delivering outcomes for customers

information				
Historical information	N/A	Historical performance is not a reliable method for predicting forecast performance because of the constraints on projects that can be undertaken		
Minimum improvement	17683	A 25 point increase improvement rate on our PR14 target would result in this target	✓	
Maximum level attainable	17859	This target assumes Bristol Water could achieve all theoretical BI projects, unconstrained by costs	✓	
Expert knowledge	18,723	Estimated benefit from biodiversity improvements on sites we do not own – outside the scope of the current development of the index in advance of its transition into a full natural capital accounting framework		

Table 9-29- Assessment of approaches for setting Biodiversity Index performance commitment

9.6.4. Allocation to price control

The performance commitment has been equally allocated to the Water Resources and Water Network Plus price controls because the activities cover land around reservoirs and treatment works, and biodiversity of the environment relates to both.

9.6.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’ on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Biodiversity Index	Index	17,658	17,683	17,711	17,858	18,723
Forecast increase to the average bill from additional investment £			0	1	2	N/A

Table 9-30 - Draft Business Plan information on Biodiversity Index

9.6.6. Draft Business Plan Consultation feedback

More customers prefer the faster plan for this performance commitment than any other in the outcome. When we talked to customers about enhancing their local environment some highlighted this as a key factor in their choice of package, citing their concern for the environment. However, some customers feel the opposite and say that this is not a concern for them or for us. There are a number of comments from customers who do not understand the Biodiversity Index measure and so find it hard to know whether or not improvements are significant. Social renters are most likely to choose the slower plan.

Based on feedback from customers, we propose to include a reference to the environment in the ambitions. Customers have mixed opinions on the environment but this is often because

C3 - Delivering outcomes for customers

it is spoken about in general terms. Because of the mixed views on this topic, we feel that any plan is likely to provoke a mixed response from customers and the decision between slower and suggested plan is finely-balanced.

Future customers and more informed customers, as well as the Bristol Water Challenge Panel, tend to prioritise environmental concerns.

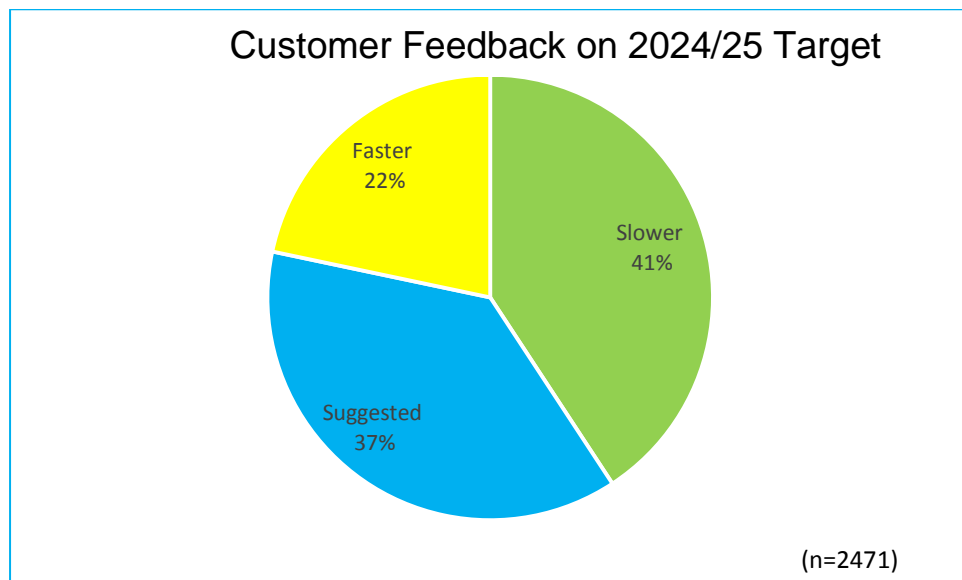


Figure 9-30 - Customer preferences on Biodiveristy Index in draft Business Plan

Final plan acceptability testing (which included comparative information on bills and performance) identified 72% support for the proposals for this service area, with only 4% of people disagreeing.

9.6.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Biodiversity Index - Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Payment (£m) – total 2020-25	Penalty (£m) – total 2020-25
Historical information	17659	17711	Out and Under		✓	0.360	-0.134
						Payment (£m) including P90 – total 2020-25	Penalty (£m) including P10 – total 2020-25
						0.360	-0.134

Table 9-31 - Biodiversity Index summary

The overall ODI design and performance commitment targets are presented in the chart below.

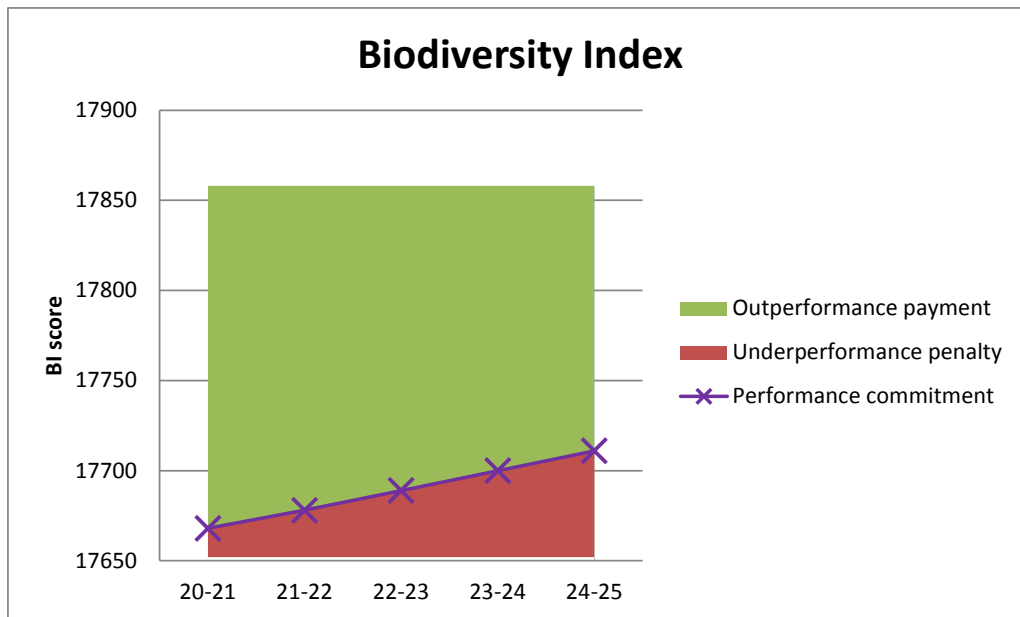


Figure 9-31 - Biodiversity Index ODI design

No deadbands have been proposed for this performance commitment. The underperformance penalty recognises that the Biodiversity Index can deteriorate, as well as improve, throughout our planned environmental activities.

Caps and collars have been included for this performance commitment. A cap and collar is justified on the grounds that as this performance commitment has an in-period ODI we have taken into consideration the importance of bill smoothing to reflect customers' preferences. A cap reflects the customer views of level of performance from our "faster" Business Plan. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole. A collar reflects the historic worse level and that there are legal obligations to biodiversity that would in any case protect the environment.

Outperformance payments will only be claimed following audit and review with Natural England, in order to establish that where a site ceases to be in favourable status, the points that require it to recover to "favourable" from "unfavourable" will be excluded from the calculation of any rewards.

Our proposed AMP7 targets are provided below for information; our targets in AMP6 were to increase BI by 1 point every year whereas in AMP7 our targets aim to roughly increase by 10 BI points every year. This level of stretch in the target is a challenging ambition because of the limited opportunities for further improvements at our sites. We propose that the table below be included in our final determination.

C3 - Delivering outcomes for customers

Committed Performance Levels							
Biodiversity Index	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	Index	17659	17668	17678	17689	17700	17711
Underperformance Penalty Deadband	Index		17668	17678	17689	17700	17711
Standard Underperformance penalty collar	Index		17652	17652	17652	17652	17652
Outperformance Payment Deadband	Index		17668	17678	17689	17700	17711
Standard Outperformance Payment Cap	Index		17858	17858	17858	17858	17858

Table 9-32 - Biodiversity Index - Committed Performance Levels

9.6.8. Costs, Benefits and Incentive Rates

We have applied Ofwat's standard formula for this performance commitment:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The value has been derived using benefit transfer from a third party study into habitat values, rather than direct customer WTP. The customer WTP has however been validated through the draft Business Plan research. The value we use of £8,539 per hectare (£854 per point) has been compared to industry ranges of WTP, which fall between £5,848 and £71,036. So our central estimate is £854 per point. The values are derived from benefits transfer applied to Bristol Water site-specific information. The value is below:

1. Performance Commitment							
PC	Biodiversity index						
Units	Biodiversity Index (numbers)						
1. Overlap with other PCs							
	None N/a						
2a. Input values							
Values from Christie and Rayment (2012 paper)							
Note low and high values inputted based on minimum and maximum							
Total benefits of achieving favourable condition (maintain and improve)						Inflation factor	1.08
Values per hectare		2012 prices			2017 prices		
Habitat type	Low	Central	High	Low	Central	High	
Average across all designated habitats	412	1249	2237	446	1,353	2,423	
Acid grassland		1081		-	1,171	-	
Lowland calcareous grassland		1383		-	1,498	-	
Neutral grassland		1078		-	1,168	-	
Purple moor-grass and rush pastures		834		-	903	-	
Heathland		1697		-	1,838	-	
Broadleaved, mixed and yew woodland		1548		-	1,677	-	
Coniferous woodland		470		-	509	-	
Rivers and streams		1471		-	1,593	-	
Canals		988		-	1,070	-	
Standing waters		1109		-	1,201	-	
Bogs		2028		-	2,197	-	
Fen, marsh and swamp		1567		-	1,697	-	
Coastal and floodplain grazing marsh		913		-	989	-	
Inland rock		412		-	446	-	
Maritime cliffs		678		-	734	-	
Sand dunes and shingle		2237		-	2,423	-	
Intertidal mudflats and saltmarsh		1744		-	1,889	-	

C3 - Delivering outcomes for customers

2b. Other inputs							
Bristol Water sites by hectare							
Number of sites surveyed	33						
Distribution of 33 sites surveyed							
Grassland	31%	204.1					
Pond	7%	47.6					
Flowing Water	2%	15.7					
Woodland	16%	105.0					
Hedgerow	5%	32.6					
Hardstanding	38%	246.9					
Total		652					
3. Assessment of the value prior to addressing overlaps							
BW sites							
	%	Ha	'Total' benefits	Additional benefits	Difference	Weighted	Total value
Grassland	31%	204.1	1168	472	695	218	141,961
Pond	7%	47.6	1201	528	674	49	32,071
Flowing Water	2%	15.7	1593	615	978	24	15,366
Woodland	16%	105.0	1093	422	671	108	70,476
Hedgerow	5%	32.6	1093	422	671	34	21,903
Hardstanding	38%	246.9	0	0	0	0	-
		652				432	281,777
Average price per Ha							
	Lower	Central	Upper				
		0	432	978			
Number of sites (in sample)							
	33						
Average price per site							
	£0		£8,539	£19,326	Added to values tab as the metric is £ per site		
	853.87						
4. Further adjustment for overlaps							
None required							
	10 points per hectare						

Figure 9-32- Calculation of benefit for Biodiversity Index

As 10 BI points translate to activity on 1 hectare, we use a WTP value of £854 per point as noted above. The support tested through the draft Business Plan and the acceptability testing also validates the use of this incentive framework.

The Biodiversity Index definition does not include maintenance and statutory mitigation as BI points and only enhancements (delivering net gain) will be claimed as rewards (clearly maintenance of existing status will be required to avoid a penalty, including on designated sites). Where enhancements relate to a designated site, this will be reviewed and settled specifically with Natural England before the annual audits. This allows agreement on the benefits to the environment being claimed.

For practical purposes we have applied this principle through wording related to whether the site ceases to be in favourable status – points that require it recover to “favourable” from “unfavourable” will be excluded from the calculation of rewards.

The incentive for biodiversity recognises that there is an environmental impact of achieving habitat status, that goes beyond the cost based approach to WINEP compliance incentives, given that a Biodiversity Action Plan with maintaining favourable status is required as part of our statutory and legal obligations. Given the novel nature of this ODI, further information is provided below

The costs have been taken from the company’s optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat’s guidance. The assumed cost of capital for this revenue calculation is 2.3%. The main investment cases over 2020-25 that contribute to the delivery of this outcome include:

- Riparian Reed bed investigations £0.4m
- Strategic Biodiversity Action Plan £1.0m
- Adaptive management & other environmental schemes £1.2m

Full details of the investment cases can be found in the Section C5B Technical Annex.

C3 - Delivering outcomes for customers

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Incentive Biodiversity Index point per	WTP £k	Annual cost £k	Unit rate £k	Basis	Total Annual (Averaged) £m	Total AMP7 £m	RORE (%)
Outperformance Payment total	0.854		0.427	Central WTP	0.072	0.360	0.0
Underperformance penalty total	0.854	0.265	0.721	Central WTP	-0.027	-0.134	-0.0

Table 9-33 - Biodiversity Index - calculation of incentive rates

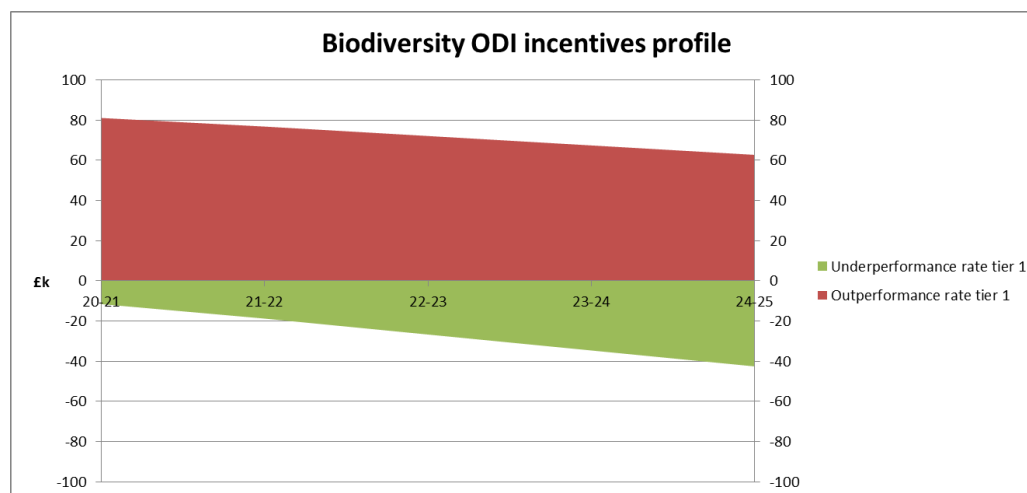


Figure 9-33- Biodiversity Incentives profile

The performance commitment has been equally allocated to the water resources and water network plus price controls because the activities covered include biodiversity at water resource reservoir sites and at water treatment works

As this is a novel ODI, we include more details below of the design of the performance commitment below.

9.6.9. Summary of AMP6 Biodiversity Index Performance Commitment

Our current target for its Biodiversity Index (BI) performance commitment is to 'Improve' the company's BI score each year. In 2017/18 we changed to reporting a numeric BI score, with a stating a minimum target increase of 1 BI point per year.

Operational activities and proposed Production projects will have a negative impact on the BI score, wherever habitat or an environmental feature is impacted or lost to necessary operational activities. Therefore, future BI forecasting must account for losses and negative impacts which would lead to a deteriorated habitat (and deterioration in the company's BI score).

Since 2015 the Biodiversity Index approach has demonstrated that we have enthusiasm for the protection and enhancement of the natural environment. The company has used the Biodiversity Index metric to demonstrate responsible environmental stewardship.

C3 - Delivering outcomes for customers

Reporting Year	BI Score	BI points increased from previous year (indicator of environmental work delivered)
2015	17613.21	(First year BI assessments carried out, this determined the AMP6 baseline)
2016	17648.90	+ 35.69
2017	17650.49	+ 1.59
2018	17657.49	+ 7.00
2019 (target)	17659.00	Required + 1.51

Table 9-34 Biodiversity Index Score Increases over AMP6

On average, we forecast that we should deliver a minimum of 1 BI point per year. During 2016 there was an increase of 35.69 BI points. Of this increase 26.62 BI points were the result of a hedgerow planting and national sponsorship event (albeit this took three years to organise and co-ordinate). This event delivered 3.3km of species-rich hedgerow habitat to the Chew Valley Lake Parkland site.

Over AMP6 we have demonstrated that a strategic programme of works is required to provide any substantial BI point increase. Delivering an average of 5 BI points a year would present us with the challenge of delivering small-scale habitat improvements. This relates to the requirement to mitigate the impact of operational activities on sites and natural deterioration of habitats. The latter consideration demonstrates that management is required in order to maintain the condition status of habitats, and thus maintain our baseline BI score.

As a result, the setting of a more challenging target, of 10 points a year, would require us to invest additional resources into providing mitigation and enhancement works.

Deterioration in a Biodiversity Index score occurs when operational activity and planned production projects are delivered and negatively impact on a habitat or environmental features. A couple of examples of this are listed below:

- Upgrade to pipeline infrastructure requires 1km of hedgerow to be removed, equating to a loss of 16 BI points
- New asset is installed at a treatment works, with a working footprint of 0.5ha resulting a loss of 0.5ha improved grassland, equating to a loss of 6 BI points

Any losses or impacts should then be mitigated and replacement habitat provided or enhancements made to other habitats to prevent deterioration in the score.

To achieve an increase of 1 BI point the company could look to deliver the following generic activities:

- Amend grassland management practices (e.g. periodic hay cut) of 0.25ha unimproved grasslands to upgrade conditions status from moderate to good
- Plant 125m of new native species-rich hedgerow
- Convert 0.25ha of semi-improved neutral grassland to woodland comprised of broad-leaved species
- Deliver habitat management to 0.25ha of poor condition Woodland to bring the condition up to moderate

C3 - Delivering outcomes for customers

One of the challenges where delivering a clearly-defined increase in BI score is concerned, is that Bristol Water does not intend to purchase new land in order to create and establish new areas of habitat. An immediate increase in the BI could be delivered via creation of a new higher value habitat, replacing the existing lower value habitat. Therefore at present the company can only advance its BI score by delivering habitat management and conservation activities which improve the condition status of existing, owned, habitats.

AMP7 Challenges and Delivery

The WINEP commits Bristol Water to delivering the following interventions for the natural environment:

- Adaptive Management of Flows & River Restoration
- Eel Protection
- Invasive Species & Biosecurity Investigations
- Recreational Transfer of Invasive Species - Management Implementation
- Strategic Biodiversity Action Plan
- Riparian Habitat & Reed bed investigations

These projects will require delivery plans to enable ambitious habitat work to be undertaken during the remainder of AMP7 and across AMP8. WINEP interventions will facilitate an appraisal of our environmental assets, and enable a strategic programme of habitat improvement works to be delivered. These works will be measurable by the Biodiversity Index. For example:

Existing 1ha of Reedbed habitat in a 'Moderate' condition, as a result of willow incursion, would equate to 12 BI points value. Bristol Water could deliver a project of removing willow scrub from this parcel of habitat to improve the condition status to 'Good' and this would increase the habitat score to 18 BI points. This increase in 6 points could be delivered over one year as part of a schedule of works around the lakes.

Due to the current operation requirements of water levels, the designated site sensitivities and lake user sensitivities this habitat work would need to be delivered over the winter period before lake levels rise to prevent access to the habitats.

By the start of AMP7 we will have a more comprehensive appraisal of its environmental assets, and able to provide statistics on the total natural resources which it manages. During AMP7, additional data will be collated in order to provide clarification on the quantity and cost of activity; and how this relates to the increased condition of habitats (and biodiversity value), as well as costs associated with achieving these results.

The nature of improving a grassland from moderate to good (e.g. via changes in management regime) or a woodland from moderate to good (e.g. via staged coppicing and replanting) would not be achieved within the first 2 years of the AMP7 period and therefore the points increase would only be claimed over a longer time frame. Time throughout the AMP is also required to negotiate and plan appropriate management which does not come into conflict with operational activities, existing structural maintenance, construction proposals, and tenancy agreements. There are limited quick BI deliverables.

At present it is not an option for Bristol Water to purchase land. The company landholding, outside of the designated sites, is in the region of 224ha. This is the total area of scattered landholdings which host operational sites as treatment works, covered reservoirs or open

C3 - Delivering outcomes for customers

water bodies. Operational requirements and activities restrict enhancements or expansion of habitats (therefore restricting an increase in Biodiversity Index points earned from the increase in quantity of a habitat or the increase in a quality of a habitat). However opportunities will be further investigated to see where enhancements can be delivered.

To further demonstrate these constraints the Purton treatment works site is shown in figure 151. Purton is approximately 30ha and forecasted to have 16.6 BI points of opportunity (2014 forecast. However it this forecast is based on no constraints. Figure 153 helps to demonstrate the limited land for improvement work and more realistic opportunities for BI improvement across approx. 5 ha are estimated at 9 BI points.

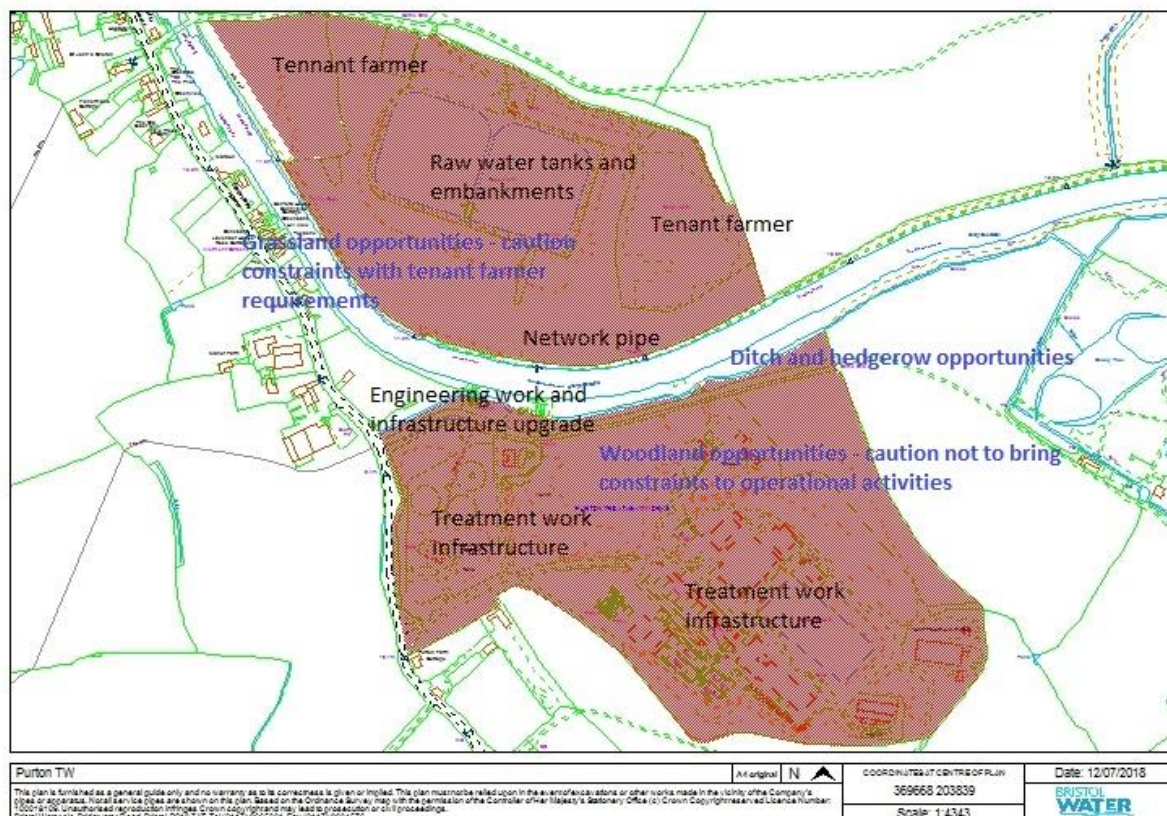


Figure 9-34– Overview of Purton treatment works and operational constraints present on the majority of Bristol Water treatment works and covered asset sites

The example of Purton treatment works highlights the need for a review of Bristol Water's natural assets and re assessing the opportunities which the company can delivery. Despite the constraints to developing habitats within company sites Bristol Water will seek opportunities for enhancing connectivity around its sites and to the wider landscape.

Where it becomes increasingly cost and time prohibitive to achieve points in habitat quality improvements (from moderate to good), innovation will be used to deliver opportunities to convert lower value habitats to higher value habitats. Further discussion and planning will be held with Natural England, Wildlife Trusts and local environmental stakeholders to identify opportunities within the designated sites that could be enhanced to provide net gain for natural environment and our natural capital.

9.6.10. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

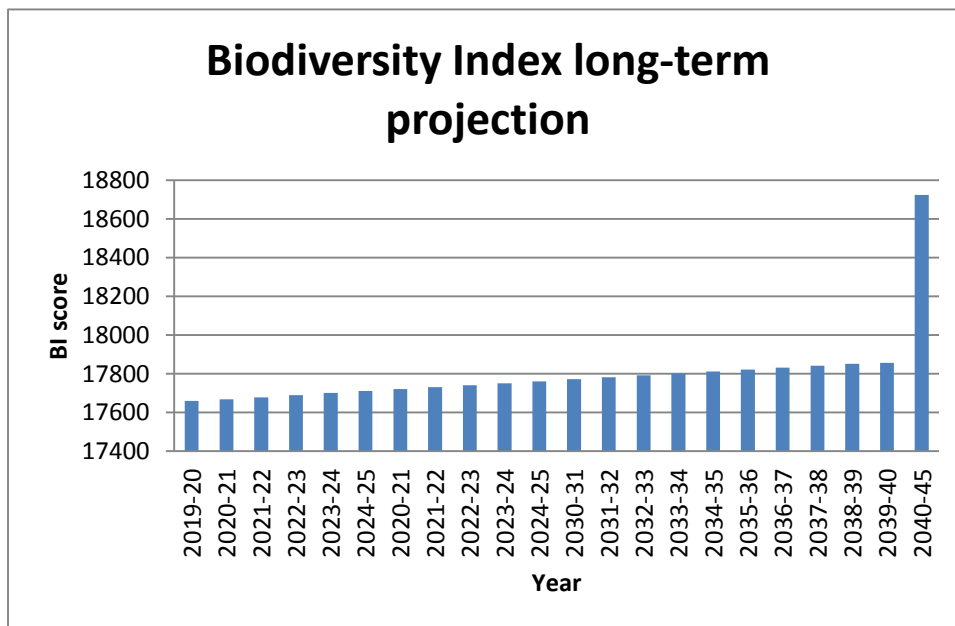


Figure 9-354 - Biodiversity Index long-term projection

During AMP7 the interventions will support the development of additional Natural Capital Accounting tools and approaches, building on our Biodiversity Index approach. We aspire to develop a package of tools which appraise the natural and social capital of our assets, and provide a baseline for reporting on additional ecosystem services over the AMP8 period.

Our long-term ambition is to achieve 18,723 Biodiversity Index points by 2050, a level of performance that can only be achieved by delivering habitat management and conservation activities in new areas of habitat (this takes into account the possibility that Bristol Water will have purchased new land and therefore establish new areas of habitat that are not currently included in the calculation of the index) or alternatively in areas of habitat (not owned by Bristol Water) but where we collaborate with other community-led stakeholders within our supply area.

9.7. Waste disposal compliance

9.7.1. Definition

The percentage compliance as per by the number of Bristol Water samples taken of discharged trade effluent from EA designated company sample points that meet the consent requirements in the Environment Agency permits.

The original definition (as submitted to Ofwat on 3 May) can be found in Appendix 3.

9.7.2. Customer views

This is an environmental measure. Understanding customer views on the environment is challenging, as people often want to be seen to be supportive of environmental issues, but in practice and in their daily lives may not prioritise environmental concerns.

Our research with customers shows us that they value the natural environment our water comes from and are happy for some of their bill to be spent protecting it, although it is not as high a priority as water quality or affordability. They tell us that they want us to be clear about the benefits of our environmental work, and our stakeholders tell us that we should make the links between water and the environment clear. When we talked to customers who work or volunteer around our lakes they told us that projects like eel conservation, working with others to protect whole river catchments, and finding ways that more people can enjoy our sties without damaging the wildlife are priorities.

Please see our customer views on raw water quality of sources and Biodiversity Index for further information on customer views on the environment.

Engagement and research with customers on their views on the environment includes:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey (A5);
- Customer forum (A3);
- Water resources research (B7);
- Deliberative resilience research (B11);
- Innovative “slider” stated preference game (B12);
- Focus groups on performance commitments (B14);
- Triangulation by attribute (B20);
- Youth board (A12); and
- Co-creation workshops stakeholders (B17).

9.7.3. Regulatory requirements

This is a bespoke performance commitment unique to Bristol Water and a continuation of an AMP6 performance commitment of the same name. Ofwat are requiring companies to include at least one bespoke performance commitment on the environment. In its final methodology Ofwat also stated that PR14 performance commitments should continue to be reported on at PR19, unless there is good reason not to do so.

As this is a bespoke performance commitment unique to Bristol Water; comparative information is not available.

Waste Disposal Compliance – Historical Information		2014/15	2015/16	2016/17	2017/18
Bristol Water	Target	-	100	100	100
	Company Performance	99.0	96.1	95.8	98.1

Table 9-35 - Waste Disposal Compliance - historic information

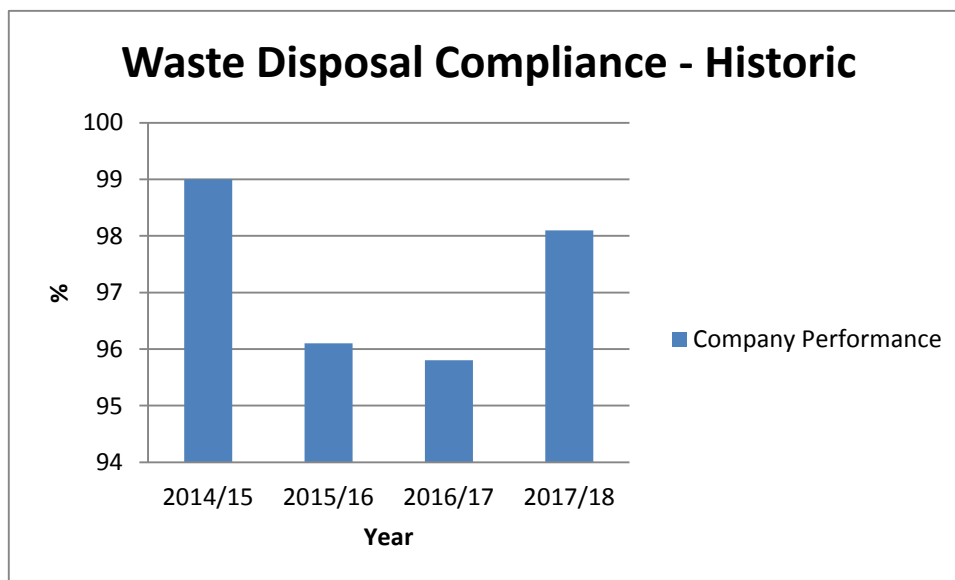


Figure 9-36 - Waste Disposal Compliance - Historic performance

As the target is to achieve the maximum level attainable no other approaches to setting the performance commitment levels have been considered.

9.7.4. Allocation to price control

The performance commitment has been allocated to the Network Plus control, because the activities relate to water treatment.

9.7.5. Draft performance commitment, targets and long-term ambition

We included information in our long-term ambition document ‘Bristol Water... Clearly’, published in February 2018 on our proposed performance commitments, 2025 forecasts and 2050 forecasts. We then included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

C3 - Delivering outcomes for customers

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target			2050 Target
			Slower improvement	Suggested improvement	Faster improvement	Long-term ambition
Waste Disposal Compliance	%	100	N/A	100	N/A	100
Forecast increase to the average bill from additional investment			N/A	0	N/A	N/A

Table 9-36 - Waste Disposal Compliance - draft Business Plan information

9.7.6. Draft Business Plan Consultation feedback

Please see 'Biodiversity Index' for consultation feedback on environmental measures.

9.7.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Waste Disposal Compliance - Summary						
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Penalty (£m) – total 2020-25
Maximum level attainable	96	100	Under Only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-0.043
						Penalty (£m) within P10 – total 2020-25
						-0.043

The overall ODI design and performance commitment targets are presented in the chart below.

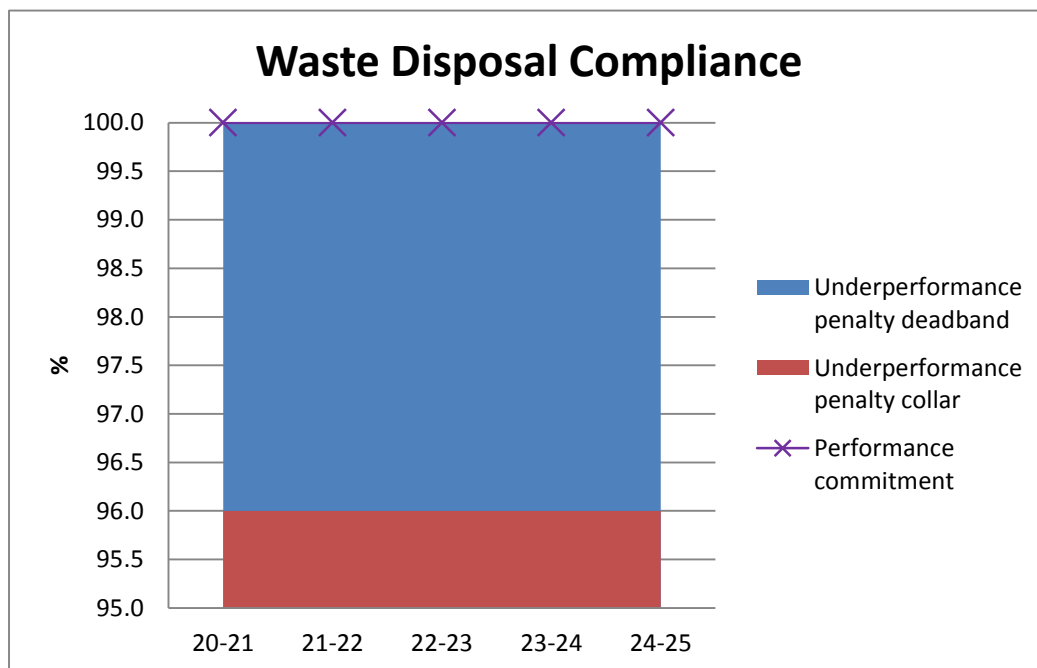


Figure 9-37- Waste Disposal Compliance - ODI Design

Following the publication of the draft Business Plan, we took advice from our stakeholders, in particular the Environment Agency, who recommended that this metric include a penalty ODI. An underperformance penalty deadband has been included; although our target in AMP6 is to achieve 100%, our baseline has been forecast to achieve 96% compliance. This compliance rate takes into account a new discharge consent that we now have in place for the fisheries at Blagdon. The Environment Agency are currently working with us to assess how to measure the environmental need at this site which previously has not had a discharge consent for historic reasons. The deadband therefore ensures that any penalties will reflect underperformance beyond this discharge consent.

Collars have been included for this performance commitment. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall collars on our incentive package as a whole.

Although the EA disagree with a deadband in principle, we have included one as they have included a new consent on Blagdon fish farm which was previously unconsented as there was no river body to measure the quality of discharge baseline to set a consent. The consent will currently fail and the EA are working to define a new consent, but our alternative will be to close the fish farm to meet this target, or include a deadband, which is not in the public interest and has been a matter of considerable local and political interest when changes of reservoir fishing opportunities have been discussed and consulted on previously. Similarly to CRI, we propose a deadband to not penalise normal levels of non-compliance which occur occasionally and we then resolve. Compliance is generally variable in terms of the discharges concerned, depending on weather and operational factors.

C3 - Delivering outcomes for customers

Our proposed AMP7 targets are provided below for information. The target has been set at the maximum level attainable i.e. there is no further stretch possible beyond 100% compliance.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Waste Disposal Compliance	Unit)	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	96	100	100	100	100	100
Underperformance Penalty Deadband	%		96	96	96	96	96
Standard Underperformance penalty collar	%		95	95	95	95	95

Table 9-37 - Waste Disposal Compliance - Committed Performance Levels

9.7.8. Costs, Benefits and Incentive Rates

We have not applied Ofwat's standard formula for this performance commitment. We have applied a cost-only incentive.

No WTP is identified and the incentive is set at 50% of the annualised cost. The underperformance penalty was added following stakeholder feedback from the Environment Agency.

The source of cost itself is estimated at 1% of water treatment works expenditure, as the activity is too small to identify future costs as it is largely minor works changes as compliance issues arise.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Total (incentive applies to 1% with deadband)	WTP	Annual cost	Unit rate	Basis	Total £m	RORE %
Underperformance penalty total for rate 1	N/A	£0.017m	£0.009m	Estimated cost	£0.043m	-0.0%

Table 9-38 - Waste Disposal Compliance - calculation of incentive rates

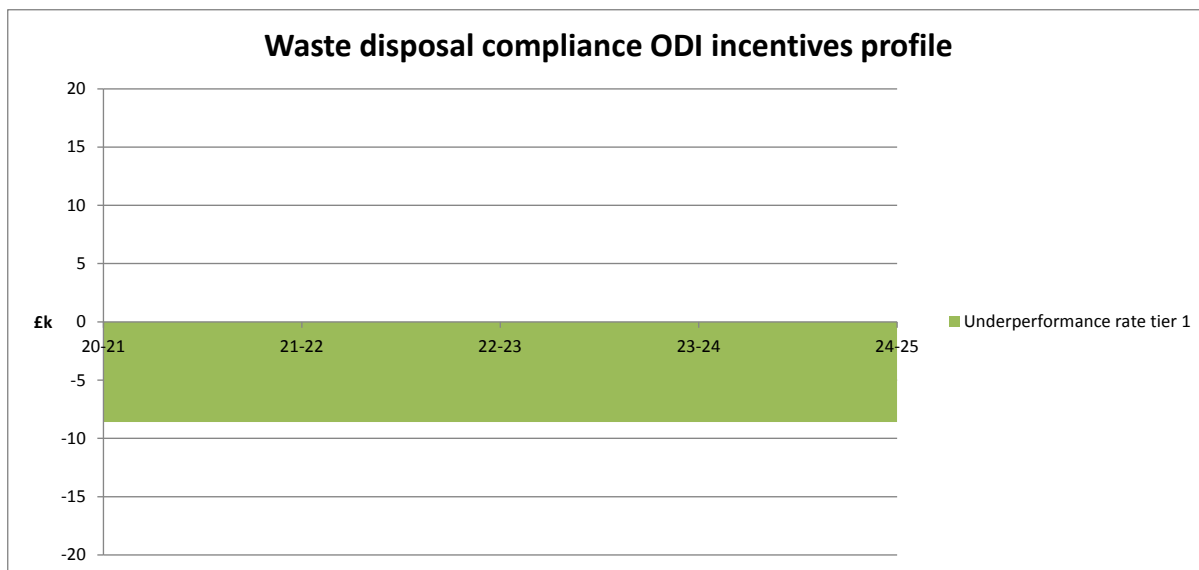


Table 9-39 - Waste Disposal Compliance Incentives profile

The performance commitment has been allocated to the Water Network Plus price control, because most of the discharges relate to water treatment works (except for Blagdon fish farm which is at a raw water pumping station, but this is reflected in the deadband).

9.7.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

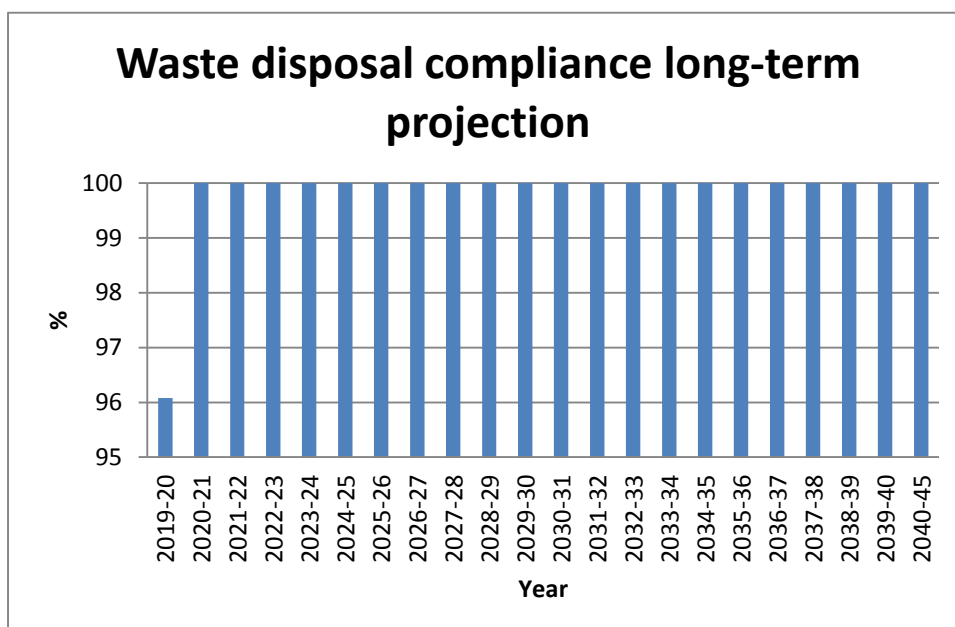


Figure 9-38 - Waste disposal compliance long-term projection

For Waste Disposal Compliance the long-term target is to achieve 100% (full compliance).

9.8. Water Industry National Environment Programme Compliance

9.8.1. Definition

This metric will measure compliance with all requirements of the Water Industry National Environment Programme (WINEP). We commit to deliver each requirement under the WINEP, with an underperformance penalty for late delivery.

Measurement against this commitment will be equally weighted on compliance with delivery of each line of the WINEP by the regulatory dates, as signed off by Environment Agency and Natural England. There are 51 lines on WINEP3:

- Investigations into eight abstractions to determine if current or future levels of abstraction (under existing licences) are likely to cause deterioration. Of these investigations, seven are scheduled to be completed by March 2022, and one by March 2025. The total deployable output of these abstractions is 69.28MI/d, although the volume at potential "risk" would be expected to be a maximum of the difference between recent actual abstraction and deployable output, a total of 5.9 MI/d;
- Two implementation projects which are aimed to benefit sections of the Rivers Chew and Yeo downstream of Chew Valley and Blagdon Reservoirs (total WFD water body length of approximately 10.5km). These projects are to follow on from trials of potential improvement measures which are taking place AMP6, and are to be completed by December 2024. These projects will enable continued adaptive management of reservoir outflows to bring about ecological improvement in these watercourses;
- Three lines which require delivery of catchment management across three safeguard zones; Cheddar Springs, Egford Main and Sub-Well, and River Axe. These are scheduled for completion in December 2024;
- One line which requires a catchment investigation across the Forum Springs safeguard zone;
- Ten lines which require investigation and potential certification of discharges according to MCERTS requirements. These have completion dates ranging from March 2023 to March 2025;
- One line which requires installation of eel passage at Chew Valley Reservoir, with completion date March 2025;
- 23 lines requiring investigations and mitigation measures around invasive non-native species (INNS). The investigations are to be completed in March 2022, and the mitigations are for completion by March 2025;
- One line requiring implementation of a company-wide strategic Biodiversity Action Plan, completion March 2025;
- One line requiring investigation into effects of discharges from Barrow WTW on phosphorus concentrations in the River Land Yeo and potential effects on downstream SSSI, for completion in March 2022; and
- One line requiring investigation into the effectiveness of floating reedbeds, fringing wetland habitat and natural flood management techniques for nutrient removal to protect reservoir SSSIs, for completion in March 2025.

This definition has been amended following feedback from Ofwat on the information we provided on 3rd May (as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission) and from the Environment Agency, who advised that the performance commitment should cover the entire programme, not elements of it as was initially proposed to Ofwat in May. The amended definition can be found in full in Appendix 3.

9.8.2. Customer views

This is an environmental measure. Understanding customer views on the environment is challenging, as people often want to be seen to be supportive of environmental issues, but in practice and in their daily lives may not prioritise environmental concerns.

Our research with customers shows us that they value the natural environment our water comes from and are happy for some of their bill to be spent protecting it, although it is not as high a priority as water quality or affordability. They tell us that they want us to be clear about the benefits of our environmental work, and our stakeholders tell us that we should make the links between water and the environment clear. When we talked to customers who work or volunteer around our lakes they told us that projects like eel conservation, working with others to protect whole river catchments, and finding ways that more people can enjoy our sties without damaging the wildlife are priorities.

Please see our customer views on raw water quality of sources and Biodiversity Index for further information on customer views on the environment.

Engagement and research with customers on their views on the environment includes:

- Customer priorities focus groups (B5);
- Online Customer Panel (A4);
- Annual customer survey – (A5);
- Customer forum g (A3);
- Water resources research (B7);
- Deliberative resilience research (B11);
- innovative “slider” stated preference game (B12);
- Focus groups on performance commitments(B14);
- Triangulation report (B20);
- Youth board (A12); and
- Co-creation workshops with stakeholders (B17).

9.8.3. Regulatory requirements

This is a new performance commitment for AMP7. Ofwat are requiring companies to include at least one bespoke performance commitment on the environment. As this is a new bespoke performance commitment for PR19, neither historic nor comparative information is available.

As the target is to achieve the maximum level attainable no other approaches to setting the performance commitment levels have been considered.

9.8.4. Allocation to price control

The performance commitment has been allocated to the Water Resources price control, because the activities covered include raw water abstractions, rivers and reservoirs, catchment management and biodiversity action plans substantially.

9.8.5. Draft performance commitment, targets and long-term ambition

This was not included in our long-term ambition document ‘Bristol Water... Clearly’, as we were still in the process of developing the most appropriate method for measuring this performance commitment.

C3 - Delivering outcomes for customers

We included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options. Although this performance commitment was not explicitly consulted on, it was published as part of our draft Business Plan.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target		
			Slower improvement	Suggested improvement	Faster improvement
WINEP Compliance	%	100	-	100	-
Forecast increase to the average bill from additional investment			0	0	0

Table 9-40 - WINEP compliance - draft Business Plan information

9.8.6. Draft Business Plan Consultation feedback

Please see 'Biodiversity Index' for consultation feedback on environmental measures.

9.8.7. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

WINEP Compliance - Summary						
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Penalty (£m) – total 2020-25
Maximum level attainable	100	100	Under Only			-1.019
						Penalty (£m) including P10 – total 2020-25
						-1.019

Table 9-41 - WINEP Compliance - Summary

The overall ODI design and performance commitment targets are presented in the chart below.

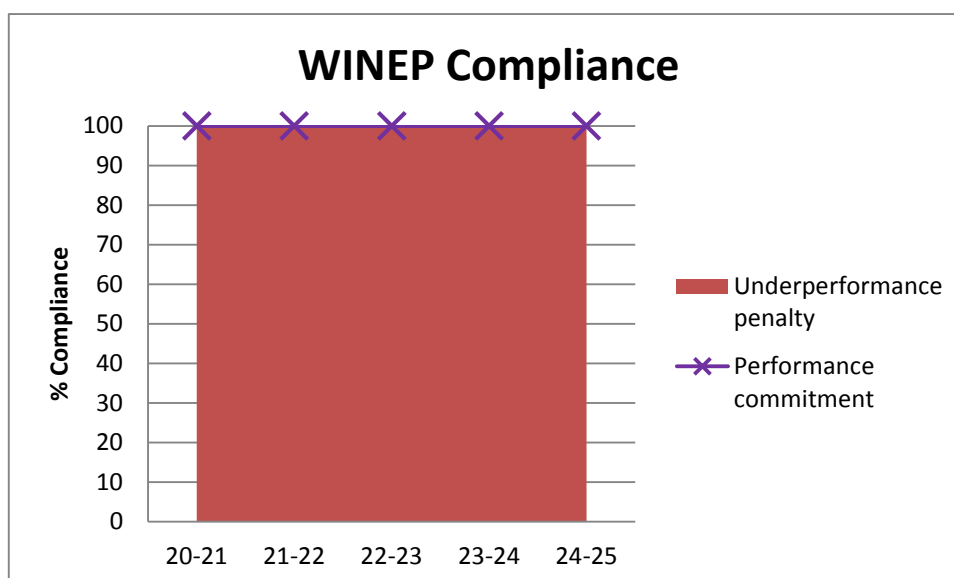


Figure 9-39- WINEP Compliance - ODI Design

No deadband has been proposed, which would result in an automatic penalty if we do not achieve full compliance.

Our proposed AMP7 targets are provided below for information. The target has been set at the maximum level attainable i.e. there is no further stretch possible beyond 100% compliance.

We propose that the table below be included in our final determination.

Committed Performance Levels							
WINEP Compliance	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	100	100	100	100	100	100
Underperformance Penalty Deadband	%		100	100	100	100	100
Standard Underperformance penalty collar	%		0	0	0	0	0

Table 9-42- WINEP Compliance - Committed Performance Levels

9.8.8. Costs, Benefits and Incentive Rates

We have not applied Ofwat’s standard formula for this performance commitment. We have applied a cost-only incentive.

The total cost of the WINEP schemes amounts to £6.1m with operating cost savings of £0.015m per annum (from improved water quality reducing treatment costs). Based on our RCV totex additions assumptions equivalent to an asset life of 18.5 years, this produces an annualised cost (after applying a cost of capital of 2.3% wholesale) by 2020 of £0.408m. This translates to £k for each 1% of WINEP completion as shown above. As with all of our incentives, we use the maximum annualised revenue (effectively the end point) rather than average AMP7 cost so as to take a longer term perspective to the incentives, which is consistent with a cost benefit calculation when compared to the WTP (where this exists).

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

C3 - Delivering outcomes for customers

Incentive Per 1% completion p.a.	WTP £m	Annual cost £m	Unit rate £m	Basis	Total Annual £m	Total AMP7 £m	RORE %
Underperformance penalty	N/A	0.004	0.002	Estimated cost	-0.204	-1.019	-0.1%

Table 9-43 - WINEP compliance - calculation of incentive rates

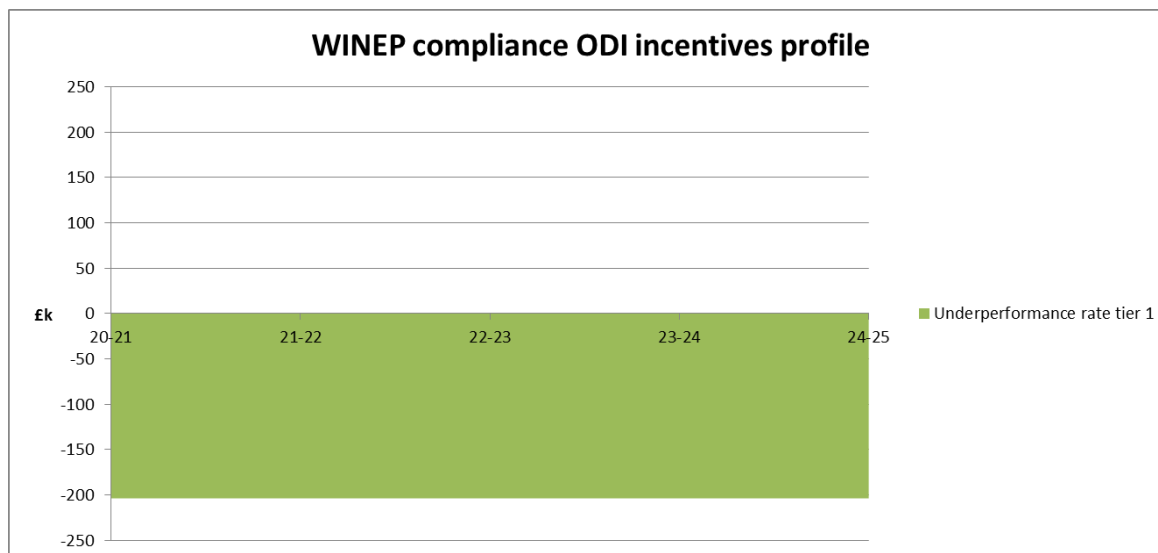


Figure 9-40 - WINEP compliance incentives profile

The performance commitment has been allocated to the Water Resources price control, because the activities covered include raw water abstractions and environmental investigations.

9.8.9. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. For WINEP Compliance the long-term target is to achieve 100% (full compliance), a performance level we are already achieving.

9.9. Abstraction Incentive Mechanism (AIM)

9.9.1. Definition

The metric aims to reduce abstraction at Shipton Moyne system (an abstraction linked to environmentally-sensitive sites), at times where there is a risk of low river flows due to low local groundwater levels. Performance is measured as the MI reduction in abstraction during times of low groundwater level.

The original definition (as submitted to Ofwat on 3 May) can be found in Appendix 3.

9.9.2. Customer views

This is an environmental measure. Understanding customer views on the environment is challenging, as people often want to be seen to be supportive of environmental issues, but in practice and in their daily lives may not prioritise environmental concerns.

Our research with customers shows us that they value the natural environment our water comes from and are happy for some of their bill to be spent protecting it, although it is not as high a priority as water quality or affordability. They tell us that they want us to be clear about the benefits of our environmental work, and our stakeholders tell us that we should make the links between water and the environment clear. When we talked to customers who work or volunteer around our lakes they told us that projects like eel conservation, working with others to protect whole river catchments, and finding ways that more people can enjoy our sties without damaging the wildlife are priorities.

We spoke to customers directly about this measure in a set of focus groups on possible performance commitments. Customers prioritised other environmental measures above this (Biodiversity Index, raw water quality, and per capita consumption) due to the low risk of drought in our supply area. However, some still considered it an valuable way to track company performance, as they saw that inappropriate abstraction can cause irreversible damage. This echoes the views of our customers when we talk about maintaining supply for the long term, where they tell us we should only be increasing supply after we've exhausted demand reduction.

Engagement and research with customers on their views on the environment includes:

- Customer priorities focus groups(B5);
- Online Customer Panel (A4);
- Annual customer survey (A5);
- Customer forum (A3);
- Water resources research (B7);
- Deliberative resilience research (B11);
- Innovative “slider” stated preference game (B12);
- Focus groups on performance commitments (B14);
- Triangulation by attribute (B20);
- Youth board (A12); and
- Co-creation workshops with stakeholders (B17).

9.9.3. Regulatory requirements

This is a new bespoke performance commitment for AMP7. Bristol Water was one of five companies (along with South West Water, Dŵr Cymru, Dee Valley Water and Bournemouth

C3 - Delivering outcomes for customers

Water) which Ofwat did not require to report on the AIM in the period 2016-20. However Ofwat are requiring companies to include at least one bespoke performance commitment on the AIM for AMP7.

As this is a new bespoke performance commitment for PR19, neither historic nor comparative information is available.

The AIM guidance issued by Ofwat in 2016 sets out that AIM is designed to be a reputational incentive which “seeks to harness a water company’s aspiration to enhance its reputation by demonstrating that it is changing its operating practices in a way that benefits the water environment”.

AIM can be applied where solutions to address unsustainable abstraction have not yet been implemented, or where the environmental impact is not sufficiently large to justify a cost-beneficial scheme under the WINEP programme.

Water companies are required by the Ofwat guidance to identify the abstraction sites to which the AIM could be implemented by applying three “filters” to potential abstraction sites, with Filters 1 and 2 providing the conditions that must be met. Filter 3 consists of additional conditions which can be used to filter sites out:

- Filter 1 – possible AIM sites should be those causing, at times, a potentially unacceptable impact on the environment if operated at licensed or current rates. The AIM could also be appropriate for managing local concerns over the impact of an abstraction on the local environment;
- Filter 2 – possible AIM sites will have an existing alternative source of water or bulk supply readily available to meet the demand that would normally come from the AIM site, or some other realistic means of reducing abstraction from the AIM site, for example, demand management; and
- Filter 3 – companies may wish, or need, to apply further filters to reflect local environmental or operating circumstances. The open-ended nature of Filter 3 means that it is very important for companies to engage with their stakeholders on the sub-filters they propose to apply and to be very open about the sub-filters they apply in practice.

In applying these filters, we have not identified any of our abstraction sites that meet the direct criteria for AIM. No sites have been classified as having a potentially unacceptable impact on the environment (Filter 1) and whilst alternative supplies are available for most abstraction sites (Filter 2), there is no current level of stakeholder or customer concerns raised about the company’s abstractions that fulfil the criteria for Filter 3.

Whilst we have not identified any AIM schemes for PR19 as set out using the Filter approach shown on the previous page, we nevertheless wish to meet broader customer expectations for environmental protection by identifying abstractions that will meet the principles of AIM for PR19. We believe that this would demonstrate our commitment to sustainable abstraction and its desire to include meaningful performance commitments for customers for AMP7.

The proposal is to introduce in AMP7 an abstraction management commitment in relation to the effects of our groundwater abstractions at Tetbury, Shipton Moyne and Long Newton on river flows in the Malmesbury Avon.

In summary, the proposal is to reduce abstraction from these boreholes sources by 0.5 MI/d compared with the historic average 30-day average daily abstraction for these boreholes in

C3 - Delivering outcomes for customers

order to reduce the impacts of abstraction on the river flows if groundwater levels at the abstraction licence observation borehole fall below a defined level at the start of the hydrological summer (1 April). If this groundwater trigger level is reached on 1 April, we will reduce our abstraction by 0.5 Ml/d for the whole of that year (to 31 March) in order to help protect river flows.

Specifically, the abstraction reduction will be implemented if the lower groundwater level control curve at the Didmarton observation borehole at the start of the year (1 April) is reached, there would be a reduction in the 30-day rolling mean abstraction by Bristol Water across the whole year to a revised abstraction rate of 7.79Ml/d. The AIM measure will act above and beyond the existing work that we have done in partnership with Wessex Water, where Wessex's abstractions in the Malmesbury area have been identified as causing environmental damage and we and Wessex are working in partnership to reduce the impacts of the newer Wessex abstractions.

Although there are no public concerns about the abstractions operated by Bristol Water, and the cause of environmental impact on the Malmesbury Avon is due to the abstraction carried out by Wessex using boreholes that significantly post-date the long-term abstractions carried out by Bristol Water in the area, we are nonetheless committed to working in partnership with our neighbouring companies for the best outcome for the environment and water supply resilience and we consider that the AIM measure proposed here will give allow a significant return of water to the natural environment without leading to any reduction in the resilience of public water supply.

We agreed with the EA that our AIM measure will provide environmental protection beyond our existing regulatory and contractual abstraction reduction agreements, by allowing for an additional reduction in abstraction during an "AIM year" for the Shipton Moyne and Tetbury aggregated abstraction licence. The AIM-style reduction will reduce abstraction during a dry year, where a dry year is defined by the level of water at Didmarton monitoring borehole on 1st April of each reporting year.

We agreed that this AIM-style measure represents a voluntary action by the company which will provide environmental benefit to the watercourses in the area. We agreed that this AIM-style commitment creates a legitimate approach to providing the intended benefit of the Abstraction Incentive Mechanism in the absence of the normal triggers for the AIM approach taken by other water companies and that it is appropriate for this to be reported in table App3 of our PR19 submission to Ofwat.

We discussed the financial valuation of this abstraction reduction with the EA, and on the basis that the marginal cost of the alternative water supply (Purton treatment works water) is of the order of £10 per Ml, which would not fully reflect the potential environmental benefit of abstraction reduction at the site and would also not provide any material incentive for us to change behaviour in abstraction at the site. With this in mind, we agreed with the EA that a penalty and reward valuation of £50 per Ml would be appropriate as this would reflect to some extent the environmental benefit that may be delivered by this proposal, while not over-valuing the change by assuming an unreasonable level of certainty in the scale of this benefit.

Despite our efforts to agree the final approach with our regional and local EA contacts, and having worked in partnership as described above to develop the proposals, we have not had final confirmation in time that they are supportive of this approach. If they decide to oppose the approach in principle, we are perfectly happy to delete this ODI as it has only been proposed to meet the requirements of the PR19 methodology, and in practice we demonstrate our environmentally sensitive approach to abstraction reductions rather than requiring an ODI to prompt us to act appropriately for the long-term benefit of the

C3 - Delivering outcomes for customers

environment. This is more important than the risk of having multiple and potentially conflicting and distracting opinions on the value of different incentive mechanisms. We are confident that in practice, this approach is appropriate but it is of modest practical impact.

9.9.4. Allocation to price control

The performance commitment has been allocated to the Water Resources price control, because it relates to raw water abstraction activity.

9.9.5. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

AIM - Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/Collars	Underperformance Payment (£m) – total 2020-25	Outperformance Penalty (£m) total 2020-25
Expert knowledge	0	2843.40	Out and under	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.112	-0.112
						Payment (£m) within P90 – total 2020-25	Penalty (£m) within P10 total 2020-25
						0.112	-0.112

Table 9-44 - AIM - Summary

Our proposed AMP7 targets are provided below for information. The performance commitment and targets represents a voluntary action by the company which will provide environmental benefit to the watercourses in the area. The targets are stretching in that they create a legitimate approach to providing the intended benefit of the Abstraction Incentive Mechanism in the absence of the normal triggers for the AIM approach taken by other water companies.

Table App3 captures any AIM schemes that the company proposes. Bristol Water was initially identified as not being required to report under AIM criteria set out in the Ofwat AIM guidance (2016) but we have identified a scheme that meets the criteria and principles of AIM and will report against this approach in Table App3 although it is to be noted that this is not a formal AIM site but rather an AIM-style commitment. The proposal is to introduce in AMP7 an abstraction management commitment in relation to the effects of the company's groundwater abstractions at Tetbury, Shipton Moyne and Long Newton on river flows in the Malmesbury Avon.

We have in early 2018 entered into an agreement with Wessex Water on measures to protect rivers that are impacted by Wessex abstractions in the Malmesbury area. This AIM-style commitment provides an opportunity to create environmental benefit additional to this formal cross-border commitment with a neighbouring water company in the region, by taking up additional opportunities to reduce abstraction that could potentially have an impact on the environment.

Data will be reported using our regulatory reporting data on abstraction from three sites, which are for licensing purposes grouped together as the "Shipton Moyne Group". Forecasts for abstraction changes are based on historic site records as returned through our telemetry systems, monitored and recorded through the monitoring package "Hydrolog".

C3 - Delivering outcomes for customers

Customer preference, willingness to pay and potential customer benefits regarding this issue are low due to the small environmental impact potentially attributable to our abstraction at this group of sites and the uncertainty associated with the benefit that will be derived from reduced abstraction at the sites during period of dry weather. The penalty and reward mechanism to be implemented for this measure is therefore based largely on the marginal cost of water from the alternative site (Purton treatment works) with a minor uplift in this value from £35/MI to £50/MI to reflect the potential environmental and river flow benefit associated with reduction in abstraction from these sites.

Outperformance and underperformance deadbands have been included for this performance commitment. As we have not been reporting on AIM in AMP6 we consider that there is little reliable historical data. The deadbands also take into account the natural variation in environmental factors affecting the measure that are outside reasonable management control.

Caps and collars for AIM are integral with the abstraction being incentivised.

Our AIM incentive includes deadbands that reflect the AIM trigger point, as described in Appendix 3. We propose that the table below be included in our final determination.

Committed Performance Levels							
AIM	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	MI	N/A	2843.4	2843.4	2843.4	2843.4	2843.4
Underperformance Penalty Deadband	M		2943.4	2943.4	2943.4	2943.4	2943.4
Standard Underperformance penalty collar	M		3390.9	3390.9	3390.9	3390.9	3390.9
Outperformance Payment Deadband	M		2743.4	2743.4	2743.4	2743.4	2743.4
Standard Outperformance Payment Cap	M		2295.9	2295.9	2295.9	2295.9	2295.9

Table 9-45 - AIM committed performance levels

9.9.6. Costs, Benefits and Incentive Rates

Ofwat has identified three methods of estimating the value of the change to the AIM abstraction on which to base an estimate of the ODI rewards and penalties (see Table 9-46).

Table 9-46 - Ofwat's proposed methods for setting rewards and penalties for the AIM

Preference	Approach	Description
First	The environmental value of abstraction reduction relative to baseline abstraction	The incentive would be calculated based on an assessment of the value of the environmental gains (including natural capital value) delivered by the revised abstraction policy.
Second	Customer willingness to pay for abstraction reduction relative to baseline abstraction	The incentive would be calculated based on customers' willingness to pay for the environmental improvement delivered by the AIM.

C3 - Delivering outcomes for customers

Preference	Approach	Description
Third	Short run marginal cost to use an alternative source (or a multiple of this cost)	<p>The incentive would be calculated by the difference in operating cost between the AIM source and the cost of alternative sources. These costs will generally reflect marginal operating costs but may include other cost differences.</p> <p>A multiple of the difference in operating costs (e.g. 1.2) could be used to provide an incentive beyond cost recovery. Alternatively, a multiplier of less than 1.0 could be used to only part-fund the additional financial cost of reducing abstraction at the AIM site.</p>

Source: Delivering Water 2020: consultation on PR19 methodology Appendix 2: Delivering outcomes for customers" Ofwat, 7/2017

To help understanding of the difference between the first two options the terminology used is explained.

- Environmental value is the worth that a community or society places on environmental goods or services such as aesthetic and recreational facilities and resources.
- There are different methods to valuing environmental worth in monetary terms. These include market prices (for trade goods), transfer values (use values derived in different studies), replacement costs, and willingness to pay which determines what stakeholders are prepared to pay for the environmental goods and services through a specific study which may use stated preference methods (a survey asking about WTP) or revealed preference methods (WTP is assessed by peoples behaviours e.g. cost and time spent in travelling to park).
- Transfer values often use and adapt the WTP values from other studies.
- Natural capital and ecosystem services have close links. Natural capital is a stock or reserve e.g. a forest, aquifer or mountain. Ecosystem services are a flow of goods (if consumed e.g. timber) or services (if they support wellbeing e.g. amenity and recreation ,services, or carbon sequestration (regulates climate effects)) provided by the natural capital²⁹.

The literature review here is concerned with providing a range of materials which would help environmental valuation using secondary sources including market prices, transfer values, and replacement costs. It does not consider literature to support an original study. This can be provided separately if required.

As discussed with the EA, we have taken an environmental valuation approach for both rewards and penalties, although we show below the alternative which would have taken the marginal cost estimate into account. This aligns to the range of value from the NWEBS toolkit which uses Avon and North Somerset values as an example. This approach was taken because the Tetbury Avon is at good ecological status, which limits the NWEBS value.

C3 - Delivering outcomes for customers

Marginal cost about £10/MI (estimated at present)	gives £7.5k in AMP						
South Staffs assessment of customer willingness to pay £0.86 per bill for 48km improved (our stretch is 11km long):	gives £98.5k in AMP						
Angling trust assessment £5k to £32k per river per year for improvement	Gives £25k to £150k in AMP						
EA assessment £17.4k - £23.2k per km for improvement in status	Gives £170k to £230k in AMP						
Potential likely penalty or reward in AMP based on a valuation of £50/MI: £37k likely total potential penalty or reward in AMP7 (max reward or penalty is £22k/a and AIM threshold would be expected to occur once every three years). A value of £50/MI has been selected as marginal cost alone (£10/MI) would only give a max penalty or reward of £4k/a hence not drive behaviour change. There is however a high level of uncertainty in the amount of environmental benefit or customer preference and as a result the full environmental valuation of up to £230k in AMP has not been assigned to this measure.							
Information from App3							
							2016-20 trigger data
PC unique ID	Abstraction site name (these can be anonymised if necessary for national security reasons)	Water body type	Impacted surface water body	Abstraction	Baseline a	ment unit	Trigger threshold
APP3001	AIMAMP6_AS	APP3002	APP3004	APP3005	APP3006	APP3007	APP3008
					MI/d		
					1		1
PR19BRL_AIM01	Shipton Moyne Grou	Ground water	Malmesbu	Regulatory	8.3	m AOD	90
	Marginal cost estimate				10	MI/d	
	EA Benefit value				50	MI/d	
	Penalty rate				45	£/Mld	
	Reward rate				25	£/Mld	

Table 9-47 - calculation of benefit for AIM

We have proposed an incentive rate of £50/MI. This is because a value based on the marginal cost of £10/MI/d would only set a maximum penalty of £4k per year, which is not considered sufficient to drive behaviour change. There is however a high level of uncertainty in the amount of environmental benefit or customer preference and as a result the full environmental valuation of up to £230k in AMP has not been assigned to this measure.

The table below shows the maximum annual incentive payments and the overall 5 year position. The incentive rates for the AIM can be found in App3 As we only have one AIM site these same values are also shown in App1.

AIM	Total Annual £m	Total AMP7 £m	RORE (%)
Outperformance Payment total	0.022	0.112	0.0
Underperformance penalty total	-0.022	-0.112	-0.0

Table 9-48 - AIM maximum incentive payments

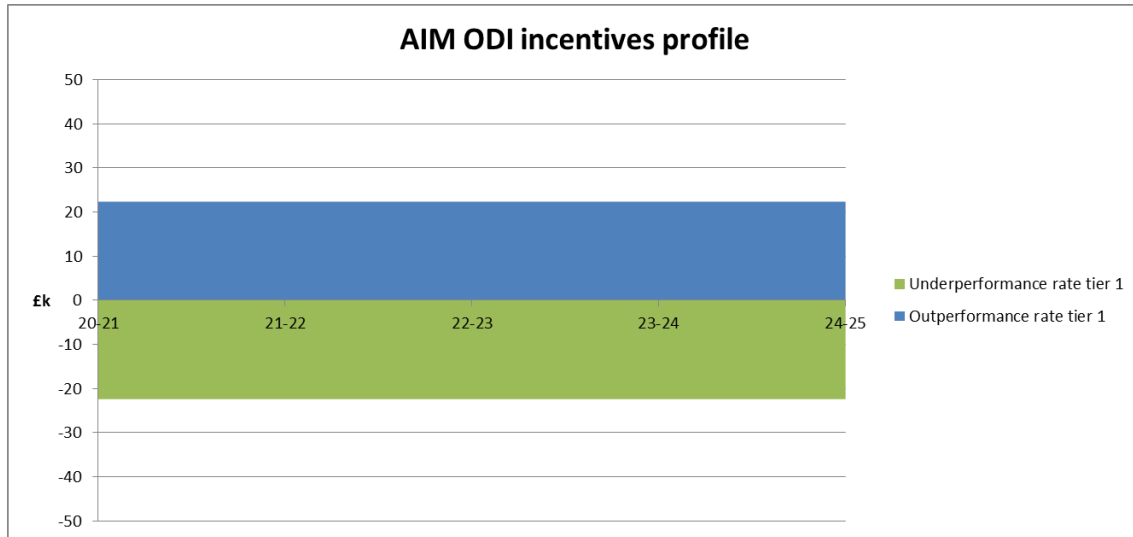


Figure 9-41 - AIM incentives profile

9.9.7. Longer-term Projections

In addition to our AMP7 targets we have also included in App1 our longer-term projections for each performance commitment. We agreed with the EA that our AIM measure will provide environmental protection beyond our existing regulatory and contractual abstraction reduction agreements. Our long-term ambition is to continue at this level of performance.

9.10. Local community satisfaction

9.10.1. Definition



We have developed an annual survey to assess the percentage of stakeholders within our supply area who are satisfied with the contribution we have made against our agreed commitments to the communities that we serve.

The methodology allows for in-depth interviews as well as the survey result to be included in the overall rating. The in-depth interviews include the same survey questions and are undertaken independently.

The proposed survey will include information on our progress against specific initiatives. The specified initiatives within are:

- Our commitment to improving education and awareness of water issues: such as the number of pupils receiving a school talk on environmental matters/water efficiency or the number of initiatives undertaken as a result of the Bristol Water Youth Board;
- Our commitment to community leadership: such as the number of new water fountains opened within our supply area, which builds upon the success of the water fountains opened in Millennium Square and Queens Square;
- Our support for the Bristol Refill campaign;
- Our academic partnerships, such as our water efficiency test site with the University of West of England;
- Our contribution to the Bristol City Mayor and West of England Combined Authority Regional strategies. An example includes the Active Roadworks initiative;
- Our commitment to community engagement: such as the satisfaction with support to the festivals/ community events that the company has attended;
- Our commitment to improving our customer experiences and opportunities at our lakes and recreational facilities;
- Roll out the use of the Biodiversity Index toolkit where we work on land that we do not own;
- Work with Wessex Water to understand our combined environmental impact and to provide joint billing messages;
- Work with Bristol Waste on resource efficiency messages;
- Form an active network on best practice engagement on resource efficiency with west of England utility companies; and
- In expanding and aligning our vulnerability support with Wessex and other utilities.

We will publish a list of our progress against the initiatives and provide this information to stakeholders in advance of conducting the survey. The description of initiatives will be overseen by the Bristol Water Challenge Panel. The initiatives included in the survey would reflect the above, with changes documented and agreed with the Bristol Water Challenge Panel and included in their Annual Report.

This definition was still under development when it was submitted to Ofwat on 3rd May as part of the regulatory requirement to submit our definitions ahead of the Business Plan submission. The finalised definition can be found in full in Appendix 3.

9.10.2. Sharing Proposal

We are also testing with customers the separate sharing proposals for the value of the small company premium (above 50%). The value of the small company cost of debt we propose is c.£3 on bills, but this is likely to be offset by the value to customers of Bristol Water efficiency and above upper quartile leakage performance (c. £4.50). Our customer research to date suggests that our customers provisionally support Bristol Water carrying on as a small company, with bills including this additional £3 cost. However we propose that we would agree reinvestment with the Bristol Water Challenge Panel each year of up to 50% of the small company premium value if:

- Bristol Water is not one of the top 3 water companies in the UK Customer Service Index - one of the 3 surveys each year January, July or the business benchmarking that has a larger sample size (25%).
- If the local community stakeholder satisfaction survey falls below 75% (25%).

The priority for reinvestment will be agreed with the Bristol Water Challenge Panel. Our suggested priorities for any reinvestment will be:

- Further community initiatives to address the root cause of dissatisfaction;
- To improve social tariff and vulnerable customer provision, e.g. part- funding of specific assistance schemes; and
- To offset a specified cost risk – related to the cost of water supplied by the Canal & River Trust.

The results of our acceptability testing on the small company premium included:

- 79% of customers prefer Bristol to remain their supplier, despite a £3 cost of finance. This support is 38%, even if there are no offsetting benefits in our service levels, which we value at £4.50;
- Only 12% of people oppose the financing cost, and only 6% prefer another supplier in any case (a similar proportion to the 6% who do not find our plan acceptable);
- 70% of customers support the additional cost of borrowing either with or without the sharing mechanism, with 53% of customers specifying that they support the cost only if sharing is in place. This tells us that customers do largely support the re-investment mechanism. However 19% said they didn't know whether or not they supported the additional cost, suggesting that there is a need for more clarity; and

When asked for their views on their preferred triggers for the sharing mechanism, customers favoured a trigger based on borrowing costs, followed by community initiatives and the UKCSI ranking, although there are supporters for each trigger being applied.

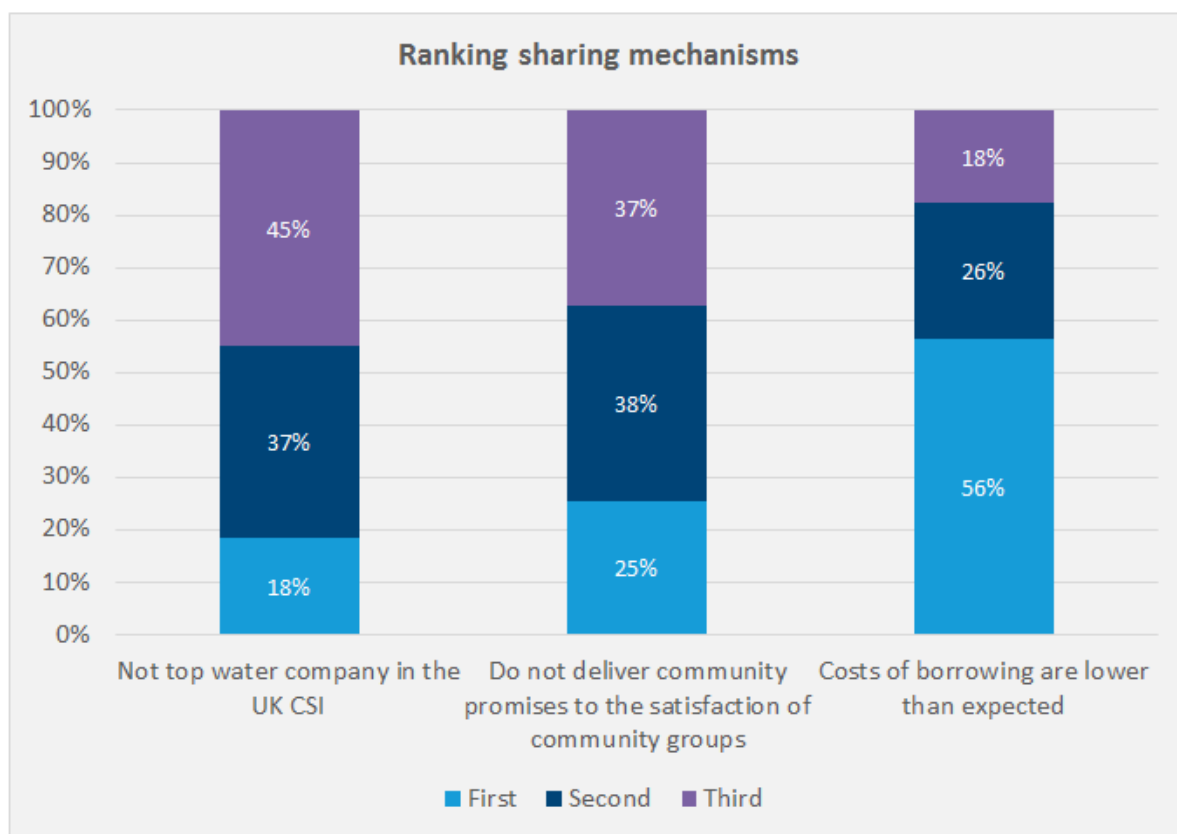


Figure 9-42 - Customer views on triggers for proposed sharing mechanisms

9.10.3. Customer views

Our work in the community is a different level of priority to service attributes like water quality, but our stakeholders and our customer forum also tell us it is part of what makes us a good company and there is a growing requirement for us to go beyond our role of water supply.

Customers participating in deliberative research articulated strong views about Bristol Water’s responsibility to the local community, but had mixed opinions regarding what this should involve. Some participants advocated for educating young people about water and water conservation and working more closely with schools. Our future customers believe that we have a strong role to play in protecting the local environment, and adding value to the local area through employment, sponsorship, and other schemes, but were less interested in more general community initiatives, as the benefit was less clear. We also know that for some topics like vulnerability the customers we speak to tell us we need to work with other local organisations to have an impact.

We provide access to our lakes and other sites for a range of leisure activities – and as many as 66% of members of our online panel tell us they visit at least once a year. However we know that many of our customers don’t visit these sites, or clearly link them with Bristol Water, and in general are not aware of the work that we do in the community. When we do talk to them about this, they are supportive and want us to share it more widely.

We have learnt about our customers’ views on our contribution to the local community through the following activities:

C3 - Delivering outcomes for customers

- Customer forum (A3);
- Online Customer Panel (A4);
- Annual customer survey (A5);
- Draft Business Plan consultation: Representative Survey (B28);
- Draft Business Plan consultation: Focus Groups with Seldom-heard Customers (B29);
- Draft Business Plan consultation: Open Consultation (B30);
- Pre-acceptability testing (B31);
- Future of the water sector (B32);
- Final Business Plan consultation: Representative Survey (B33); and
- Final Business Plan consultation: Focus Groups with Seldom-heard Customers (B34).

9.10.4. Regulatory requirements

This is a new bespoke performance commitment for AMP7. As this is a new bespoke performance commitment for PR19, none of the approaches advised by Ofwat have been considered. We have instead undertaken a pilot survey to determine our targets.

9.10.5. Allocation to price control

The performance commitment has been allocated to the Water Network Plus price control, because the activities undertaken through community and stakeholder engagement are within the Network Plus control.

9.10.6. Draft performance commitment, targets and long-term ambition

This was not included in our long-term ambition document 'Bristol Water... Clearly', as we were still in the process of developing the most appropriate method for measuring this performance commitment.

We included information in our draft Business Plan, published in March 2018, on our proposed performance commitments, refined options for our 2025 target and the estimated bill impact of these options.

The table below summarises this published information.

Performance commitment	Unit	2019/20 Baseline Target	2024/25 Target		
			Slower improvement	Suggested improvement	Faster improvement
Local community satisfaction	%	N/A (new measure)	Continue current initiatives such as 'Refill' and Water bar	Enhanced recreational benefits from our sites Working in partnership to deliver community benefit, such as reduced use of resources	Accelerated programme to deliver wider community benefits
Forecast increase to the average bill from additional investment £			1	2	3

Table 9-49 - Draft Business Plan information on Local Community Satisfaction

9.10.7. Draft Business Plan Consultation feedback and Acceptability Testing

The majority of customers supported the slower plan for local community contributions, but when we talked to customers about this performance commitment they had mixed views. For example, at the Customer Summit, some customers argued for dropping it as a distraction from the core business of supply while others supported it as an important element of what makes us different as a supplier. Customers who support this measure sometimes comment that specific and demonstrable change is needed to justify the investment. Customers on the online panel were more likely to select the slower plan.

Customer Feedback on 2024/25 Target

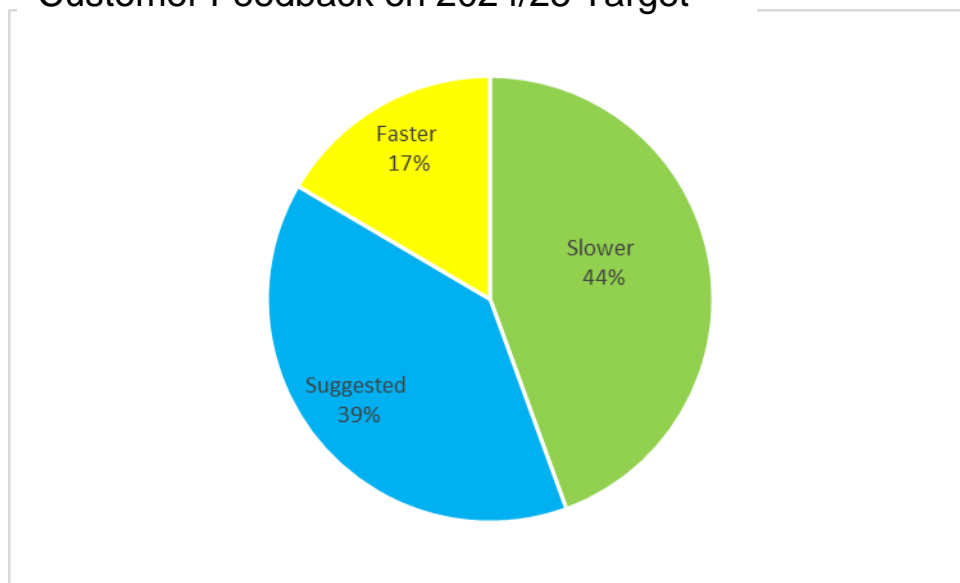


Figure 9-43- Customer preferences on local community satisfaction

There is a clear reluctance from some customers to choose environmental and community options that have an impact on their bill. We have found in other research that customers are supportive of clearly described community and environmental initiatives, but the measures being proposed need to be specific descriptions of what is planned, rather than in a general survey description. Therefore we carried out further acceptability research to test these specific proposals, as well as to test the WTP for the specific initiatives as part of our overall plan.

For the community initiatives a list of the proposals were presented and the view on the scale of incentives was then obtained. The results validate the customer WTP for these and there was clear support for a community initiative incentive:

Community initiatives		£
No incentive	25%	0
£2 rewards and penalties	42%	0.84
£5 rewards and penalties	33%	1.65
Weighted support		2.49

Table 9-50 - Customer preferences on value of local community initiatives

Either the median support of £2 or weighted support of £2.49 is sufficient to justify the scale of community incentives proposed for this performance commitment. We used the median value of £2 as a cautious approach to WTP valuation.

9.10.8. Final performance commitment, stretching targets and ODI

Taking into account the above information, we have proposed the following:

Local Community Satisfaction - Summary							
Stretch	2019/20 Baseline	2024/25 Target	ODI	ODI Deadband	ODI Caps/ Collars	Payment (£m) – total 2020-25	Penalty (£m) total 2020-25
Cost-benefit analysis	75	85	Out and under		<input checked="" type="checkbox"/>	0.831	-1.021
						Payment (£m) within P90 – total 2020-25	Penalty (£m) within P10 total 2020-25
						0.831	-1.021

Table 9-51 - Local Community Satisfaction Summary

The overall ODI design and performance commitment targets are presented in the chart below.



Figure 9-44 - Local Community Satisfaction ODI design

No deadbands have been proposed for this performance commitment.

Caps and collars have been included for this performance commitment. A cap is justified on the grounds that as this performance commitment has an in-period ODI we have taken into consideration the importance of bill smoothing to reflect customers' preferences. When combining all data sources from the draft Business Plan consultation we found that there was least support for the faster plan, and broadly a 50/50 split between preferences for the

C3 - Delivering outcomes for customers

slower and suggested plan. We took from this that our customers did not want bills to be increased by any more than the faster plan, which the proposed cap ensures. A collar on the penalty is justified on the grounds that we already have reputational consequences from poor performance. The collar also ensures that the maximum penalty rate is captured within a smaller range of underperformance. The overall range of incentive preferences from customers in the ICS research supports a balanced incentive package, including the use of a general collar on the package as a whole. In addition, all our customers who participated in our Customer Forum event in July 2018 also supported our proposals to include overall caps and collars on our incentive package as a whole.

Our proposed AMP7 targets are provided below for information. The target level has been set at 5% above current customer satisfaction survey levels, with a reward cap based at service satisfaction. The survey measures stakeholder satisfaction with a defined list of agreed schemes. Targets for AMP8 will be re-set once performance in AMP7 is known.

We propose that the table below be included in our final determination.

Committed Performance Levels							
Local Community Satisfaction	Unit	2019/20 (Baseline)	2020/21	2021/22	2022/23	2023/24	2024/25
PC	%	75	85	85	85	85	85
Underperformance Penalty Deadband	%		85	85	85	85	85
Standard Underperformance penalty collar	%		75	75	75	75	75
Outperformance Payment Deadband	%		85	85	85	85	85
Standard Outperformance Payment Cap	%		93	93	93	93	93

Table 9-52 - Local Community Satisfaction - Committed Performance Levels

9.10.9. Costs, Benefits and Incentive Rates

We have applied Ofwat's standard formula for this performance commitment:

- ODI underperformance= Incremental benefit –(incremental cost x p)
- ODI outperformance= Incremental benefit x (1 –p)

The initial calculation takes values on trips, recognising that the value could be linked to visitor numbers as part of our initiatives. However, we chose to take an alternative approach that considered the value of the specific initiatives that would contribute to satisfaction. These were:

- PCC = delivering 30% of our water efficiency challenge through Resource West initiative;
- 10 hectares of Biodiversity improvement – assessed as the amount to deliver 30% improvement;
- An estimate of the value of water poverty initiatives, based on the bill reduction required (£19) to take 1% of households out of water poverty; and
- Social value of being relieved from debt or similar worries through vulnerable customer support, based on a 30% improvement in satisfaction (a value of £25k p.a. for a 1% increase).

C3 - Delivering outcomes for customers

This amounted to a total social value of between £1.8m and £3.96m for successful completion of all initiatives, which we translated to each 1% being worth between £18k and £39k per annum. We then tested in acceptability testing the customer WTP for the specific list of initiatives that we were proposing to carry out that would support the delivery of the scale of initiatives described above. We had not included the recreational improvements as this appeared to double count with the biodiversity value, which at £85k was c50% of the £161k value of the likely number of additional recreational trips that would arise.

We tested customer satisfaction in terms of bill impact for community initiatives. This WTP of £2 on average we then applied to 519,000 residential customers. This amounted to £41.5k over the 25% potential range of improvement above 75%, our collar and performance level before these initiative. This figures is more robust than our bottom up calculation, particularly in the light of our latest zero water poverty achievement with our most recent social tariffs.

The valuation of the community satisfaction is shown below:

1. Performance Commitment							
PC	Satisfaction with contribution to the local community						
Units	% stakeholder satisfaction						
2a. Input values							
Source: Sen et al (2014), Economic Assessment of the Recreational Value of Ecosystems in Great Britain							
						Inflation facto	1.04
	Units	Lower	Central	Upper	Lower	Central	Upper
Freshwater and floodplains	£/person/trip		£3.35			£3.49	
Semi-natural grasslands	£/person/trip		£2.82			£2.94	
Woodlands	£/person/trip		£6.10			£6.35	
Wetlands	£/person/trip		£6.88			£7.16	
Urban fringe farmlands	£/person/trip		£9.76			£10.16	
Mountains, moors and healthland	£/person/trip		£9.19			£9.57	
Marine and coastal	£/person/trip		£7.23			£7.53	
2b. Other inputs							
To add:	Recreational sites improved						
	Trips generated						
PR14 visitors plus number assumed in plan	108000						
Increase in trips due to plan initiatives, %	30% Illustrative - based on 70 - 100% satisfaction						

C3 - Delivering outcomes for customers

3. Assessment of the value prior to addressing overlaps				
Land type	Proportion of land where improvements made			
Freshwater and floodplains	25%			
Semi-natural grasslands	25%			
Woodlands	25%			
Wetlands	25%			
Urban fringe farmlands	0%			
Mountains, moors and healthland	0%			
Marine and coastal	0%			
Average	£4.98			
Increase in trips due to plan initiatives, numb	32400			
Value of increase, £/yr	£161,475			
4. Further adjustment for overlaps				
May be required for pcc.				
	Low	Central	High	
Resource efficiency - wider benefits	1,895	8,331	8,533	
Biodiversity - wider benefits		84,533	84,533	
Poverty	1,443,949	2,887,898	2,887,898	
Vulnerability	374,267	748,535	748,535	
Annual value of wider initiatives	1,820,111	3,729,296	3,729,498	
Value of 1% satisfaction	18,201	37,293	37,295	

Figure 9-45 - Calculation of benefit for local community satisfaction

The costs have been taken from the Company's optimiser; this has been converted into the revenue impact, which is the impact on customer bills, in line with Ofwat's guidance. The assumed cost of capital for this revenue calculation is 2.3%. The specific schemes that help to contribute to these initiatives are:

- Resource efficiency initiative investment £0.7m
- Extend vulnerability coverage £0.2m
- Recreation and amenity facilities including habitats £3.3m

Only the latter was included in the cost incentives to avoid double-counting with other incentives.

The table below shows the basis of the calculation of the incentive rates and the overall 5 year position.

Per 1 stakeholder satisfaction %	WTP £m	Annual cost	Unit rate	Basis	Total Annual £m	Total AMP7 £m	RORE %
Outperformance rate 1 total	£0.042	-	£0.021k	Upper range Based on valuation of initiative	0.171	0.831	0.1
Underperformance penalty for rate 1 total	£0.042	£0.041	£0.020k	Lower range based on initiative valuation	-0.204	-1.021	-0.1

Table 9-46 - Local community satisfaction - calculation of incentive rates

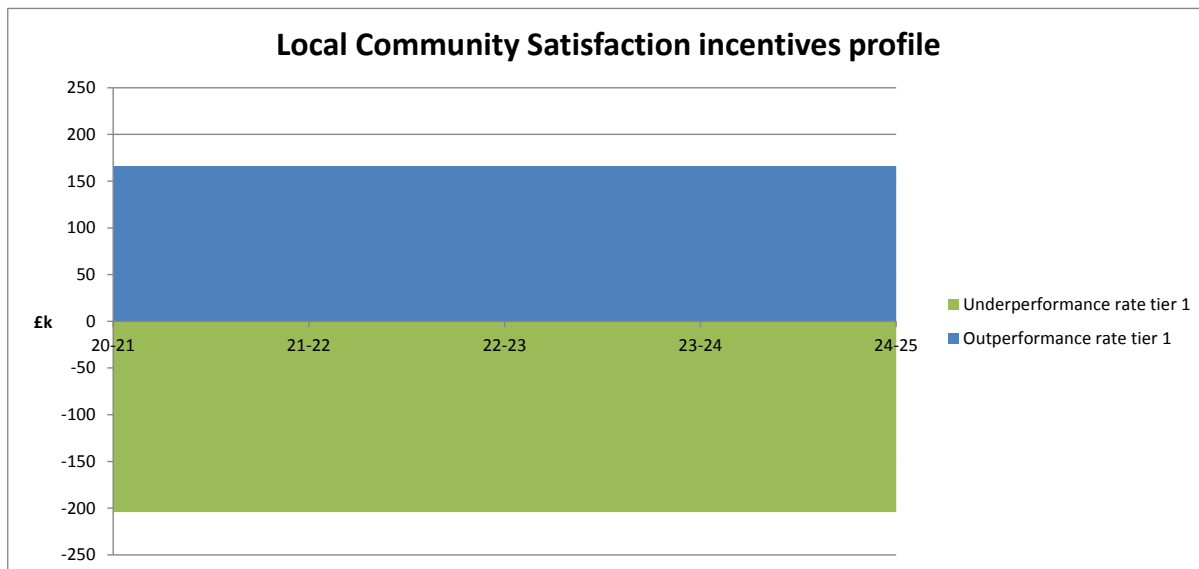


Figure 9-47 - Local Community Satisfaction incentive profile

The performance commitment has been allocated to the Water Network Plus price control, because of the associated cost with delivering network-related activities.

9.10.10. Longer-term Projections

In addition to our AMP7 targets we have also included in app1 our longer-term projections for each performance commitment. The graph below summarises our projections for this performance commitment.

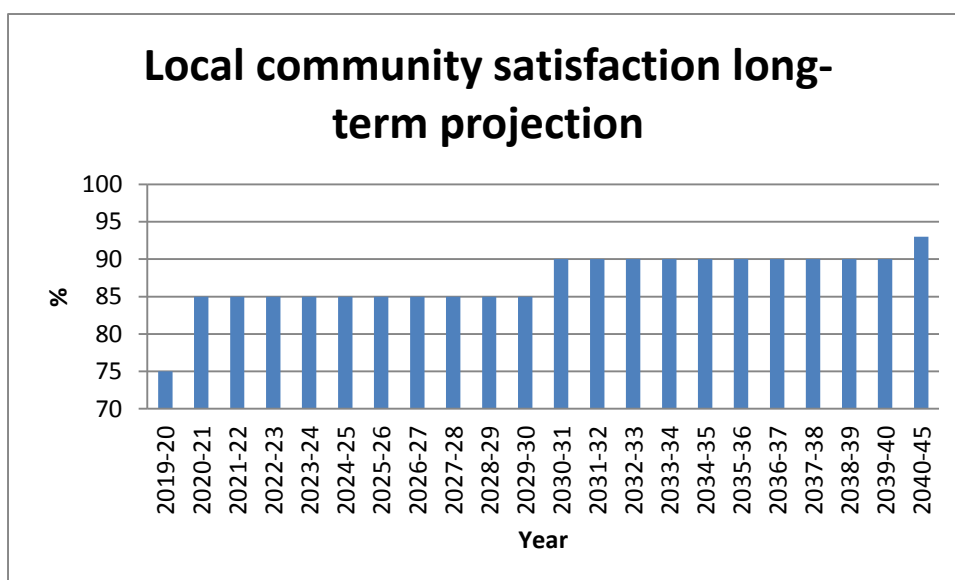


Figure 9-48 - Local community satisfaction - long-term projection

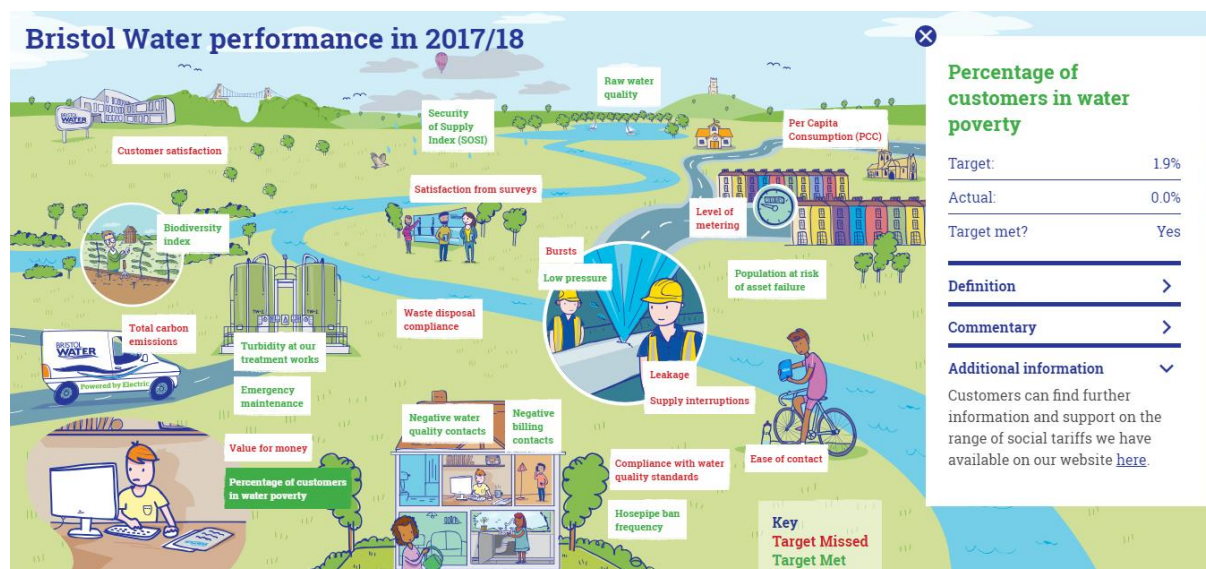
Our long-term ambition is to achieve a 93% satisfaction rate amongst our community stakeholders.

10. Monitoring Delivery

It is important that we carry on with the transparency of reporting our performance. We will:

- Continue to publish a mid-year performance report, which will provide an update on our performance but also include a comparison to other companies' performance;
- Get independent challenge on our performance with the Bristol Water Challenge Panel, and publish their independent review on our website. Include the dialogue and research with the customer on-line panel, customer forum and Bristol Water Challenge Panel on the community initiatives and customer excellence as part of the reinvestment arrangements associated with "Bristol Water For All";
- We will continue to participate in the Discover Water website;
- Our community initiatives form a cornerstone of our approach for delivering a resource efficient water service This has transparency on our progress inherent to our approach;
- Our reinvestment mechanism Bristol Water For All will make sure that there is an ongoing dialogue about how we are delivering our objectives and outcomes. This is linked to the two key areas of transparency needed about our plan – our position as top water company (and most trusted utility) in the UK Customer Service Index, and our stakeholder satisfaction with our community initiatives;
- We make a commitment where choices are faced during the period, we will engage and consult on a revised long-term ambition and updated plan. This may be important because of the cost risk where we require specific mitigation, and our proposal to cap the annual recovery of outcome incentives within customer bills. We will publish information on future bills as well as individual years, as we did this year within our Charges assurance statement; and
- Periodically update the interactive customer graphic on our website. We have developed a version for our Business Plan. The 2017/18 reporting version, shown below,, together with our "Trust in Water" statement from our Board of the trade-offs faced, included a detailed description of financial funds flow as well as customer delivery, in a easy to access way. For instance, reporting on our metering performance included a link to information on how to apply for a meter. We will promote performance in this way with useful information about how we can work with customers to improve our delivery.

<https://www.bristolwater.co.uk/performancefor2017-18/>



Appendix 1 – Excluded Performance commitments from PR14

For those performance commitments that have been proposed but not included in the final list, we have included reasons in the tables below.

A number of performance commitments from PR14 have been excluded:

Performance commitment	Include PR19?	at	Commentary
Unplanned Customer Minutes Lost	x		Superseded by Supply Interruptions
Asset reliability (infrastructure)	✓		Disaggregate the two sub-indicators (Bursts and Low Pressure) as stand-alone measures
Asset reliability (non-infrastructure)	✓		Disaggregate the two sub-indicators (Water Turbidity at Water Treatment Works and Unplanned Non-Infrastructure Maintenance Events) as stand-alone measures
Population in centres greater than 25,000 at risk from asset failure	✓		The threshold has been changed from 25,000 to 10,000
Security of Supply Index	x		Superseded by Drought Risk
Hosepipe Ban Frequency	x		Superseded by Drought Risk
Mean Zonal Compliance	x		Superseded by Water Quality Compliance (CRI)
Negative Water Quality Contacts	✓		Disaggregated into two measures - Contacts about Appearance and Contacts about Taste/Odour
Leakage	✓		Common performance commitment
Per Capita Consumption	✓		Common performance commitment
Meter Penetration	✓		Company commitment to water efficiency
Total Carbon Emissions	x		Include a commitment within Business Plan to continue to report as a non-performance commitment
Raw Water Quality of Sources	✓		Company commitment to protecting the environment
Biodiversity Index	✓		Company commitment to protecting the environment
Waste Disposal Compliance	✓		Company commitment to protecting the environment
Percentage of customers in water poverty	✓		Company commitment to affordability
Service Incentive Mechanism	x		Superseded by C-MeX
General satisfaction from surveys	x		Superseded by C-MeX
Value-for-money	✓		Company commitment to affordability
Ease of contact	x		Superseded by C-MeX
Negative billing contact	x		Superseded by C-MeX

A number of performance commitments proposed by staff at Bristol Water have been excluded:

Performance commitment	Commentary
Measures on road work interruptions and notifying customers	Assumed to be superseded by future customer experience measure
Protection from flooding	Assumed to be superseded by risk-based resilience metric

C3 - Delivering outcomes for customers

	(water): drought risk
Retail market performance	Commitment to providing MOSL with market information, but not deemed appropriate for the outcomes framework
Proportion of customers eligible for social tariffs	Commitment to keeping the percentage of customers in water poverty prioritised
A measure on customer debt	Commitment to keeping the percentage of customers in water poverty prioritised
The number of hazards addressed	Commitment to providing Ofwat with Health and Safety information, but not deemed appropriate for the outcomes framework
Lake-side visitor experience	Included within our local community satisfaction performance commitment
Energy efficiency	Commitment to four environmental performance commitments already included

A number of priorities identified by customers have not been included as individual performance commitments:

Customer priority	Commentary
Traffic disruption	As discussed under C-MeX we know that customers regard traffic disruption caused by our work as an important element of satisfaction with Bristol Water. We included traffic disruption as an option in an early version of the Business Plan shared with our Customer Forum, who tended to see it as a relatively high priority compared to other aspects of customer service, and thought it could offer a good value for money measure because it affects a large number of people. We believe that the new C-MeX measure is the best way to capture the effects of traffic disruption on our customers.
Renewable energy	Our Customer Forum were particularly keen to see Bristol Water taking steps to increase use of renewable energy. The Forum were our most engaged customers and so had more information about our current performance, as well as an interest in the work of the company. They tended to see renewable energy as both providing direct environmental benefits and leading to greater resilience in the long term. Some wanted to see Bristol Water thinking ahead and planning to provide all their own energy in future.
Recreational sites	We tested a commitment to improving access to our recreational sites with our Customer Forum, but found that while they were supportive of the aim of contributing to the local community and natural environment they did not feel the recreational sites should be a priority for investment on their own. We believe that a combination of our new Local Community Satisfaction measure, and environmental measures such as the Biodiversity Index and WINEP, will best capture the impact of recreational sites on customers and the natural environment.
Lead pipe replacement	When we talk to customers about replacing lead pipes they tend to initially see it as a high priority because they are aware of the health risks of lead, however they also say that they don't know how much of a problem it is.

Appendix 2 – Performance Commitment Decision Framework

During the development of our final list of performance commitments we have identified six criteria for testing whether our selected proposed performance commitments align with our outcomes and customer priorities. The criteria are below:

- Identified at a customer event
- Closely relates to the outcome
- It is easy to understand for our customers
- It is measureable and verifiable
- It is within company's control
- It is an investment driver for the company

The assessment of whether a performance commitment meets the criterion selected is inevitably subjective and each performance commitment is unlikely to meet all of the criteria fully. Also, a performance commitment which does not fully meet all of the criteria should not necessarily be dismissed (for example if it has been mandated by Ofwat).

The extent to which each performance commitment meets each of the six criteria is based on the following assessments:

Criterion	Low	High
Identified at a customer event	Customers made no reference to the measure or were disinterested in it	Customers identified the measure without any or little prompting and highly supportive
Closely relates to the outcome	Performance commitment relates to an input	Performance commitment directly measures achievement of the outcome
It is easy to understand for our customers	The measure is complicated and requires substantial explanation	The measure is easy to understand and does not require a lot of explanation
It is measureable and verifiable	A measure can be constructed but contains a degree of subjective judgement, the measure cannot easily be verified on an objective basis	The measure is objective, can be compared across the industry and can easily be verified by external parties
It is within the company's control	The company has a low level of control over this measure as it is strongly influenced by other factors	The company has a high level of control over this measure through management decision-making
It is an investment driver for the company	The measure has been mandated by a regulator and is not part of the company's	The measure has been based on the needs of the company to achieve its long-term

C3 - Delivering outcomes for customers

	plans	objectives
--	-------	------------

A decision framework for deciding whether our performance commitments are appropriate for our outcomes.

	Outcome	Performance Commitment	Customer Priority	Identified measure at a customer event?	Closely related to outcome?	Easy to understand	Measurable and verifiable?	Within company control?	Investment driver?
1	Safe and reliable supply of water	Water quality compliance	Quality						
2	Safe and reliable supply of water	Supply interruptions	Reliability						
3	Safe and reliable supply of water	Mains bursts	Reliability						
4	Safe and reliable supply of water	Unplanned Outage	Reliability						
5	Safe and reliable supply of water	Risk of severe restrictions in a drought	Reliability						
6	Safe and reliable supply of water	Customer contacts about water quality – appearance	Quality						
7	Safe and reliable supply of water	Customer contacts about water quality – taste and smell	Quality						
8	Safe and reliable supply of water	Properties at risk of receiving low pressure	Ensures adequate water pressure						
9	Safe and reliable supply of water	Turbidity performance at treatment works ³⁰	Quality						
10	Safe and reliable supply of water	Unplanned maintenance – non-infrastructure	Carries out work efficiently						
11	Safe and reliable supply of water	Population at risk from asset failure	Reliability						
12	Excellent customer experiences	Customer measure of experience (C-MeX)	Resolving problems quickly						
13	Excellent customer experiences	Developer services measure of experience (D-MeX)	Resolving problems quickly						
14	Excellent customer experiences	Percentage of customers in water poverty	Affordability						
15	Excellent customer experiences	Value for money	Affordability						
16	Excellent customer experiences	Percentage of satisfied vulnerable customers	Affordability						
17	Excellent customer experiences	Void properties	Affordability						
18	Local community and environmental resilience	Leakage	Leakage						
19	Local community and environmental resilience	Per capita consumption (PCC)	Leakage						
20	Local community and environmental resilience	Meter penetration	Leakage						
21	Local community and environmental resilience	Raw water quality of sources	Environment						
22	Local community and environmental resilience	Biodiversity Index	Environment						
23	Local community and environmental resilience	Waste disposal compliance	Environment						
24	Local community and environmental resilience	Water industry national environment programme (WINEP) compliance	Environment						
25	Local community and environmental resilience	Abstraction Incentive Mechanism (AIM)	Environment						
26	Local community and environmental	Local community satisfaction	Keeps customers						

³⁰ Although this metric was included in the list of asset health measures as part of the draft methodology consultation, it was subsequently removed from the list included in the final methodology statement. There is not therefore a standardised definition available on the Ofwat website. It remains our preferred measure of non-infrastructure asset health and one of our asset health performance commitments.

C3 - Delivering outcomes for customers

	resilience		informed about planned work						
--	------------	--	--------------------------------	--	--	--	--	--	--

Appendix 3 - Bristol Water's PR19 bespoke performance commitment definitions

Our bespoke performance commitment definitions were originally submitted to Ofwat on 3rd May. As explained in Chapter 5, Ofwat provided feedback on the submitted definitions on 13th July. The performance commitments in this document have been updated following the feedback received. The performance commitments are aligned to the numbering in the app1 data table. The common performance commitment definitions are not included as the company confirmed as part of the early submission requirements that it would be adopting the common performance commitments and their standardised definitions³¹ (but are referenced in Chapters 7, 8 and 9).

Outcome: Safe and reliable supply of water

We look after our assets to provide high quality, reliable supplies for present and future generations.

1. Company performance commitment PC06: Customer contacts about water quality – appearance

Short definition

The number of times Bristol Water was contacted by customers about the appearance of their tap water (per 1,000 people supplied)³² in the calendar year.

Measurement

This performance commitment is measured by:

- Units: customer contacts per population served (number of people)
- Frequency of measurement: annual (assessed on a calendar year basis).

Mitigation / exceptions

This performance commitment excludes:

- Contacts in regards to taste and smell (which are captured as a separate performance commitment); and
- Any water complaints associated with reportable events that we have notified to the Drinking Water Inspectorate (DWI) (any event notified to the DWI is excluded, in line with DWI reporting guidelines).

Any other information relating to the performance commitment

This is a revision of our AMP6 performance commitment, Negative Water Quality Contacts; we took into consideration Ofwat's expectation that we should use individual performance commitments for asset health and so our AMP6 performance commitment has been split into

³¹ Common performance commitment definitions can be found on the Ofwat website, <https://www.ofwat.gov.uk/outcomes-definitions-pr19/>

³² The definition in our original submission was aligned to the reporting definition on the Discover Water website, which measured appearance contacts per 10,000 people

C3 - Delivering outcomes for customers

two (customer contacts about water quality – appearance and customer contacts about water quality – taste and smell).

We have adopted the standard definition, which can be found on the Ofwat [website](#). This is the number of times Bristol Water was contacted by customers about the appearance of their tap water (per 1,000 people supplied) in the calendar year. This is a contact where the consumer perceives something different about the appearance of the water from the “norm” (as per the definition as stated in DWI information letter 1/2006, dated 6 January 2006)³³.

The two main causes for water not being clear are:

- disturbance of harmless deposits making the water brown, black or orange. This may occur if there is a disturbance of the mains system, caused by a burst main or a leak; and
- air or chalk making the water appear white.

Full definition of the performance commitment

This measure relates to the number of times Bristol Water was contacted by customers (by telephone, letter and email) about the appearance of their tap water (per 1,000 people supplied) each calendar year. It is consistent with the company’s reporting to the Drinking Water Inspectorate, that is, it excludes reportable events.

2. Company performance commitment PC07: Customer contacts about water quality – taste and smell

Short definition

The number of times Bristol Water was contacted by customers about their water’s taste/smell (per 1,000 people supplied) in the calendar year³⁴.

Measurement

This performance commitment is measured by:

- Units: customer contacts per population served (number of people)
- Frequency of measurement: annual (assessed on a calendar year basis).

Mitigation / exceptions

This definition excludes:

- Contacts in regards to appearance (which is captured as a separate performance commitment); and
- Any water complaints associated with events that we have notified to the Drinking Water Inspectorate (DWI) (any event notified to the DWI is excluded, in line with DWI reporting guidelines).

Any other information relating to the performance commitment

³³ http://www.dwi.gov.uk/stakeholders/information-letters/2006/01_2006.pdf

³⁴ The definition in our original submission was aligned to the reporting definition on the Discover Water website, which measured taste and odour contacts per 10,000 people

C3 - Delivering outcomes for customers

This is a revision of our AMP6 performance commitment, Negative Water Quality Contacts; we took into consideration Ofwat's expectation that we should use individual performance commitments for asset health and so our AMP6 performance commitment has been split into two (customer contacts about water quality – appearance and customer contacts about water quality – taste and smell).

We have adopted the standard definition, which can be found on the Ofwat [website](#). This is the number of times Bristol Water was contacted by customers about their water's taste/ smell (per 1,000 people supplied) in the calendar year. This is a contact where the consumer a contact where the consumer perceives that the water has a taste or smell (as per the definition as in DWI information letter 1/2006 dated 6 January 2006)³⁵.

The main causes for water tasting or smelling different are:

- the use of chlorine to maintain good hygiene in the pipe network;
- seasonal water quality effects creating a musty smell or earthy taste;
- a change in where your water comes from or how it is treated; and
- a customer's plumbing, which for various reasons can cause a range of tastes including metallic, salt, rubbery or earthy tastes.

Full definition of the performance commitment

This measure relates to the number of times Bristol Water was contacted by customers (by telephone, letter and email) about their water's taste/ smell (per 1,000 people supplied) each calendar year. It is consistent with the company's reporting to the Drinking Water Inspectorate, that is, it excludes reportable events.

3. Company performance commitment PC08: Properties at risk of receiving low pressure

Short definition

This measure is the same as the former DG2 serviceability indicator. The aim of this indicator is to identify the number of properties that have received, and are likely to continue to receive, pressure below the reference level when demand is not abnormal.

Measurement

This performance commitment is measured by:

- Units: number of properties
- Frequency of measurement: annual.

Mitigation / exceptions

These are explained in the full definition of the performance commitment.

Any other information relating to the performance commitment

This was an AMP6 sub-indicator to our Asset Reliability (Infrastructure) performance commitment. It is now being reported as a separate performance commitment.

³⁵ http://www.dwi.gov.uk/stakeholders/information-letters/2006/01_2006.pdf

This reporting definition is aligned to the definition used on [Ofwat's website](#) for asset health performance commitments.

This measure is the same as the former DG2 serviceability indicator. Any reference to DG2 in this definition is to aid familiarity and to reinforce that the indicator has not changed from that used in the former June Returns for DG2.

Full definition of the performance commitment

The aim of this indicator is to identify the number of properties that have received, and are likely to continue to receive, pressure below the reference level when demand is not abnormal.

The total number of properties in our area of water supply which, at the end of the year, have received, and are likely to continue to receive, a pressure or flow below the reference level.

To ensure consistency of information reported by all companies in the industry the following regularly used terms are defined below:

Reference level: The reference level of service is a flow of 9l/min at a pressure of 10m head on the customer's side of the main stop tap (MST). The reference level applies to a single property.

The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap.

Where a common service pipe serves more than one property, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served.

For two properties, a flow of 18l/min at a pressure of 10m head on the customers' side of the MST is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS6700 or Institute of Plumbing handbook. See below for a tabulation of minimum mains pressures for the reporting of low pressures on common services.

Surrogate for the reference level: Because of the difficulty in measuring pressure and flow at the MST, companies may measure against a surrogate reference level. We use a surrogate of 15m head in the adjacent distribution main.

Common supplies: Common supplies are where a communication pipe supplies more than one property. The required pressure in the adjacent water main used to estimate properties affected should exceed those given in the table in the guidance section. This table is intended to be a guide to the absolute minimum service acceptable over an hour (i.e. it is not based on an instantaneous peak flow). The calculations assume delivery of 9 l/minute upstairs to a combination tank (not in the loft) in the end property on a common service of half-inch bore. The calculations use the BS 6700 loading units (LU) basis, but at 3 LUs per property (9 l/minute). The LU calculations on larger groups of properties (i.e. more than 100) give instantaneous flows of between 4 and 8 times the peak hour flow rates actually observed on local distribution systems, subject to leakage and hose pipe assumptions. Accordingly, the use of 3 LUs per property is taken as an acceptable minimum.

Allowable exclusions: There are a number of circumstances under which properties identified as receiving low pressure should be excluded from the reported figure. The aim of

C3 - Delivering outcomes for customers

these exclusions is to exclude properties which receive a low pressure as a result of a one-off event and which, under normal circumstances (including normal peaks in demand), will not receive pressure or flow below the reference level. For exclusions see the guidance section.

Guidance (for all companies in the industry)

Surrogate for the reference level: Where companies choose to report against a surrogate pressure of less than 15m, evidence must be provided that this is sufficient to provide the reference level of service for all properties taking into account the length and condition of communication pipes and head loss through any meters or other company fittings. We expect all assumptions to be in the methodology. A surrogate pressure which will only provide the reference level for average properties (i.e. for average length communication pipes in good condition with no meter fitted) is not appropriate because some properties will have communication pipes longer than average; others will be in a poor condition or have meters fitted. Allowance must be made in such instances. If a higher surrogate is used, the assumptions should be clearly stated in the methodology.

Headline figure: This is an estimate of the total number of properties in the company's area that are below the reference level. Therefore, if the reported figure is likely to represent an underestimate (or overestimate), this must be reflected in the assessment of the reliability and accuracy of the reported information.

In practice, companies will report the number of properties served by a main in which the measured pressure falls below the surrogate for the reference level (usually 15m head in the adjacent distribution main) subject to the allowable exclusions.

Estimated figures: Companies may include in their reported figures estimates for the number of properties which are below the reference level but which have not yet been specifically identified. The basis for the estimate must be explained in the methodology.

Allowable exclusions: Companies must maintain verifiable, auditable records of all the exclusions that they apply in order to confirm the accuracy and validity of their information.

All properties identified as having received pressure or flow below the reference level must be reported, unless it can be confirmed that they are covered by one of the following exclusions.

Abnormal Demand

This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand which are normally expected.

Some companies are more affected by low pressures caused by occasional prolonged peaks in demand than by a few abnormal peak days each year. In such cases, instead of excluding up to five days each year, companies may choose to apply the abnormal demand exclusion over a five-year period. This will allow companies to exclude from their figures properties affected by low pressures that occur on any 25 days in a rolling five-year period.

The 'excluded day' may be applied to the company as a whole or at the level of individual zones. However, in either case, once a property has suffered low pressures on either more than five days in one year or 25 days in five years, it must be added to the reported figures.

Option 1 - During the report year, companies may exclude for each property a maximum of 25 days of low pressure caused by abnormal demand in a rolling five-year period.

C3 - Delivering outcomes for customers

Companies should exclude from the reported figures properties that are affected by low pressure only on the days identified as "high demand" in the report year. In years where demand is normal (i.e. the exclusion is not being used), properties affected by relevant low pressure incidents should be reported as receiving low pressure (unless covered by one of the other exclusions).

Option 2 - Where extensive pressure logging covering the majority of properties in the supply area is used, the company may exclude properties where logger records verify that up to five incidents of low pressure lasting more than one hour have occurred. Under this option, it is not necessary to match the low pressure incidents with high demands. Companies that choose this method must include the number of properties that suffer more than five incidents of low pressure lasting more than one hour in the reported figure without necessarily identifying the specific occasions and reasons for abnormal demand. If this method is used, no other allowance may be made for abnormal demand but the other exclusions still apply.

Companies must clearly state in their methodologies which approach they have adopted in applying this exclusion, list the distribution or supply zones they have chosen and the number of days excluded. If the exclusion is applied at the level of individual zones, rather than to the company as a whole, the company must maintain verifiable records which list the number of 'excluded days' used for each distribution zone each year.

Planned maintenance

Companies should not report low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.

One-off incidents

This exclusion covers a number of causes of low pressure:

- mains bursts;
- failures of company equipment (such as Pressure Reducing Valves or booster pumps);
- fire-fighting; and
- action by a third party.

If problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded.

Low pressure incidents of short duration

Properties affected by low pressures which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded from the reported figures.

- In locations where companies carry out continuous pressure logging year round, low pressure incidents of less than one hour may be excluded; and
- Where short term or intermittent logging is used, if all low pressure incidents lasting less than one hour are excluded then there is a danger that properties which are actually below the reference level will be missed from the figures. In this case a

C3 - Delivering outcomes for customers

suitable minimum duration depends on the exact methodology used but may be 30 or even 15 minutes. If logging is carried out at times when low pressures are unlikely to be detected because demand is low, the results cannot be used to confirm zero returns.

Common services

Companies should establish the numbers of properties supplied via common services from sample investigation of the distribution system. Many instances of low pressure in these situations are presently unreported. Not all of these properties have either loft tank storage or any water supply upstairs.

Companies are required to record the numbers of properties on common services that have received and continue to receive pressures below the reference level, and include these in the reported numbers.

Companies may use their own calculations, but the required pressure in the adjacent water main used to estimate properties affected should exceed those given in the table below. This table is intended to be a guide to the absolute minimum service acceptable over an hour (i.e. it is not based on an instantaneous peak flow). The calculations assume delivery of 9 l/minute upstairs to a combination tank (not in the loft) in the end property on a common service of half-inch bore. The calculations use the BS 6700 loading units (LU) basis, but at 3LUs per property (9 l/minute). The LU calculations on larger groups of properties (i.e. more than 100) give instantaneous flows of between 4 and 8 times the peak hour flow rates actually observed on local distribution systems, subject to leakage and hose pipe assumptions. Accordingly, the use of 3LUs per property is taken as an acceptable minimum.

Number of properties fed from one direction on common service	Pressure (in head) required in adjacent main			
	Half-inch communication pipe		Three-quarter-inch communication pipe	
	Short side ³⁶	Long side	Short side	Long side
2	10	11	10	11
3	12	14	11	13
4	15	18	13	16
5	19	23	16	20
6	25	29	21	24
7	30	35	25	28
8	37	42	31	33
9	45	51	38	40
10	54	61	46	48

Note: if delivery to a loft tank is taken to be the minimum acceptable service, not less than 3 m pressure should be added to the above tabulated values.

The values calculated for two properties are theoretical: for delivery to a loft, the usual surrogate of 15 m head to a single property should be taken as a minimum reference level.

³⁶ Short side and long side refer to the length of supply pipes from properties to water mains which are usually not laid down the middle of a road.

C3 - Delivering outcomes for customers

The section on the reference level refers to the need for companies to use a higher flow rate in the reference level for common services and sets out the criteria for determining appropriate flows in these circumstances.

These criteria are not intended to extend the company's responsibility to solving problems caused by deficiencies in customers' pipes. Its aim is to ensure that there is a proper recognition of pressure and flow problems which affect properties sharing common services, where there is a deficiency in the part of the apparatus which is the company's responsibility (e.g. an undersized communication pipe which is unable to provide sufficient flow).

Properties with the common service pipes can be split into four categories:

1. company's and customer's apparatus are adequate:
 - no problems with pressure or flow, nothing to report;
2. company's apparatus adequate, but customer's pipework is deficient:
 - pressure and/or flow problems are not reportable because company pipes are able to provide sufficient pressure and flow to the limit of company responsibility;
3. company's apparatus is inadequate but customer's pipework is adequate:
 - pressure and/or flow problems which are reportable because there is a deficiency in the company's apparatus; and
4. both the company's and the customer's apparatus are inadequate:
 - pressure and/or flow problems are reportable.

Of these four categories, only the last two fall within the definition of properties at risk of receiving low pressure.

Ofwat recognises that in cases covered by the final category it may not always be sensible for the company to take unilateral action to solve the problem unless the customer takes some action to improve their own pipework. Nevertheless, these problems must be included in the reported figure. If significant, we should note the number of properties which are below the reference level but that we cannot solve because there are also defects in the customer's part of the system.

4. Company performance commitment PC09: Turbidity performance at treatment works

Short definition

The number of operational potable water treatment works whose turbidity 95th percentile equals or exceeds a 0.5 NTU (Nephelometric Turbidity Units) threshold.

Measurement

This performance commitment is measured by:

- Units: number of failures
- Frequency of measurement: annual.

Mitigation / exceptions

Only routine regulatory samples taken at the final water compliance taps at WTWs and that are reported in our regulatory returns to the DWI are used in the calculation of this metric.

Any other information relating to the performance commitment

C3 - Delivering outcomes for customers

This was an AMP6 sub-indicator to our Asset Reliability (Non-Infrastructure) performance commitment. It is now being reported as a separate performance commitment.

This reporting definition is aligned to Ofwat's guidance from June Return 2011 (a submission document that Ofwat required from companies that has since been superseded by the informed reported as part of the Company's Annual Performance Report).

The measure enables the company to consider the following:

- the use of turbidity as a measure to provide assurance of the optimal operation of filter performance, where filtration is used to address identified risks associated with chlorine resistant pathogens in the source water;
- the impact of turbidity on the efficiency of disinfection processes; and
- the effect that turbidity has on the aesthetics of the treated water.

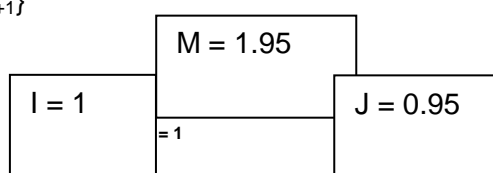
Full definition of the performance commitment

Factors such as turbidity affect the effectiveness of disinfection. This metric measures the turbidity of water at our treatment works. It does so via the number of operational potable water treatment works whose turbidity 95th percentile equals or exceeds a 0.5 NTU (Nephelometric Turbidity Units) threshold. We calculate 95th percentile value using all data from regular routine sampling of final water from sources for the calendar year. By doing so, we are able to prevent undisinfected or partially disinfected water from being put into supply

To calculate 95 percentiles for works with sufficient numbers of samples and no long data gaps, we undertaken the following steps:

- Put the sample data in descending order: V1 (max), V2, V3 etc.
- Calculate $m = 0.05 * (\text{number of samples} + 1)$
- Split m : $m = i + j$ where i is an integer and $0 \leq j < 1$

$$95\%ile = \{(1-j) * V_i\} + \{j * V_{i+1}\}$$



5. Company performance commitment PC10: Unplanned maintenance – non-infrastructure

Short definition

The total unplanned non-infrastructure maintenance jobs, required as a result of equipment failure or reduced asset performance.

Measurement

This performance commitment is measured by:

- Units: number of jobs
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This was an AMP6 sub-indicator to our Asset Reliability (Non-Infrastructure) performance commitment. It is now being reported as a separate performance commitment.

This reporting definition is aligned to the definition used on [Ofwat's website](#) for asset health performance commitments.

Full definition of the performance commitment

The number of unplanned maintenance events occurring as a result of equipment failure or reduced asset performance.

The data collected is a count of all the unplanned jobs completed (with a completed work order). It is not a count of investigations where nothing was done, or minor jobs carried out as a result of an inspection which are not recorded as a work order.

The data includes all water non-infrastructure assets, including: water treatment works, pumping stations (on the network), and any other non-infrastructure asset. The data also includes all planned-reactive jobs, that is, anything strategically planned for reactive maintenance, i.e., 'run to fail' assets, etc.

Unplanned maintenance on all assets is included in the data regardless of asset criticality, this ensures the entire asset base is captured.

6. Company performance commitment PC11: Population at Risk from Asset Failure

Short definition

The total number of customers in areas of population greater than 10,000³⁷ people who are at risk of interruption to their water supply in the event of failure of a critical asset that supplies them.

Measurement

This performance commitment is measured by:

- Units: number of people (population)
- Frequency of measurement: annual.

Mitigation / exceptions

³⁷ It is important to note that the target figures are population counts derived during the PR19 process and which were applicable at the time. For the purposes of this performance commitment, these figures have been fixed from the time they were compiled. It is the case that, in practice, population figures will change with time. This methodology tracks the current populations, but the figures reported for the performance commitment are the historic populations as derived during the PR19 process.

N/A

Any other information relating to the performance commitment

This is a revision of our AMP6 performance commitment for AMP7³⁸. This metric relates to population in centres >10,000 at risk of asset failure at the network level, this includes mains and pipes. This is therefore a threshold based metric, based on the potential duration and magnitude of interruptions associated with critical assets that can directly result in a supply failure if it is rendered inoperable through an asset failure, and identifies which of these assets are carrying an unacceptable level of risk.

Calculation of the target figures is based on current analysis of the impact of planned intervention on each population centre. These do not take account of the impact of population growth on the actual populations supplied within each population centre. The annual figures reported for this performance commitment are therefore based on the population as at 2017/18 and not adjusted for population growth.

Full definition of the performance commitment

This measure relates to populations in centres of greater than 10,000 who are at risk of failure of the asset serving them (providing less than 3m water pressure for a duration greater than 30 minutes). The risk relates to water supply interruptions over 24 hours in the event that a critical asset (either pumping station, reservoir or critical mains) is unable to operate or a source is contaminated. This is measured as number of people (population).

This metric reflects the risk of large scale interruptions to supply and represents population centres that have inadequate resilience to disruptive events outside of normal operating limits, where:

- There is no redundancy/backup (as the service disruption is a long-term interruption to supply >24 hours);
- There is a provable and non-trivial risk from an identifiable hazard that means the system cannot be repaired within a set timescale (e.g. treatment works in flood zone, inaccessible trunk main);
- More than a given threshold of customers would be affected if the system fails (in population centres >10,000); and
- The risk assumes there is absolutely no connection to any other supply source.

The outcome will be achieved based on independent third party verification of the network modelling and operational evidence that the customers are protected from the known effect. This will include a review of operational incidents where the disruption is greater than 24 hours after the outcome delivery has been claimed.

The data used to identify populations at risk are sourced from GIS (Small world GIS) software queries of supply zones, coupled with hydraulic model outputs of population supplied by existing water supply systems and the modelled impact of contingency or alternative supplies. This data is fixed for the purposes of calculating the performance commitment, with

³⁸ Our AMP6 performance commitment of Population in centres >25,000 at risk from above ground asset failure related to a single source of supply - water treatment works (and it did not include mains). This is resolved in AMP6 by the Southern Strategic main with a small residual population not protected in line with the FD14 target.

C3 - Delivering outcomes for customers

the alternative schemes and population from this calculation been used to calculate for each scheme delivered what the delivery against the performance commitment is.

	Length of Mains at Risk (km)	Length of Mains to Mitigate (km)	Number Dynamic Valves to Mitigate	Number Manual Valves to Mitigate	Number Turbidity Monitors to Mitigate	Population Benefiting (000s)
Mains Criticality - Population >=25 000 (connections 10 823)	16.3	2.0	9	11	7	417
Mains Criticality - Population >=10 000 (connections 4329)	75.3	11.0	48	63	35	707
Glastonbury and Street Vulnerable Mains (>= 25 000 population)	12.8	8.0	1	9	0	28

Analysis of our trunk mains and distribution network has been undertaken to determine those customers at risk of loss of supply in the event of a significant event in the network. The outcome of this analysis has identified properties at risk as shown in Figure 10-1 which categorises properties into:

- Population centres greater than 25,000 (not including Glastonbury / Street);
- Population centres greater than 25,000 (Glastonbury / Street); and
- Population centres greater than 10,000.

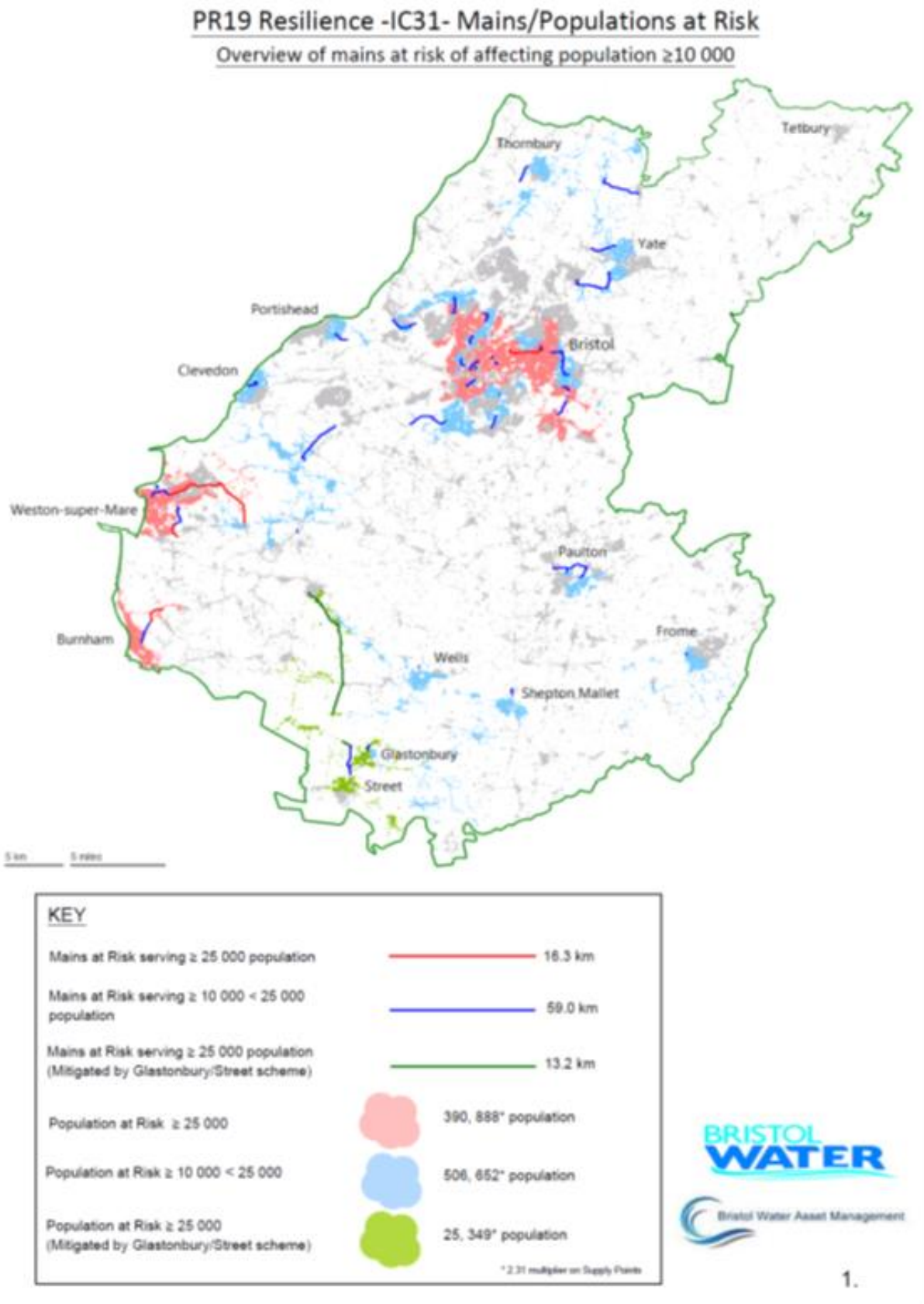


Figure 10-1 - Population Centres at Risk of Asset Failure

Outcome: Excellent customer experiences

We aim for excellent experiences for our customers and always provide an effective response that builds trust. Our services are inclusive, being affordable for all and meet individual customer needs, including those in vulnerable circumstances.

7. Company performance commitment PC14: Percentage of customers in water poverty

Short definition

The percentage of customers within our supply area for whom their water bill represents more than 2% of their disposable income, defined as gross income less income tax.

Measurement

This performance commitment is measured by:

- Units: % of customers
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a continuation of an AMP6 performance commitment of the same name.

We recognise that affordability is a major concern for some of our customers; we were one of the first water companies to introduce a company social tariff.

We monitor our performance in helping those customers on the lowest incomes and experiencing the most serious financial difficulties by calculating and tracking the percentage of customers in 'water poverty'.

This measure allows us to understand the impact of our bills on our customers. Using this measure, we are able to offer advice, assistance schemes and capped tariffs, known as 'social tariffs' (including our Restart scheme, Assist tariff, WaterSure Plus and Pension credit tariff) to customers who fall within this category. This measure then also allows us to evaluate the success of our tariffs and assistance schemes for customers who are experiencing difficulty paying their bills. To calculate this we use a population analytics model to estimate the gross percentage of customers in water poverty, and then deduct those customers who we support through our Assist social tariff, in order to assess net water poverty.

Full definition of the performance commitment³⁹

³⁹ This definition has been amended in order to clarify how this performance commitment is impacted by the Company's Assist tariff

C3 - Delivering outcomes for customers

We have defined water poverty as the percentage of households within its supply area for whom their water charges represent more than 2% of their disposable income, defined as gross income less income tax.

This is different from the definition used by the Government and organisations such as the Joseph Rowntree Foundation and CCWater – that definition relates to the percentage of customers for whom their water bill, covering water and sewerage charges, represents more than 3% of their disposable income after housing costs and income tax. Because Bristol Water does not have access to the housing costs used in the Government's definition, we have had to use an alternative definition, and we took advice from one of our main local Citizens Advice Bureau to determine how best to do this when it first introduced the measure ahead of the PR14 Final Determination.

We use a model supplied by a population analytics company to estimate the disposable income of each of our customers and compare against their most recent water bill. This determines the gross percentage of customers in water poverty. Using this model we deduct customers who we support through our Assist social tariff, in order to assess net water poverty. This provides us with the reportable figure each year.

8. Company performance commitment PC15: Value for money

Short definition

The percentage of customers within our supply are who consider that we provide good value-for-money.

Measurement

This performance commitment is measured by:

- Units: % respondents to survey
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a continuation of an AMP6 performance commitment of the same name.

Value for money is an important concept in measuring whether customers consider that the service that we provide is worth what they pay for it. Some customers struggle to make this assessment, often citing that they cannot compare because they cannot choose water supplier, but we have found the measure to be sufficiently well understood by most respondents to our surveys.

Full definition of the performance commitment⁴⁰

This metric measures the percentage of customers within our supply are who consider that we provide good value-for-money.

⁴⁰ Further information has provided on the survey methodology

C3 - Delivering outcomes for customers

This measure relates to the percentage of customers responding to the company's annual household customer tracking survey who consider that we provide good value-for-money, by either responding very good or good, after being asked the question 'Thinking about value for money, overall how would you rate Bristol Water in relation to the service they provide?' The survey would be conducted by phone, using a sample size of 1,000 customers, using random digit dialling (who may or may not have contacted us). Respondents would be given the following options:

- Very good
- Good
- Neither nor
- Poor
- Very poor
- Don't know

All people interviewed have to be a household customer of Bristol Water (this is asked at the start of the survey) and quotas are set on the system for age and gender to make sure that the sample is representative of the population. The quota controls are as follows:

Demographic ⁴¹	% of sample	Sample Sizes
Male	48	480
Female	52	520
Total	100%	1000
16 - 34	28%	280
35-54	36%	360
55+	36%	360
Total	100%	1000

The quota controls to determine the proportionate in each region are as follows:

Postcode	% of sample	No. of Interviews
BS	68	680
BA	17	190
GL	7	80
TA	8	70
Total	100	1000

Each telephone number will be tried at least three times until an interview is achieved, the respondent refuses to take part or three unsuccessful attempts have been made; fieldwork is conducted between 3pm and 9pm weekdays or at weekends.

The survey also includes relevant screening questions to ensure the respondent is not necessarily the person responsible for dealing with the water company, including paying bills but an adult resident of the area and water consumer.

9. Company performance commitment PC16: Percentage of satisfied vulnerable customers

Short definition

⁴¹ Population stats taken from Office for National Statistics for Local Authorities of Bath & North East Somerset; Bristol, Gloucestershire; North Somerset; Somerset; South Gloucestershire.

C3 - Delivering outcomes for customers

The percentage of customers within our supply area receiving vulnerability assistance who are satisfied with the assistance given.

Measurement

This performance commitment is measured by:

- Units: % satisfaction
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a new performance commitment for AMP7.

Vulnerability can take many forms. It could relate to age, numeracy or digital literacy, a change in circumstances such as losing a job, or the effect of financial strain on mental or physical health. Anyone can become vulnerable at any time in their lives, with both short and long-term consequences; vulnerability is transient. Our aim therefore is to:

- Deliver great customer service and customer care tailored to the individual;
- Offer a service that is inclusive and accessible to all; and
- Maximise opportunities for signposting and partnership working.

Full definition of the performance commitment

This metric measures the percentage of customers within our supply area receiving vulnerability assistance who are satisfied with the assistance given.

Defining vulnerability and identifying vulnerable customers is a challenge. The Safeguarding Vulnerable Groups Act 2006 (c. 47) section 59 gives a definition of a “vulnerable adult”. Using this vulnerable customer would include those:

- (a) In residential accommodation. This could be in connection with any care or nursing, or someone who is attending a special school;
- (b) In sheltered housing;
- (c) In receipt of domiciliary care;
- (d) In receipt of any form of health care - including treatment, therapy or palliative care of any description;
- (e) Detained in lawful custody;
- (f) In receipt of welfare services. This could be due to particular needs because of age; any form of disability; a physical or mental problem; or an expectant or nursing mother; and
- (g) Requiring assistance in the conduct of their affairs, for example enduring power of attorney.

We recognise that consumer vulnerability is a much more complex and dynamic concept than can be captured in list form. Vulnerability is often multi-dimensional and can be a transient state that affects people at different periods of time, or it can be long-term in effect. Customers’ personal circumstances are not the only factors to consider as external events, or the actions or processes of companies, can equally contribute to a risk of vulnerability.

C3 - Delivering outcomes for customers

In 2015 paper on consumer vulnerability the Financial Conduct Authority (FCA)⁴² gave the following working definition: “A vulnerable consumer is someone who, due to their personal circumstances, is especially susceptible to detriment, particularly when a firm is not acting with appropriate levels of care.”

Vulnerability assistance includes customers receiving support through our Priority Services Register (PSR), which is our register of vulnerable customers. Our PSR offers extra support to customers with additional needs. It includes communications in Braille, large print or a language other than English, a password system to help protect against bogus callers and extra assistance in the event of water supply interruptions. The register means we can identify and respond quickly to the needs of customers who require extra care and we are able to offer extra consideration for those who are older, have a disability or have additional needs.

We will measure our ability to get this right by ensuring that every customer registered on the PSR will receive a customer care call once a year to ensure that their needs are still being met (this is in addition to any operational calls that would take place during a response to a major incident). During the call customers will be asked to rate their satisfaction in respect of the assistance given. They are asked to rate ‘thinking about the assistance given, overall how would you rate Bristol Water in relation to the services they provide?’

This measure captures satisfaction from a random sample of all of our Priority Services Register (PSR) customers. It is calculated as the percentage of respondents (taken from a random sample of 300 of the total number of calls made) who answered ‘very good’ or ‘fairly good’ (using a five point scale). This involves adding together those who rate it very and fairly good and dividing by the total respondents (excluding those who answer don’t know and refused), expressed as a percentage of the number of respondents.

10. Company performance commitment PC17: Void properties

Short definition

Average total number of household properties, within the supply area, which are connected to our water supply but do not receive a charge, as there are no occupants, as a percentage of the total number of connected households.

Measurement

This performance commitment is measured by:

- Units: % void rate per connected properties
- Frequency of measurement: annual.

Mitigation / exceptions

This is consistent with the definition used to report void numbers within our Annual Return. It excludes properties which are temporarily recorded as void on our systems when they enter into our change of occupancy metering programme (and do not receive a bill until the date the meter is fitted).

Any other information relating to the performance commitment

⁴² FCA - Occasional Paper No. 8, Consumer Vulnerability: Executive Summary, February 2015

C3 - Delivering outcomes for customers

This is a new performance commitment for AMP7. This reporting definition is aligned to the definition of void properties used in Ofwat's Annual Performance Report guidance.

There are a number of external drivers for voids, such as:

- Potential changes in land/development/housing usage can impact void density. For example, a residence that once received a single bill may be turned into multiple self-contained apartments thus resulting in the property having multiple new occupiers, potentially with separate bills;
- Economic factors – deprivation levels are likely to affect whether the customer decides to provide accurate information on the occupancy status of a property; and
- Social factors – higher levels of transience would make it more difficult to keep track of change of occupancy and manage voids.

This performance commitment is closely aligned to our meter penetration performance.

Full definition of the performance commitment⁴³

In line with RAG 4.07 we define voids as household properties that are connected for water services that do not receive a charge because they are classed as vacant or “un-occupied”. The average total number of such properties is included within our Annual Performance Report. This is in line with the definition in RAG 4.07 that defines void properties as the:

“Average total number of household properties, within the supply area, which are connected for either a water service only, a wastewater service only or both services but do not receive a charge, as there are no occupants. This should not include properties that do not receive a bill because it would be uneconomical to do so. Note that a property connected for both services that is not occupied, only counts as one void property.”

This performance commitment is closely aligned to our meter penetration performance; void rates tend to be higher for un-metered properties compared to those which are metered. By increasing the proportion of metered properties through our metering programme, we aim to further improve upon the percentage of void properties in our supply area.

⁴³ This performance commitment was still under development at the time of the early submission; this is our finalised definition

Outcome: Local community and environmental resilience

We will help build local community and environmental resilience. This means that we play an active role in supporting the community, engaging with customers and stakeholders and that we contribute to a thriving and diverse natural environment through our policies and actions. We will save water, and help others to do so.

11. Company performance commitment PC20: Meter penetration

Short definition

The proportion of total household properties of billed customers that are charged for water on a measured basis.

Measurement

This performance commitment is measured by:

- Units: % of properties (at year end)
- Frequency of measurement: annual (cumulative – annual assessment based on cumulative meters installed)⁴⁴.

The measurement of this performance commitment will take place annually. The incentive will be assessed based on performance each year over the period 2020 to 2025.

Mitigation / exceptions⁴⁵

This measure includes household properties. Non-household, void properties and multiple properties served by a single meter are excluded. The definitions are provided below:

- Household properties: those not eligible for the business retail market .
- Non-household properties: properties that are eligible for the business retail market, such as businesses, charities and public sector organisations.
- Void properties: household properties, within the supply area, which are connected to our water supply but do not receive a charge, as there are no occupants (as per the definition used for our 'Void Properties' performance commitment).
- Multiple properties served by a single meter: this is one metered supply point (and one household property) as this reflects the billed customer (by us, as opposed to a reseller).

Any other information relating to the performance commitment

This is a continuation of an AMP6 performance commitment of the same name.

Metering is widely regarded as the fairest way to pay for water. We do not have the power to impose compulsory metering but we continue to see metering as an important part of our strategy to provide a resilient service, both in the short and long term. We recognise we need to continue our activities to encourage the uptake of meter installation (which helps reduce demand for water and improves household water efficiency). Metering is therefore an

⁴⁴ This frequency of measurement has been amended to clarify that the frequency is based on the cumulative number of metered installed

⁴⁵ Further information on household properties and the exempted properties have been added since the early submission

C3 - Delivering outcomes for customers

integral part of our draft Water Resources Management Plan (WRMP19), the company's plan to meet the changing demand for water between now and 2045. It is part of our approach to working closely with customers to help reduce demand for water.

Customers on a metered tariff generally pay less than those on an unmetered tariff and have a financial incentive to make efficient use of water in their homes. Water metering is also part of the solution to reducing demand for water and forms an important part of helping customers understand their water use. We encourage our customers to be more efficient in the way they use water by increasing the number of customers who are billed based on their actual consumption of water.

Full benefits of a water meter:

- Customers could save up to £100 a year on your water bill;
- Customers will probably save money on their energy bill too. About 25% of their energy bill is for heating water;
- It helps us detect leaks much quicker;
- Having a water meter helps to save water; and
- Customers only pay for what they use.

Full definition of the performance commitment

We measure this by meter penetration, expressed as the percentage, of the total number of customers, of billed household properties charged according to their metered consumption, using data from our household billing system, Rapid (at the end of each financial year, taken at 31 March).

12. Company performance commitment PC21: Raw water quality of sources⁴⁶

Short definition

An assessment of the company's progress in implementing catchment management of nutrients across its catchments. The measure relates to the level of nutrient loss reduction, modelled as kg of phosphorus not lost to the environment as a result of the interventions taken up by farmers across source catchments.

Measurement

This performance commitment is measured by:

- Units: Kg of Phosphorus loss reduction achieved by Bristol Water scheme
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

⁴⁶ This definition has been amended to clarify how the measurement is different to the AMP6 performance commitment of the same name.

C3 - Delivering outcomes for customers

While it shares the same name, this performance commitment is a revision of its AMP6 equivalent. The proposed AMP7 methodology, based on kilogrammes of phosphorus not lost to the environment as a result of our work with farmers, will more directly measure our delivery of catchment management than the AMP6 methodology, which is based on frequency of algal blooms in reservoirs.

The quality of our water sources, particularly in the Mendip reservoirs, can be impacted by deterioration due to nutrients and sediment that can enter the watercourses from land and activities in the catchment area of the source. We have been working with local landholders and farmers to identify where these issues can be addressed.

Full definition of the performance commitment

This metric is an assessment of the company's progress in implementing catchment management of nutrients across its catchments. The measure relates to the level of nutrient loss reduction, modelled as kg of phosphorus not lost to the environment based on the interventions taken up by farmers. These interventions are those that farmers have taken up as a result of encouragement and support delivered by the Mendip Lakes Partnership, led by Bristol Water, and by Bristol Water in delivering the Metaldehyde Action Project on the Gloucestershire Cam and Frome catchments.

Target delivery is based on that which has been achieved in AMP6 across the Mendip reservoir catchments (Chew, Blagdon, Cheddar), over two years; 2016/17 and 2017/18 – the first two whole years over which the Bristol Water Catchment Grant Scheme has been run.

The assessment of progress against the target will be made using a recognised model (Farmscoper) to calculate mass of nutrients saved according to interventions taken up. Farmscoper predicts pollutant losses from farms. In calculating these predictions it can take into account interventions which have been put in place to reduce pollutant losses. We are proposing to use Farmscoper to calculate changes to pollutant losses based on the interventions put in place as a result of our catchment management programme. The same model is used to assess the baseline loss of phosphorus across the catchments.

Each year, interventions delivered will be analysed in terms of the farm types, locations and sizes on which they have been implemented over the course of the year. These interventions may include provision of nutrient management plans, implementation of overwintering cover crops, and grassland aeration, as well as more infrastructure related schemes such as roofing of livestock yards.

Data on these interventions will on an annual basis be fed into the Farmscoper model to estimate the change to pollutant loss across the catchment. The Farmscoper model is then parameterised to take into account regional rainfall, farm type, farm size, and soil properties, currently based on 2015 farm census data. The model will then output an estimate of the total nutrient loss reduction achieved through implementation of the interventions

13. Company performance commitment PC22: Biodiversity Index⁴⁷

Short definition

A metric that enables the company to quantify enhancements made to the natural environment across company sites. The metric is produced by calculating the cumulative hectares and meters of habitat (e.g. grassland or hedges) and the quality of this habitat.

Measurement

This performance commitment is measured by:

- Units: Biodiversity Index (numbers)
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a continuation of our AMP6 performance commitment of the same name. This builds on the technical changes to the reporting of our performance that Ofwat agreed to in March 2018 (in particular converting performance from text into a transparent numeric calculation).

This metric has been developed to monitor our effect on the natural environment. It helps the company to develop its environmental resilience by setting a target for improvements. The Biodiversity Index (BI) approach provides the company with a method of protecting and enhancing the natural environment by first measuring the current value of each of our sites and then quantifying the potential impacts of our actions on the measured value of these sites.

During operational, maintenance and construction works, and appropriate amount of offsetting must take place to ensure there is no net loss to the natural environment or features of the company's. The company must then provide enhancement works on and offsite to ensure there is an environmental gain. The Biodiversity Index assessment will quantify the mitigation and enhancements.

Some of the habitat protection and improvement work that has been delivered in AMP6 includes, but is not limited to:

- Increasing the species diversity of trees on our site;
- Planting wildflower banks and native species hedgerows;
- Adapting our hay cuts of unimproved grassland to allow grasses and wildflowers to bloom; and
- Translocating protected vegetation such as bee orchids and pignuts during construction.

Full definition of the performance commitment

A metric that enables the company to quantify enhancements made to the natural environment across company sites. The metric is produced by calculating the cumulative

⁴⁷ This definition has been amended to clarify how the overall Biodiversity Index score will be measured and verified on an annual basis and how targets will be measured, assessed and assured annually

C3 - Delivering outcomes for customers

hectares and meters of habitat (e.g. grassland or hedges) and the quality of this habitat. The Biodiversity Index is therefore a tool for the following purposes:

- To establish a common standard valuation tool for the natural environment and environmental improvements delivered ;
- To assess the biological value of the natural environment and environmental improvements delivered;
- To drive forward an approach across the company to deliver environmental mitigation and enhancements, ensuring that there is net gain for the natural environment which moves the company beyond its basic statutory duties; and
- To demonstrate in a transparent way to customers and stakeholders, where environmental enhancements and habitat works have ensured no net loss and provided a net gain-

Since 2015 our stewardship of the natural environment and development of the Biodiversity Index has demonstrated that Bristol Water has genuine enthusiasm for the protection and enhancement of the natural environment. We want to build upon the improvements made in AMP6 and go even further to deliver net gain and quantify the ecosystem services our natural environment provides. We also recognise the constraints of our associated operational activities, and the costs for stretching ourselves beyond the increase of 1 BI point a year. An increase in BI points will demonstrate enhancements and improvements delivered across our sites and we have identified the need to balance this delivery against the overall wider priorities of our customers.

Operational activities and constraints restrict enhancement works or expansion of habitats (therefore restricting an increase in Biodiversity Index points earned from the increase in quantity of a habitat or increasing the quality of a habitat). However opportunities considered for AMP7 improvements can be found in the Environment Investment Case (IC34) which also lists the Water Industry National Environment Programme (WINEP) obligations to be delivered.

Operational activities and production projects delivery will have a negative impact on the BI score in AMP7, as habitats and/or environmental features will be impacted or lost. The BI score will likely decrease in AMP7 if the Company does not delivery statutory maintenance work and the BI score would remain static if only statutory maintenance work was delivered. Therefore, future BI targets must account for negative impacts and resources to maintain designated site habitats in a stable condition. Without the prevention of no-net loss habitats would deteriorate and equate to deterioration in the company's BI score. Example of some of the statutory obligations and operational practicalities' which impede unconstrained BI improvements are:

- The Reservoir Act 1975
 - No planting of deep rooting plants on embankments
 - Maintain low cut grass on embankments to enable safety inspections of embankment structures;
- Land in agricultural use – tenancy agreements and considerations prevent swift changes in land use or land management;
- Network asset constraints – where pipe assets cross sites it is not possible to plant deeper rooted plants of species which may need to be removed during repairs and inspection work;
- Renewable energy initiatives – Ecological requests must be considered in balance with opportunities to install further solar arrays. This initiative potentially reduces available grassland habitats for BI development;

C3 - Delivering outcomes for customers

- Resilient and timely responses to emergencies and issues – reducing the risk of conflict between protected species and the requirement to access a site or asset to carry out emergency works. The present regulatory constraints for moving a protected species would delay emergency remedial work; and
- Bristol Water will not be acquiring new landholdings in AMP7.

To deliver habitat works that achieve 52 BI points (on average 10.4 BI points a year) over AMP7 is currently a challenging ambition due to the limited opportunities available. To achieve just 1 BI point a year (as the targets in AMP6 have been set at) the company would need to look to deliver the following generic activities:

- Amend grassland management practices (e.g. periodic hay cut) of 0.25ha unimproved grasslands to upgrade conditions status from moderate to good.
- Plant 125m of new native species-rich hedgerow.
- Convert 0.25ha of semi-improved neutral grassland to woodland comprised of broad-leaved species.
- Deliver habitat management to 0.25ha of poor condition Woodland to bring the condition up to moderate.

In AMP7 Bristol Water will be delivering on its statutory duty to maintain its designated sites in Favourable condition and mitigate the changes of operational activities, climate change and changes in recreational and land uses. This maintenance work (of our designated sites) will not claim BI points but it will require significant resources to deliver the maintenance and mitigate negative impacts to habitats. Bristol Water will formally consult with Natural England when planning enhancement works to its designated sites to determine whether proposals would meet net-gain delivery and qualify for BI points accomplished. The external audit process will also provide verification on the BI points achieved and claimed each year of AMP7.

This performance commitment facilitates the appraisal of the company's environmental assets and enables a strategic programme of habitat improvement works to be delivered. Bristol Water not only aspires to deliver net gain for the environment but to even further beyond this and develop additional natural capital accounting approaches to facilitate ecosystems services delivery in AMP8.

The Biodiversity Index metric methodology uses a calculator which has been developed in partnership with Bristol Water's Customer Challenge Panel, Bristol Water and Ecosulis. The metric is defined by:

[Hectares of priority habitat] x [grade of this habitat] x [distinctiveness score of this habitat]

Plus:

[Meters of linear priority habitat] x [grade of this habitat] x [distinctiveness score of this habitat]

Ecological walkovers of land acquired for pipeline construction and company sites are undertaken to obtain a baseline Biodiversity Index score. These walkovers survey the habitat type, the quantity of each habitat and condition of each habitat. This survey data is recorded by means of a Habitat Value Assessment (HVA) and Linear Habitat Value Assessment (LHV). The Biodiversity Index Calculator then calculates this data against a habitat distinctiveness score to generate the Biodiversity Index score for this site. Environmental

C3 - Delivering outcomes for customers

changes and enhancements can then be calculated and a forecast score can be generated for a site.

Bristol Water will carry out regular surveys at its sites to assess the condition of the natural environment and habitat features. The Biodiversity Index metric will quantify the habitats available and with all site scores aggregated Bristol Water will be able to provide an overall Biodiversity Index score.

During pipelaying and maintenance works on land which is not company-owned, Bristol Water has a policy to follow the Biodiversity Index approach to maintain and enhance the natural environment of these sites. This work will often involve working in partnership with landowners and other environmental charities and organisations. Our Biodiversity Index approach has for example been adopted along the 2017-2018 Southern Resilience Scheme project, where environmental impacts were unavoidable. Enhancements have been provided and a legacy of positive environmental work and community engagement has been delivered.

14. Company performance commitment PC23: Waste disposal compliance

Short definition

The percentage compliance as per by the number of Bristol Water samples taken of discharged trade effluent from designated company sample points that meet the consent requirements in the Environment Agency permits.

Measurement

This performance commitment is measured by:

- Units: % waste disposal compliance
- Frequency of measurement: annual (assessed on a calendar year basis).

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a continuation of an AMP6 performance commitment of the same name.

The environmental permitting regulations (2010) created a new framework for the management of discharges from the company's sites to ensure that they are consistent with a sustainable environmental impact.

Full definition of the performance commitment

This is an annual percentage compliance metric, which acts as a proxy measure for our management of environmental risk. It is measured per calendar year on EA sample results of discharged trade effluent from designated Company sample points that meet the consent requirements in the Environment Agency permits.

Samples are taken at the following sites:

- Alderley TW to Ozleworth stream;
- Banwell TW to River Lox Yeo ;

C3 - Delivering outcomes for customers

- Barrow TW to Eel Trap head of Faireywell stream;
- Barrow TW to Reed Bed outlet;
- Barrow supernatant return to Reservoir 3;
- Barrow instrument drain from New Reservoir to tributary of Land Yeo;
- Charterhouse TW to tributary of Cheddar Yeo;
- Chelvey TW to River Kenn;
- Frome TW to Egford Brook;
- Littleton TW to Severn Estuary;
- Oldford TW to River Frome;
- Purton TW to Severn Estuary;
- Rowberrow to Tower Head brook;
- Sherborne TW to Sherborne Stream via Lamella;
- Sherborne instrument drain to Sherborne Stream;
- Shipton Moyne TW to Fosseway ditch; and
- Stowey TW to Moorledge stream.

15. Company performance commitment PC24: Water Industry National Environment⁴⁸

The metric will measure compliance with requirements of the Water Industry National Environment Programme (WINEP). The company commits to deliver each requirement under the WINEP.

Measurement

This performance commitment is measured by:

- Units: % compliance with WINEP abstraction/flow related undertakings
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a new performance commitment for AMP7.

The Water Industry National Environment Programme (WINEP) sets out the actions the company needs to complete to meet our environmental obligations. Drivers for investment range from measures for protected areas, improvements to meet River Basin Management objectives and other local environmental priorities.

Full definition of the performance commitment

The metric will measure compliance with all requirements of the Water Industry National Environment Programme (WINEP). The company commits to deliver each requirement

⁴⁸ This definition has been amended to further explain how the delivery of investigations will be measured and reported, as well as clarify that the performance commitment covers the entire WINEP programme, not just elements of it as was initially proposed to Ofwat in May

C3 - Delivering outcomes for customers

under the WINEP, with an underperformance penalty for late delivery.

Measurement against this commitment will be equally weighted on compliance with delivery of each line of the WINEP by the regulatory dates, as signed off by Environment Agency and Natural England (each line will count equally towards the full percentage compliance rate). There are 51 lines on WINEP3:

- Investigations into eight abstractions to determine if current or future levels of abstraction (under existing licences) are likely to cause deterioration. Of these investigations, seven are scheduled to be completed by March 2022, and one by March 2025. The total deployable output of these abstractions is 69.28MI/d, although the volume at potential "risk" would be expected to be a maximum of the difference between recent actual abstraction and deployable output, a total of 5.9 MI/d.;
- Two implementation projects which are aimed to benefit sections of the Rivers Chew and Yeo downstream of Chew Valley and Blagdon Reservoirs (total WFD water body length of approximately 10.5km). These projects are to follow on from trials of potential improvement measures which are taking place AMP6, and are to be completed by December 2024. These projects will enable continued adaptive management of reservoir outflows to bring about ecological improvement in these watercourses;
- Three lines which require delivery of catchment management across three safeguard zones; Cheddar Springs, Egford Main and Sub-Well, and River Axe. These are scheduled for completion in December 2024;
- One line which requires a catchment investigation across the Forum Springs safeguard zone;
- Ten lines which require investigation and potential certification of discharges according to MCERTS requirements. These have completion dates ranging from March 2023 to March 2025;
- One line which requires installation of eel passage at Chew Valley Reservoir, with completion date March 2025;
- 23 lines requiring investigations and mitigation measures around invasive non-native species (INNS). The investigations are to be completed in March 2022, and the mitigations are for completion by March 2025;
- One line requiring implementation of a company-wide strategic Biodiversity Action Plan, completion March 2025;
- One line requiring investigation into effects of discharges from Barrow WTW on phosphorus concentrations in the River Land Yeo and potential effects on downstream SSSI, for completion in March 2022; and
- One line requiring investigation into the effectiveness of floating reedbeds, fringing wetland habitat and natural flood management techniques for nutrient removal to protect reservoir SSSIs, for completion in March 2025.

16. Company performance commitment PC25: Abstraction Incentive Mechanism (AIM)

Short definition

Reducing abstraction at Shipton Moyne system (an abstraction linked to environmentally-sensitive sites), at times where there is a risk of low river flows due to low local groundwater levels. Performance is measured as the MI reduction in abstraction during times of low groundwater level.

Measurement

C3 - Delivering outcomes for customers

This performance commitment is measured by:

- Units: Megalitres (MI)
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a new performance commitment for AMP7. Bristol Water was one of five companies (along with South West Water, Dŵr Cymru, Dee Valley Water and Bournemouth Water) which did not need to report on the AIM in the period 2016-20.

The AIM is intended to encourage companies to reduce the environmental impact of their abstractions on low river flows at sensitive sites. This is intended to improve the resilience of water supplies and ensure that it is provided in a more sustainable way. We have no sites that we have identified with the EA through WINEP as being eligible for AIM. There is one site identified which, beyond this, is suitable for inclusion in AIM.

Full definition of the performance commitment

This metric records the reduction in abstraction at sites where abstraction could lead to environmental deterioration.

Bristol Water has one environmentally-sensitive site (Shipton Moyne system) where the company is working in partnership with Wessex Water to prevent damage caused by abstraction from groundwater that would otherwise support local river flow. The primary cause of this environmental damage is the Wessex Water Malmesbury abstraction scheme, implemented subsequent to Bristol Water's abstractions from the aquifer, but in order to facilitate a reduction in environmental impact Bristol Water has permanently reduced its abstraction at the Shipton Moyne site and also operates a further reduction in abstraction from the site, depending on groundwater level as measured in the local Didmarton monitoring borehole. Where the groundwater level at the site falls below an agreed control curve, Bristol Water reduces its abstraction and the abstraction volume lost is replaced by a transfer from Wessex Water sources where abstraction does not have the same environmental impact as abstraction from the local aquifer. This transfer is metered and is subject to a volumetric charge to Bristol Water, thus providing a recorded measured volume of AIM performance.

Following the guidelines on the AIM, published by Ofwat in February 2016, we will report both our AIM performance and our normalised AIM performance.

AIM performance in MI = (average daily abstraction during period when flows are at or below the trigger threshold - baseline average daily abstraction during period when groundwater levels are at or below the trigger threshold) * length of period when groundwater levels are at or below the trigger threshold. As the reduction in abstraction is directly measured through the metered transfer of water from Wessex Water, this metered volume (less sweetening flow and additional support for resilience purposes) will be accounted as the AIM performance of the company.

Normalised AIM performance = AIM performance / (baseline average daily abstraction * length of period when groundwater levels are at or below the trigger threshold).

17. Company performance commitment PC26: Local community satisfaction⁴⁹

Short definition

The percentage of stakeholders within our supply area who are satisfied with the contribution we have made against our agreed commitments to the communities that we serve.

Measurement

This performance commitment is measured by:

- Units: % stakeholder satisfaction
- Frequency of measurement: annual.

Mitigation / exceptions

N/A

Any other information relating to the performance commitment

This is a new performance commitment for AMP7.

Community is a sense of something shared or in common between people. The communities that are referred to by Bristol Water comprise 3 types; our overall geographical supply area customer community, 'proximity communities' formed of customers living within a specific town or locality, and 'communities of interest' that comprise people with a shared interest or goal rather than a specific locality. Communities of interest that engage with Bristol Water tend to have an intent for societal benefit and desire something from us to support their cause. In return, they form part of our approach to delivering both customer and community excellence – including lower cost to customers in the long run. Examples of types of communities of interest include science, education, recreation, environment, heritage and charity.'

The survey would explain a number of agreed initiatives that Bristol Water is undertaking. The specific list of initiatives are commitments to the following:

- Our commitment to improving education and awareness of water issues: such as the number of pupils receiving a school talk on environmental matters/water efficiency or the number of initiatives undertaken as a result of the Bristol Water Youth Board;
- Our commitment to community leadership: such as the number of new water fountains opened within our supply area, which builds upon the success of the water fountains opened in Millennium Square and Queens Square;
- Our support for the Bristol Refill campaign;
- Our academic partnerships, such as our water efficiency test site with the University of West of England;
- Our contribution to the Bristol City Mayor and West of England Combined Authority Regional strategies. An example includes the Active Roadworks initiative;
- Our commitment to community engagement: such as the satisfaction with support to the festivals/ community events that the company has attended;
- Our commitment to improving our customer experiences and opportunities at our

⁴⁹ This performance commitment was still under development at the time of the early submission; this is our finalised definition

C3 - Delivering outcomes for customers

lakes and recreational facilities;

- Roll out the use of the Biodiversity Index toolkit where we work on land that we do not own;
- Work with Wessex Water to understand our combined environmental impact and to provide joint billing messages;
- Work with Bristol Waste on resource efficiency messages;
- Form an active network on best practice engagement on resource efficiency with west of England utility companies; and
- In expanding and aligning our vulnerability support with Wessex and other utilities.

Some of the activities that will be undertaken as part of the initiatives include:

Water Fountains

We will install free to use public drinking water fountains across the supply area. This will include working in partnership with local authorities and local businesses.

AMP7 in numbers:

- 15 new water fountains installed;
- 500,000 litres of water provided to customer free of charge;
- 1 million plastic bottle waste avoided;
- £300,000 value of savings for customers avoiding buying bottled water;
- 15 businesses engaged;
- 1 homeless charity engaged; and
- 500,000 social media reach.

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations
Water Fountains	High	High	Medium	Low

Spawn to be Wild

Spawn to be Wild is an environmental education project that aims to educate school children on the conservation of the European eel and about water efficiency. A 4 way partnership between Bristol Water, Avon Wildlife Trust, Bristol Avon Rivers Trust, Sustainable Eel Group

AMP7 in numbers:

- 1,500 school children directly educated through the project;
- 4,500 indirectly educated through wider involvement; and
- 15 schools involved every year; up to 75 schools across the AMP.

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations

Spawn to be Wild	Medium	High	High	Low
-------------------------	--------	------	------	-----

Youth Board

Bristol Water’s Youth Board brings the views of young adults into the decision-making we do to plan our future operations; allowing their voices to be heard at executive level and providing a unique opportunity for local young adults to kick-start a career in the world of business.

AMP7 in numbers:

- 100 young adults directly involved; and
- 1000 hours of water and environmental education.

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations
Youth Board	Medium	Medium	Low	Low

Lakeside Leisure

We will improve our recreational and amenity assets for all our community to enjoy. Our lakeside amenities are much loved by the community for the wellbeing they offer. A simple lakeside stroll and a bite to eat, or birdwatching, fishing, sailing or paddleboarding. The lakes are an important local asset for physical and mental health, as well as providing environmental education opportunities for all ages.

AMP7 in numbers:

- 1.5M leisure visits to our lakeside amenities;
- 3M hours of community wellbeing;
- 50 local community organisations engaged; and
- 12 local community partnerships delivering wellbeing services.

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations
Lakeside Leisure	High	High	Medium	Medium

Biodiversity Index

We will extend the use of our award winning Biodiversity Index approach to land not owned by Bristol Water. On land which is not owned by Bristol Water we will use our habitat assessment tool and encourage our project partners to follow the Biodiversity Index approach, to measure the natural capital and impact on the environment from the projects we deliver.

C3 - Delivering outcomes for customers

AMP7 in numbers:

- 25 projects benefitting from the Biodiversity Index approach and using the Biodiversity Index assessment tool for measuring impacts on the natural environment; and
- 10 new stakeholders introduced to the Biodiversity Index approach and tool.

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations
Biodiversity Index	Medium	Low	High	Low

Resource West

The West of England Resource Partnership brings together key resource management partners, working to develop the West of England area as a national hub for green growth. The partnership seeks to enable the West of England to thrive both in the immediate and long-term future, creating resilient communities and businesses by bringing together organisations already working to address issues of water, waste and energy efficiency and finding the synergies between these key issues in order to increase the opportunity for overall resource efficiency.

AMP7 in numbers:

- 5 way partnership: Bristol Water, Bristol Waste, Bristol Energy, the University of the West of England and the West of England Combined Authority; and
- Includes an international water & energy resource programme.

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations
Resource West	High	Medium	High	Low

Helping customers in vulnerable circumstances

We will proactively support customers in vulnerable circumstances in every aspect of the business. We are developing new ways to target customers in financial or circumstantial vulnerability to close the gap between need and support. Our priority services register for billing services will be combined with Wessex Water, simplifying the process for customers in vulnerable circumstances.

C3 - Delivering outcomes for customers

Performance indicator	Scale used	Total 2018	Total 2017	Change on total	Business 2018	Stakeholders 2018
Service received	Excellent, very good + good	86%	85%	+1%	86%	86%
Value for money	Very good + good	60%	54%	+6%	62%	42%
Comparison other utilities	Very well + quite well	60%	72%	-12%	59%	66%
Doing business with	Very good + good	70%	72%	-2%	70%	76%
Good reputation	Agree strongly + agree slightly	72%	66%	+6%	70%	81%
Rating as a Corporate citizen	Very good + good	62%	53%	+9%	61%	62%
Base size		289	418	283	250	39
Confidence interval		+/-5.8%	+/-4.8%	+/-5.8%	+/-6.2%	+/-15.7%

AMP7 in numbers:

- 12,000 more eligible customers supported;
- £500,000 funding to debt advise partners;
- 20+ debt advise agencies – offering holistic debt advice to customers;
- Double the number of customers on our Priority Services Register;
- 85% satisfaction from customers receiving vulnerability assistance;
- 0% customers in water poverty^[4]; and
- 100% of eligible customers supported^[5].

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations
Customers in vulnerable circumstances	Medium	Medium	Low	High

Full definition of the performance commitment

Bristol Water has developed an annual survey to assess the percentage of stakeholders within our supply area who are satisfied with the contribution we have made against our agreed commitments to the communities that we serve.

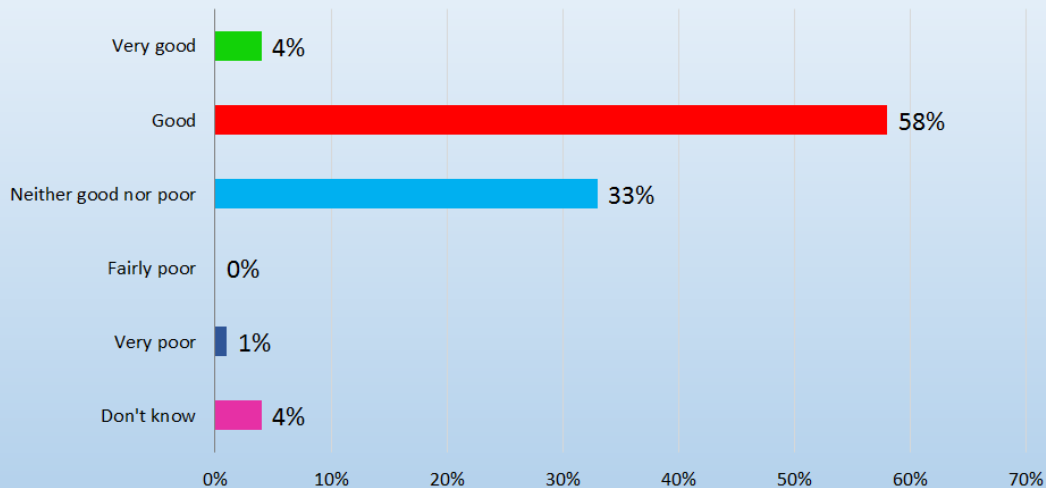
The company's current stakeholder survey covers c.90 key stakeholders and the 2019/20 baseline for this performance commitment reflects the survey question based on the average of "good reputation" and "rating as a corporate citizen":

^[4] Awaiting confirmation

^[5] Awaiting confirmation

Q8. How do you rate Bristol Water overall as a corporate citizen (so that means Corporate Social Responsibility, and their broader impact on the local community)?

(Base – Business and Stakeholder sample: 289)



- 62% rated Bristol Water as a very good or good corporate citizen. (53% in 2017)
- Business customer 62%, Stakeholders 61% (Very good or good)

The proposed survey question will amend this to include the specific initiatives and our published summary of progress with them, that will be used to replace this question with stakeholders. The baseline from this survey of 61% therefore demonstrates that the improvement expected to reach 75% in 2020 forms an appropriate baseline, with targets then set to achieve 5% above our customer satisfaction expectations (reflecting the “service received” and 5% above the “good reputation” stakeholder benchmarks. This reflects the strategy to be held to account and incentivised to go further on the impact on wellbeing of society by the initiatives we undertake in partnership with stakeholders.

A question from this survey related to the measure is: ‘how far do you agree that Bristol Water makes a positive contribution to the communities that it serves?’ The measure is calculated as the percentage of respondents who answered ‘very satisfied’ or ‘fairly satisfied’ (using a five point scale). This involves adding together those answered in this way and dividing by the total respondents (excluding those who refused).

The methodology allows for in-depth interviews as well as the survey result to be included in the overall rating. The in-depth interviews include the same survey questions and are undertaken independently.

The specific activities have been grouped into four key themes, which are:

- Community engagement and partnerships;
- Community wellbeing and learning;
- Improving our environment for communities; and
- Charities and customers in vulnerable situations.

C3 - Delivering outcomes for customers

How these initiatives and activities contribute to our four community themes are summarised in the table below:

ALIGNMENT MAPPING	Community engagement & partnerships	Community wellbeing and learning	Improving our environment for communities	Charities & customers in vulnerable situations
Water Bar	High	High	High	Low
Drinking water fountains	High	High	Medium	Low
Spawn to be Wild	Medium	High	High	Low
Youth Board	Medium	Medium	Low	Low
Lakeside leisure	High	High	Medium	Medium
Biodiversity Index	Medium	Low	High	Low
ResourceWest	High	Medium	High	Low
Vulnerability support	Medium	Medium	Low	High

We will publish a list of our progress against the initiatives and provide this information to stakeholders in advance of conducting the survey. The description of initiatives will be overseen by the Bristol Water Challenge Panel. The initiatives included in the survey would reflect the above. Changes to initiatives will be made and agreed as part of the process, and documented in the published report used with stakeholders as part of the survey. Changes documented will be agreed with the Bristol Water Challenge Panel and included in their Annual Report.

Appendix 4 - Summary of Incentive Rates Calculations for Preferred Plan

C3 - Delivering outcomes for customers

	Assumed asset life	Capex (Eks)	Opex (Eks)	2020/21	2021/22	2022/23	2023/24	2024/25	2020/21	2021/22	2022/23	2023/24	2024/25	2020/21	2021/22	2022/23	2023/24	2024/25	Max revenue	Service improvement	ODI improvement	Revenue per service unit (Eks)	WTP (Eks)	Penalty rate (Eks)	Reward rate (Eks)	Penalty rate on ODI improvement	Unit cost calculation	
Water Quality Compliance	18.5	3,513	0	20%	21%	20%	20%	19%	254	791	1,315	1,823	2,310	101	208	220	232	243	243	0.61	1.27	399	286.4	87		191	191	
Supply Interruptions	33.0	28,790	734	20%	21%	20%	20%	19%	2,426	7,508	12,484	17,322	22,002	1,226	1,779	1,894	2,005	2,113	2,113	12	10	172	205	119	102	103	203	
Mains Bursts	18.5	985	1	20%	21%	20%	20%	19%	71	222	369	511	647	30	60	63	66	69	69	9	9	8	3.278227	4	2	0	8	
Unplanned Outage	18.5	9,595	0	20%	21%	20%	20%	19%	695	2,161	3,592	4,977	6,309	275	568	601	633	663	663	2	0	381	£103.4	-87	52	110	381	
Drought	18.5		0	20%	21%	20%	20%	19%						0	0	0	0	0	0									
Discoloured contacts	18.5	15,261	1	20%	21%	20%	20%	19%	1,105	3,437	5,713	7,916	10,035	439	905	957	1,008	1,056	1,056	302	277	35	116	98	58	97	38	
Taste/Odour contacts	18.5	3,758	0	20%	21%	20%	20%	19%	272	847	1,407	1,950	2,472	108	222	235	248	260	260	105	105	25	169	157	84	157	25	
Low Pressure	25.0	655	84	20%	21%	20%	20%	19%	52	161	268	372	472	99	114	117	119	121	121	108	9	1	9.2	9	5	9	1	
WTW Turbidity	20.0	2,546	0	20%	21%	20%	20%	19%	189	589	978	1,356	1,720	68	141	150	158	167	167	0	0		£191.43		96			
Unplanned non-infa maintenance	18.5	12,464	-157	20%	21%	20%	20%	19%	903	2,807	4,666	6,466	8,196	200	580	623	664	704	704	164	704	4	£0.032	-2	0	-2	4	
Resilience	18.5	11,923	0	20%	21%	20%	20%	19%	864	2,686	4,464	6,185	7,841	342	706	747	786	824	824	626,004	542,886	0	£0.00471	0.0041	0.002	0.004	0.00132	
Leakage	25.0	11,812	1,317	20%	21%	20%	20%	19%	938	2,909	4,835	6,706	8,511	1,575	1,857	1,901	1,944	1,985	1,985	8	7	259	322	192	161	169	305	
Per capita consumption	18.5	739	0	20%	21%	20%	20%	19%	54	166	277	383	486	21	44	46	49	51	51	2	7	27	28	14	14	24	7	
Meter Penetration	60.0	7,527	0	20%	21%	20%	20%	19%	686	2,117	3,520	4,888	6,214	78	174	206	238	268	268	9	9	30	41	26	20	26	30	
Raw Water Quality	18.5	3,547	-80	20%	21%	20%	20%	19%	257	799	1,328	1,840	2,332	21	130	142	154	165	165	531	531	0	0.36761	0.212	0.18	0.212	0.311	
Biodiversity	50.0	2,542	-84	20%	21%	20%	20%	19%	227	702	1,168	1,621	2,061	-54	-17	-7	4	14	14	26	52	0.53	0.85	1	0	1	0.265	
Waste Disposal Compliance	18.5	104	10	20%	21%	20%	20%	19%	8	23	39	54	68	13	16	17	17	17	17								0	
Water Industry National Environment Programme C	18.5	6,112	-15	20%	21%	20%	20%	19%	443	1,377	2,288	3,171	4,019	160	347	368	388	408	408	100	100	4		2		2	4	
Local community satisfaction	10.0	3,247	50	20%	21%	20%	20%	19%	160	507	842	1,162	1,463	216	386	394	401	408	408	10	10	40.84	£41.54	21	21	20.42	40.84	
Abstraction Incentive Mechanism (AIM)	18.5	997	0	20%	21%	20%	20%	19%	72	225	373	517	656	29	59	62	66	69	69	0	2,843							

This table shows the standard calculation of incentive rates for the preferred plan. The commentary describes where alternative approaches have been taken (e.g. for asset health). Asset life assumptions and the total AMP7 capex and opex derived by outcome from the investment programme are used to calculate an RCV and revenue impact for each outcome. This is used to calculate a marginal cost. Two alternative service levels shown – either that reflected from the investment programme optimisation or the change reflected in the ODI. These only vary where there is a starting point assumption that changes, or there is an element where the investment cases on their own do not deliver a change in performance (e.g. taste and odour where a communication change that is expected to reduce costs is anticipated). This avoids double counting with WTP benefits that drive the improvement from the customers’ perspective. Where a service improvement is shown as zero (e.g. for AIM), this is because the incentive is not driven by investment and therefore attributed costs relate to other investments. In these cases the information above has not been used to set incentive rates.

C3 - Delivering outcomes for customers

	Costs	Benefits	unit cost divided by service change	unit cost / service total props	hh unit rates on service	unit cost divided by ODI rate	unit cost / ODI total props	hh unit rates on odi change	Unit cost per property	Unit cost used per property allocated via revenue %
Water Quality Compliance	243	174.2483	399.1906	0.721562	0.5765	191.2338	0.345667	0.2762	0.7216	0.5765
Supply Interruptions	2112.505	2129.632	172.2385	0.311332	0.2488	203.1255	0.367162	0.2934	0.3672	0.2934
Mains Bursts	69.49816	29.50404	7.779935	0.014063	0.0112	7.722018	0.013958	0.0112	0.0141	0.0112
Unplanned Outage	663	179.9718	381.1642	0.688978	0.5505	#DIV/0!	#DIV/0!	#DIV/0!	0.6890	0.5505
Drought	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Discoloured contacts	1056.295	31978.3	3.494364	0.006316	0.0050	38.18641	0.069024	0.0055	0.0690	0.0055
Taste/Odour contacts	259.8033	17752.13	2.471637	0.004468	0.0036	24.71637	0.044676	0.0036	0.0447	0.0036
Low Pressure	121	993.0633	1.124956	0.002033	0.0016	13.49218	0.024388	0.0195	0.0020	0.0016
WTW Turbidity	#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	167	0.301568	0.2410	0.3016	0.2410
Unplanned non-infa maintenance	704.2565	22.75505	4.304746	0.007781	0.0062	0.66502	0.001202	0.0014	0.0012	0.0014
Resilience	824.1945	2558.763	0.001317	2.38E-06	0.0000	0.001518	2.74E-06	0.0000	0.0000	0.0000
Leakage	1985.417	2090.938	258.72	0.467653	0.3737	305.4488	0.552118	0.4411	0.5521	0.4411
Per capita consumption	51.12153	194.3842	27.33772	0.049415	0.0395	7.303076	0.013201	0.0105	0.0132	0.0105
Meter Penetration	268.3579	372.0491	29.81092	0.053885	0.0431	29.48988	0.053305	0.0426	0.0533	0.0426
Raw Water Quality	165.0001	195.2013	0.310735	0.000562	0.0004	0.310735	0.000562	0.0004	0.0006	0.0004
Biodiveristy	13.78511	44.40124	0.530196	0.000958	0.0008	0.265098	0.000479	0.0004	0.0005	0.0004
Waste Disposal Compliance	#DIV/0!	0	#DIV/0!	#DIV/0!	#DIV/0!	17	0.03107	0.0248	0.0311	0.0248
Water Industry National Environment Programme Compliance	407.5209	0	4.075209	0.007366	0.0059	4.075209	0.007366	0.0059	0.0074	0.0059
Local community satisfaction	408.3806	415.4472	40.83806	0.073817	0.0590	40.83806	0.073817	0.0590	0.0738	0.0590
Abstraction Incentive Mechanism (AIM)	68.91694									

This table summarises the unit cost per property and the unit cost allocated via revenue. It identifies where optimised service changes were different from the ODI range of change in performance, where there were non-asset interventions (e.g. taste and odour) which means cost and benefit is being applied over a different range. We describe for each ODI how we translate this information into App1. A third party assurance report from ICS consulting describes the approach and checks we undertook to ensure that our calculations were thoroughly reviewed and

C3 - Delivering outcomes for customers

appropriate for the purposes of setting incentives. All of our assumptions are exposed, and a full calculation spreadsheet is available which also provides the audit trail to RORE and sensitivity calculations referred to in Section C6 for the balance of risk and return.

Appendix 5 – Summary of ODIs and Incentive Rates

Measure	PC Unit	ODI type	Outperformance Rate 1 £m/unit	Outperformance Rate 2 £m/unit	Underperformance Rate £m/unit
Water quality compliance	Compliance risk index	Under			0.086810
Supply Interruptions	Minutes / property / year	Out & under	0.102386	0.382289	0.103210
Mains Bursts	Mains bursts per 1,000km	Under			0.019450
Unplanned Outage	Proportion of unplanned outage of the total company production capacity	Under			0.381164
Risk of severe restrictions in a drought	Percentage of the customer population at risk of experiencing severe restrictions (for example, standpipes or rota cuts) in a 1-in-200 year drought, on average over 25 years.	NFI			
Customer contacts about water quality – appearance	Contacts per 1,000 people	Out & under	0.057803	0.125658	0.096512
Customer contacts about water quality – taste and smell	Contacts per 1,000 people	Out & under	0.084442	0.135711	0.156527
Properties at risk of receiving low pressure	No. of properties	Out & under	0.004600		0.008638

C3 - Delivering outcomes for customers

Measure	PC Unit	ODI type	Outperformance Rate 1 £m/unit	Outperformance Rate 2 £m/unit	Underperformance Rate £m/unit
Turbidity performance at treatment works	No. of failures	Under			0.834185
Unplanned maintenance – non-infrastructure	No. of jobs	Under			0.002660
Population at Risk from Asset Failure	No. of people (population)	Out & under	0.002357		0.003954
Customer measure of experience (C-MeX)	C-MeX score	Out & under			
Developer services measure of experience (D-MeX)	D-MeX score	Out & under			
Percentage of customers in water poverty	% customers in water poverty	NFI			
Value for money	% respondents to survey	NFI			
Percentage of satisfied vulnerable customers	% customer satisfaction	NFI			
Void properties	% connected properties	Out & under	0.022097		0.137409
Leakage	Megalitres per day (Ml/d)	Out & under	0.160841		0.168958
Per Capita Consumption (PCC)	Litres per head per day (l/h/d)	Out & under	0.013885		0.024118
Meter penetration	% metered supplies	Out & under	0.020442		0.026140
Raw Water Quality of Sources	Kg of P loss reduction achieved by Bristol Water scheme	Out & under	0.000184		0.000212

C3 - Delivering outcomes for customers

Measure	PC Unit	ODI type	Outperformance Rate 1 £m/unit	Outperformance Rate 2 £m/unit	Underperformance Rate £m/unit
Biodiversity Index	Biodiversity Index	Out & under	0.000427		0.000721
Waste disposal compliance	% waste disposal compliance	Under			0.008594
Water Industry National Environment Programme Compliance	% compliance with WINEP	Under			0.002038
Local community satisfaction	% stakeholder satisfaction	Out & under	0.020772		0.020419
Abstraction Incentive Mechanism (AIM)	Megalitres (MI)	Out & under	0.050000		0.050000