TA 6.1 Our approach to PCs and ODIs
Technical Annex

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Southern Water

Contents

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Purpose:

This technical annex sets out:

- How we selected our PCs in a systematic way from a long-list of candidate measures

- How we developed robust definitions for each of our selected PCs

- How we set stretching targets for each of our PCs

It also describes:

- How we selected which PCs should have financial ODIs

- How we used customer insight to derive and calibrate our ODIs

- Why we have set caps and collars

- Exceptions where we have followed an alternative approach

This is a Technical Annex to Chapter 6 of our Plan, Outcomes, PCs and ODIs. It should be read in conjunction with:

- Chapter 6 – Outcomes, PCs and ODIs

- TA.6.2 – Rationale for amending or discontinuing AMP6 PCs

- TA.6.3 – Detailed PC and ODI Proposals

The table below summarises the Ofwat tests that are addressed by the evidence presented in this Annex.

Table 1 - Relevant Ofwat tests

Ref	Ofwat test		Comment
Primary Focus Areas			
OC1, OC2, OC3	Delivering outcomes for customers	Outcome tests relevant to: • Common PCs • Asset health PCs and ODIs • Bespoke PCs • Scheme-specific PCs • C-MeX • Reputation ODIs • Financial ODIs • Enhanced outperformance and underperformance payment rates • Deadbands • Caps and collars	Our approach to determining PCs and ODIs was set out in the Chapter and other supporting Annexes. This Technical Annex sets out the way we developed a short list of PCs and developed our ODIs.
Secondary Focus Areas			
EC1	Customer-engagement		
CMI1	Targeted controls markets and innovation		
AV1, AV2, AV3, AV4	Addressing affordability and vulnerability		
CE4	Securing cost efficiency		
LR1, LR2	Securing long-term resilience		
CA4	Securing confidence and assurance		

1. Overview

This Annex provides further detail on the way that we have developed our PCs and ODIs. Figure 1 below summarises the approach that we have followed – each of the steps outlined in Figure 1 is explained in this Annex.

1	**Identify PCs aligned with customer needs and Ofwat guidance**
2	**Define PCs to support improved reporting**
3	**Set stretching PC targets**
4	**Determine whether ODIs should be financial or reputational**
5	**Calibrate financial ODIs using customer insight**
6	**Specify the form of the ODI**
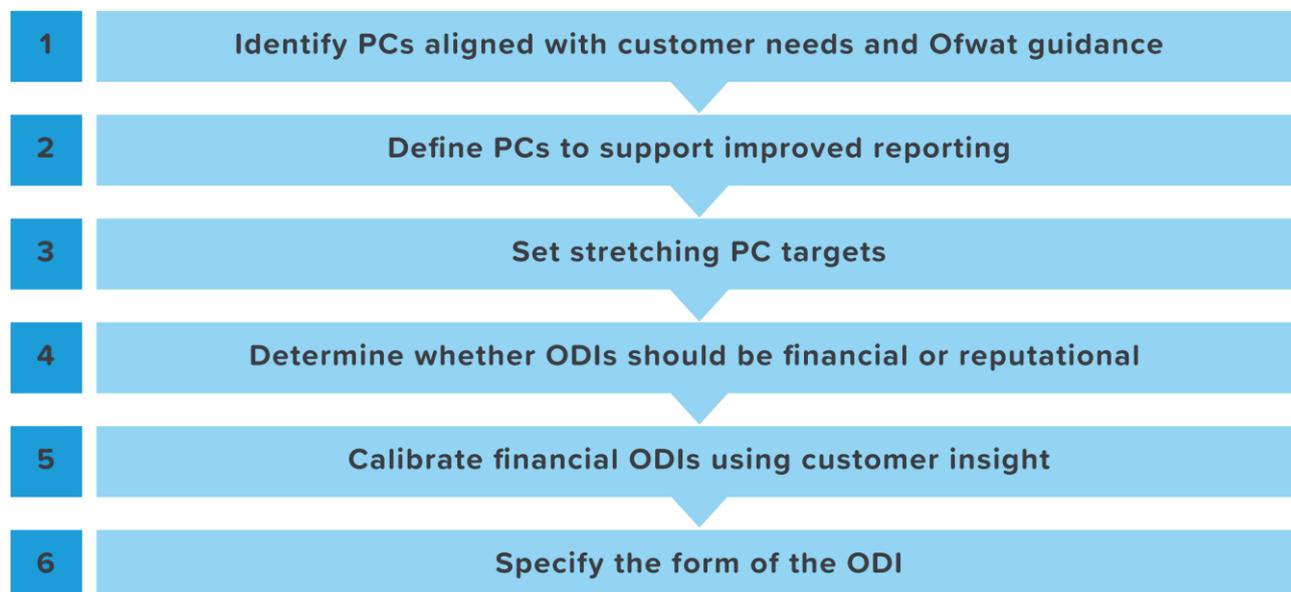
Figure 1: Our approach to developing PCs and ODIs

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2. Identify PCs aligned with customer needs

Our systematic approach reflects the views of customers, stakeholders and regulators

To ensure we selected PCs which best reflected the views of our customers and stakeholders, we developed a systematic approach to identifying and prioritising potential PCs from a long-list of candidate PCs. This also took account of Ofwat's requirements for common and bespoke PCs, as set out in the Final Methodology.

Figure 2 below illustrates the framework that we developed to prioritise both potential commitments and specific definitions for those commitments to produce a package that works for all.
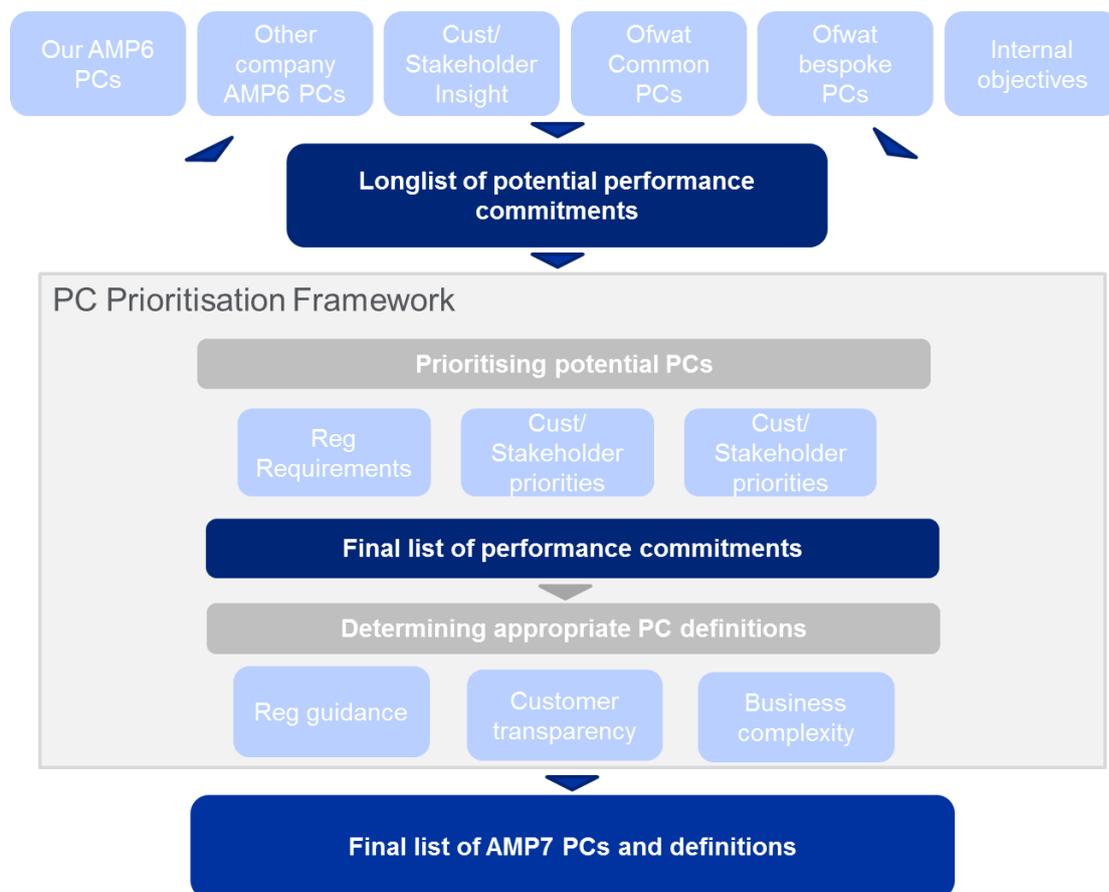
Figure 2: Developing our Performance Commitments

We began by developing a very broad set of candidate PCs, principally derived from our stakeholder and customer insight, but also taking account of Ofwat's requirements, our own and other companies' AMP6 PCs and our own strategic objectives (for example, our Target 100 consumption ambition).

This produced a long-list of 77 potential PCs. To move from this long-list to a more targeted set of PCs, we developed a prioritisation framework which focused on four dimensions: customer insight; stakeholder insight; regulatory requirements; and our own business objectives.

Customer insight

We filtered our long-list of PCs from a customer perspective, asking "***Is the performance commitment highly valued by our customers?"***. We rated customer priorities as high, moderate or low, based on our triangulated insight (see TA4.3: Triangulation of customer priorities).

Priority	Key characteristic
High	PCs emerging as a high relative priority for customers through our triangulation analysis.
Moderate	PCs emerging as a moderate relative priority for customers through our triangulation analysis.
Low	PCs emerging as a low relative priority for customers through our triangulation analysis.

Stakeholder insight

We also filtered our long-list of PCs from a stakeholder perspective, asking "***Is the performance commitment valued by our stakeholders?"***: We rated stakeholder priorities as high, moderate or low, based on our triangulated insight (see TA4.3: Triangulation of customer priorities).

Priority	Key characteristic
High	PCs emerging as a high priority for stakeholders through our triangulation analysis.
Moderate	PCs emerging as a moderate priority for stakeholders through our triangulation analysis.
Low	PCs emerging as a low priority for stakeholders through our triangulation analysis.

Regulatory requirements

We filtered our long-list of PCs from a regulatory perspective, asking "***Is the performance commitment required by Ofwat or another regulator?"***:

Priority	Key characteristics
High	PCs satisfying requirements outlined in the PR19 Final Methodology, including common PCs and bespoke PCs required by Ofwat.
Moderate	PCs we are currently reporting against in AMP6
Low	PCs outside of these categories

Business objectives

Finally, we filtered our long-list of PCs from an internal business perspective, asking "***will the PC help us to deliver against our strategic outcomes, objectives and priorities?***":

Priority	Key characteristic
High	Clear alignment between the PC and our strategic outcomes and objectives.
Moderate	Clear alignment between the PC and our strategic outcomes and objectives, however a complete or partial overlap with another PC.
Low	Characteristics as outlined for the moderate score, however the PC fails to incentivise improved performance.

Considering the priority scores achieved under each criteria, we reached a final list of 43 PCs for AMP7. Table 1 below shows the results of this prioritisation exercise for each of the selected PCs. All of those selected scored 'High' across at least one criteria and align with the objectives we have established under each of our ten outcomes.

The 34 PCs which were not selected as they did not score 'High' on any of the criteria are listed below:

PC 1.	Fog audits
PC 2.	Nitrate (Cost Adjustment Claim)
PC 3.	Digital interactions
PC 4.	Replacing customer supply pipes if a leak is suspected
PC 5.	Publishing our developer services plans
PC 6.	Sites of special scientific interest
PC 7.	Lead mains pipe replacement
PC 8.	Wastewater treatment works sites made resilient to future extreme rainfall events
PC 9.	Water trading
PC 10.	Support the South East economy
PC 11.	Carbon performance commitment
PC 12.	Sewer network capacity
PC 13.	Community education centres built
PC 14.	Event risk Index
	AMP 6 PCs – see TA.6.3
PC 15.	Sewer Blockages
PC 16.	Odour complaints (Portswood and Tonbridge treatment works)
PC 17.	PE compliance
PC 18.	Wastewater asset health (sewer collapses, WwTW PE compliance, external flooding - other causes)
PC 19.	Avoiding blocked drains
PC 20.	Thanet sewers
PC 21.	Woolston STW
PC 22.	Millbrook sludge
PC 23.	Discoloration
PC 24.	Water use restrictions
PC 25.	Water asset health (mains bursts, TIM, WSW & WSR coliform compliance, turbidity compliance)
PC 26.	Meeting individual and community needs
PC 27.	Awareness of water hardness measures
PC 28.	Where your money goes
PC 29.	Billing Queries
PC 30.	Take up of assistance schemes
PC 31.	Value for Money
PC 32.	First contact resolution
PC 33.	Drinking Water Quality - mean zonal compliance
PC 34.	Serious Pollution incidents

Table 1: PC prioritisation – PC type Key: ⬛ customer/stakeholder PC ⬛ Cost adjustment claim ⬛ Ofwat directed PC

Objective	Performance Commitment	PC Prioritisation				Type	Comments
		Customer	Stakeholder	Regulatory	Business objectives		
To provide water that reaches the highest quality standards	Water quality compliance CRI	High	Low	High	High		This is a common PC.
	Replace customer lead pipes	High	Low	Low	High		This is highly valued by customers.
To provide water that looks, smells and tastes great	Drinking water taste and odour	High	Low	Low	High		This is highly valued by customers.
	Drinking water appearance	High	Low	Mod.	High		This is an AMP6 PC that is highly valued by customers.
To make the water we have go further – now and in the future	Leakage	High	High	High	High		This is a common PC.
	Per capita consumption	Mod.	Mod.	High	High		This is a common PC.
	Distribution Input	Mod	Mod	Low	High		This is an AMP6 PC which is valued by stakeholders and our CCG
Reduce the impact of our operations on the environment by increasing use of renewable sources	Renewable Generation	Low	High	Mod.	High		This is an AMP6 PC which is highly valued by stakeholders
To provide treated wastewater in place of drinking water for use by our customers	Effluent Reuse	Mod.	High	Low	High		This is highly valued by stakeholders.
To effectively recycle bioresources	Satisfactory bioresources recycling	Low	Low	High	High		This is our main bioresources PC. It reflects EA guidance.
To reduce the impact of our operations on the environment	Pollution incidents (category 1 – 3)	Mod.	High	High	High		This is a common PC.
To enhance the natural environment we rely upon	River water quality	Mod.	High	Low	High		This measures the outcome of the WINEP programme in line with EA expectations
	Natural Capital	Mod.	High	Low	High		This is a commitment to develop natural capital accounts for specific catchments

To improve the quality of our bathing waters	Improve the number of bathing waters to at least good (cost adjustment claim)	Mod.	High	Mod.	High		This PC relates to bathing water schemes for which we have submitted a CAC.
	Maintain bathing waters at 'excellent'	Mod.	High	Mod.	High		This is an AMP6 PC that is highly valued by stakeholders.
To reduce how much water we abstract	Abstraction Incentive Mechanisms	Low	High	High	High		This is a mandatory bespoke PC.
To help our customers use less water in their homes and businesses	Target 100	Mod.	High	Low	High		This is directly aligned with the strategic direction of our Target 100 ambition, for per capita consumption under 100 litres per person per day.
	Water saved form water efficiency visits	Mod.	High	Low	High		This is aligned with the strategic direction of our Target 100 ambition, to help customers use less water through behavioural and physical interventions.
	Access to daily water consumption data	Mod.	Mod.	Low	High		This is aligned with the strategic direction of our Target 100 ambition, to incentivise customers to use less water.
To support the delivery of growth in the South East to meet government targets	D-MeX measure	Low	Mod.	High	High		This is a common PC.
To support tourism in the region by supporting excellent bathing waters	Improve the number of bathing waters to least 'excellent' (cost adjustment claim	Mod.	High	Low	High		This PC relates to bathing water schemes for which we have submitted a CAC.
Our customers receive a great service	C-MeX Measure	High	Low	High	High		This is a common PC.
To make sure people pay for the water they use so bills are fair for all	Void properties	Low	Low	High	High		This is a mandatory bespoke PC.
	Household gap sites	Low	Low	High	High		This is a mandatory bespoke PC.
To increase the number of customers who can afford and pay their bill	Effectiveness of financial assistance	Mod.	Low	Mod.	High		This improves the existing AMP6 PC by measuring the effectiveness of support (the AMP6 PC focuses only on the number of customers supported).
To provide effective support to our customers	Satisfaction with vulnerability support	Mod.	Low	High	High		This is a mandatory bespoke PC that is closely aligned to our strategic

Objective	Performance Commitment						Description
in vulnerable circumstances							direction to provide support for customers.
To increase capacity of the sewer network using sustainable methods	Surface water management	Mod.	High	Low	High		This is highly valued by stakeholders and moderately by customers
To actively engage and support the communities we serve	Community engagement	Low	High	Low	High		This is highly valued by stakeholders
	Schools visited and engagement with children	Low	High	Low	High		This PC helps us deliver our strategic plans behaviourally now and in the future for target 100 ,our FOG reduction and working with communities
To provide a reliable water service	Water supply interruptions	High	Mod.	High	High		This is a common PC.
	Asset Health: Mains bursts	Mod.	Low	High	High		This is a common PC.
	Water pressure	Low	Low	Mod.	Mod.		This was an AMP6 PC which customers said they did not want us to drop.
To increase the long-term resilience of our network	Risk of severe restrictions in a drought	Mod.	High	High	High		This is a common PC.
	Water supply resilience	Mod.	High	High	High		This is a bespoke PC which emphasises the importance of improving resilience.
	Asset health: Unplanned outage	Mod.	Low	High	High		This is a common PC.
To provide a reliable and compliant wastewater service	Internal sewer flooding	High	High	High	High		This is a common PC.
	External sewer flooding	Mod.	High	Low	High		This is an AMP6 PC which is highly valued by stakeholders
	Asset Health: Treatment works compliance	Mod.	Mod.	High	High		This is a common PC.
Provide effective wastewater infrastructure to meet future needs	Growth (cost adjustment claim)	Low	High	Low	High		This PC protects customers from non-delivery of schemes for which we have submitted a CAC.
	Asset Health: Sewer collapses	Mod.	Low	High	High		This is a common PC.
	Risk of sewer flooding in a storm	Low	High	High	High		This is a common PC.

	Thanet Sewers (Cost adjustment claim)	Mod.	Low	Low	High		This PC protects customers from non-delivery of schemes for which we have submitted a CAC.
	Combined Sewer Overflows (CSO) monitoring	Mod.	High	High	High		This is a bespoke PC which emphasises the importance of improving resilience.

3.   Define PCs to support improved reporting
We developed robust definitions for each PC to meet the expectations of regulators and customers.

For each of the PCs we have developed detailed definitions which:

- comply with any relevant regulatory guidance
- provide transparency to our customers on our performance; and,
- can be adequately measured from a business perspective.

Regulatory considerations

We challenged each PC definition from a regulator perspective, to consider "***Has any guidance outlined by Ofwat or our other regulators been followed?***" This ensured we identified relevant PCs where a specific definition was prescribed, or instances where long lists of potential definitions existed. Where possible we used Ofwat's prescribed definitions, or industry standard definitions.

Transparency considerations

We also considered the transparency of each PC definition to our customers and stakeholders, ensuring that our measures could be easily understood by customers and stakeholder. As part of this we also considered "***Is the measure easily comparable across the industry?***"

Complexity considerations

Finally, with a focus on measurability, we considered the complexity of each PC definition from a business perspective, asking "***Is the measure easy for customers to understand? Is the measure likely to be recorded with little to no error, and is it within management control?***"

Table 2: PC definition source – PC Key: Bespoke   Industry standard   Regulatory

Performance Commitment	Definition source			PC Key
	Regulatory	**Industry standard**	**Bespoke**	
Water quality compliance CRI	✔			
Replace customer lead pipes			✔	
Drinking water taste and odour		✔		
Drinking water appearance		✔		
Leakage	✔			
Per capita consumption	✔			
Distribution Input		✔		
Renewable Generation			✔	
Effluent Reuse			✔	
Satisfactory bioresources recycling		✔		
Pollution incidents (category 1 – 3)	✔			
River water quality	✔			
Natural Capital			✔	

Measure	Col 1	Col 2	Col 3
Improve the number of bathing waters to at least good (cost adjustment claim)			✔
Maintain bathing waters at 'excellent'			✔
Abstraction Incentive Mechanisms			✔
Target 100			✔
Water saved form water efficiency visits			✔
Access to daily water consumption data			✔
D-MeX measure	✔		
Improve the number of bathing waters to least 'excellent' (cost adjustment claim			✔
C-MeX Measure	✔		
Void properties		✔	
Household gap sites			✔
Effectiveness of financial assistance			✔
Satisfaction with vulnerability support			✔
Surface water management			✔
Community engagement			✔
Schools visited and engagement with children			✔
Water supply interruptions	✔		
Asset Health: Mains bursts	✔		
Water pressure	✔		
Risk of severe restrictions in a drought	✔		
Water supply resilience			✔
Asset health: Unplanned outage	✔		
Internal sewer flooding	✔		
External sewer flooding	✔		
Asset Health: Treatment works compliance	✔		
Growth (cost adjustment claim)			✔
Asset Health: Sewer collapses	✔		
Risk of sewer flooding in a storm	✔		
Thanet Sewers (Cost adjustment claim)			✔
Combined Sewer Overflows (CSO) monitoring			✔

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4.   Set stretching PC targets

We have used an iterative approach to setting stretching targets for our PCs

We adopted a structured, iterative methodology for setting PC targets which ensures they are stretching and well aligned to our customers' preferences. Figure 3 below illustrates this approach.

Target setting process	Key Inputs	
	Improve	**Maintain**
Initial Target	Efficient level of service	
	Historic, minimum, maximum attainment	Current level of performance
	Management insight	
Revised Target	Triangulated customer and stakeholder priority	
	Historic, minimum, maximum attainment (if not used for initial target)	
Final Target	Regulatory expectations	Regulatory expectations
	Expert knowledge and operational constraints	Expert knowledge and operational constraints

Figure 3: Developing PC targets

Initially, we distinguished between PCs where customers have told us they want us to maintain performance and those where they expect us to improve our performance.

Where customers' priority is to maintain performance, for example, our PC on low water pressure, we set the target at the forecast 2019-20 level (but we reflect any incidental improvement arising from investment in other priority areas).

This category includes PCs where we currently achieve the maximum level of performance. For example, we currently deliver 100% compliance against our PC for "Satisfactory bioresources recycling" and intend to maintain this level of performance through AMP7.

Before finalising the target, we considered whether there are any regulatory expectations, or operational constraints that indicates the target should be moderated or strengthened.

Where customers told us they expect us to improve performance, we followed a 3-step iterative process that takes account of all sources of relevant data available to us. Below we describe the three steps:

(i) Set initial target using the widest range of available data

(ii) Revise target to take account of relative customer priorities

(iii) Finalise target to reflect regulatory expectations and any operational delivery constraints

Details of the application of this methodology to each of the PCs can be found in TA.6.2

(i) Set initial target

We first set an initial PC target using all available data.

Where robust willingness to pay information is available, we identify the efficient level of service using cost benefit analysis. Where we do not have willingness to pay information, we set initial targets based on historical performance, comparative performance, minimum improvement and maximum attainment information. We also considered expert knowledge to understand these performance levels. Finally we took account of any regulatory guidance or requirements.

The table below sets out the sources of information which we considered in setting the initial targets. (Note that not all information is available for all PCs.)

Table 3: Data used to set initial targets

Data source	Explanation	How each is derived
Cost benefit analysis information	Comparing the marginal cost of performance improvement to customer identified marginal benefits to define the efficient level of service.	Marginal benefits are derived from Accent WTP research (TA.4.4 (11)). This was converted to be consistent with the PC definition and the cost beneficial level identified by comparing the marginal costs and benefits.
Historic performance	Considering our performance on the metric or related metric(s) in previous years.	We used this historical information to forecast potential 2024-25 performance.
Comparative performance	Considering forecast industry performance, including forecast upper quartile performance.	We predicted future performance for the sector and in particular the upper quartile performance. As detailed in TA.11.1 and TA.12.1.
Minimum improvement	Understanding what the minimum level of improvement would be.	This is where we would expect performance to be in 2024-25 if we spent only base maintenance costs and met minimum regulatory requirements on each measure.
Maximum attainment	Understanding the maximum possible attainment for a given metric.	This is the maximum theoretical performance to be if there were no exogenous or cost constraints
Expert knowledge	Understanding what an attainable level of performance would be based on our expected business plan spending.	This is an expected level of performance in 2024-25 for each PC based on the projects we intend to deliver in AMP7.

(ii) Revise Target

Having set an initial target, in order to ensure that we reflected the widest range of customer evidence, we took account of relative customer priorities using our triangulated view. (For details of this see: Chapter 4 – Customer and stakeholder engagement). Based on whether

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a PC was categorised as a High, Medium or Low we applied an additional stretch to the target.

- Where our customer insight demonstrated a high relative priority for a given PC, we considered increasing the stretching target, generally by 10%.

- Where it was a moderate priority, we considered increasing by 5%.

- Where customers revealed a lower relative priority, we did not change the target.

The application of this approach is set out in TA6.3.

(iii) Final target

Steps 1 and 2 provided a target that was appropriate from a customer perspective, but did not take any account of either specific regulatory requirements or the practicalities of delivery within a five-year period.

As the final step in setting the target we therefore considered these two aspects. Where a regulatory requirement existed, which would result in a more stretching target than the customer view, we adjusted the target to meet this requirement. For example, where possible, Ofwat have indicated that they expect targets to be set at the forecast upper quartile level of performance for each year of the AMP7. Therefore, where comparative data is available we have projected upper quartile performance, and challenged ourselves to set this as our performance commitment target.

Finally, we considered whether the target is deliverable by the end of AMP7 (2024-25) and whether it might involve disproportionate expense to deliver. This led us to soften a very small number of targets. For example, we adopted a slightly less challenging target for the asset health (sewer collapses) PC because a tougher target would result in significant additional expense.

Table 3 sets out the overarching design of each of our final targets where: 'Regulatory/upper quartile' is a guided target by Ofwat such as upper quartile performance; 'Customer preference' is where we have set our initial target on cost beneficial analysis or added additional stretch where they are a higher priority; 'Maximum deliverability' is where we have set the target based on our maximum performance based on our business plan e.g. risk of severe restrictions in a drought our target is set at zero.

Table 4: PC target source - PC Key:

Maximum deliverability ▨ **Customer incentivised target level** ▨ **Regulatory** ▨

Performance Commitment	PC Target source			PC Key
	Regulatory/ Upper quartile	Customer preference	Maximum deliverable	
Water quality compliance CRI		✔		
Replace customer lead pipes		✔		
Drinking water taste and odour		✔		
Drinking water appearance		✔		
Leakage	✔			
Per capita consumption	✔			
Distribution Input			✔	
Renewable Generation		✔		
Effluent Reuse		✔		
Satisfactory bioresources recycling	✔			

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Measure	Col 1	Col 2	Col 3	
Pollution incidents (category 1 – 3)	✔			(dark blue)
River water quality	✔			(dark blue)
Natural Capital			✔	(cyan)
Improve the number of bathing waters to at least good (cost adjustment claim)		✔		(blue)
Maintain bathing waters at 'excellent'		✔		(cyan)
Abstraction Incentive Mechanisms			✔	(cyan)
Target 100			✔	(cyan)
Water saved form water efficiency visits		✔		(blue)
Access to daily water consumption data		✔		(blue)
D-MeX measure	✔			(dark blue)
Improve the number of bathing waters to least 'excellent' (cost adjustment claim		✔		(blue)
C-MeX Measure	✔			(dark blue)
Void properties	✔			(dark blue)
Household gap sites			✔	(cyan)
Effectiveness of financial assistance			✔	(cyan)
Satisfaction with vulnerability support			✔	(cyan)
Surface water management		✔		(blue)
Community engagement	✔			(dark blue)
Schools visited and engagement with children			✔	(cyan)
Water supply interruptions	✔			(dark blue)
Asset Health: Mains bursts		✔		(blue)
Water pressure		✔		(blue)
Risk of severe restrictions in a drought			✔	(cyan)
Water supply resilience			✔	(cyan)
Asset health: Unplanned outage			✔	(cyan)
Internal sewer flooding	✔			(dark blue)
External sewer flooding			✔	(cyan)
Asset Health: Treatment works compliance	✔			(dark blue)
Growth (cost adjustment claim)	✔			(dark blue)
Asset Health: Sewer collapses			✔	(cyan)
Risk of sewer flooding in a storm			✔	(cyan)
Thanet Sewers (Cost adjustment claim)	✔			(dark blue)
Combined Sewer Overflows (CSO) monitoring	✔			(dark blue)

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5. Determine whether ODIs should be financial or reputational

By default we determined that all PCs should have financial ODIs

ODIs can be financial or reputational. We took the position, consistent with Ofwat guidance that all of our PCs should be financial ODIs by default, unless the nature of the PC itself is fundamentally reputational and not financial or there were strong reasons for adopting a reputational incentive.

The exceptions are where:

- our customers do not attach a high value to the PC
- we have limited historical or comparative data
- the PC is materially influenced by external factors
- the PC is financially-incentivised elsewhere or in some other form.

From this process we decided that 12 of our PCs should be reputational-only, with the remaining 31 PCs having financial incentives attached. Details of the process we followed are included in Chapter 6, Outcomes, Performance Commitments and Outcome Delivery Incentives.

6. Calibrate ODIs using customer insight

Our ODIs are based on specific customer research

Having identified which PCs should carry financial incentives, we next explored our customers' willingness to pay to incentivise performance improvements that went beyond the levels built in to our plan.

To do this we conducted specific research with YouGov which:

■ explored customers views on ODIs in principle, through qualitative research; and

■ allowed customers to state directly how much they would be willing to pay to incentivise performance improvements, via quantitative, on-line research.

The key finding from the qualitative research was that customers were lukewarm about the idea of incentives, in particular because they were concerned about the risk of their bills becoming more volatile year-on-year as a result[1].

Nonetheless, in the quantitative research, customers did express a positive willingness to pay for further service improvements, in the form of ODIs. The overall approach to the research is described in the box below. A copy of the research findings are available at TA4.4(3): Engagement Deliverables.

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[1] To address this we have included caps and collars and put in place a cap of £5 on the overall level of annual bill change as a result of ODIs. See below and main Chapter 6 for details.

Our ODI research

To set our ODIs we felt it was important to test with our customers their willingness to pay for service improvements beyond the level already built in to our plan – and which were themselves informed by the output of earlier willingness to pay studies.

In conjunction with YouGov, we designed an online research approach based on sliders. Customers were provided with information about the committed performance levels in our plan (as well as contextual information, for example on comparative performance) and invited to move the slider if they would be willing to pay for further improvements. In contrast to conventional willingness to pay research, the sliders provided immediate feedback to the customer on the bill impact of their decisions, based on estimated marginal costs, allowing them to very easily calibrate their decisions.

Figure 3. Example of willingness to pay slider research

As noted above, the research provided evidence of a positive willingness to pay for most of our PCs, as well as indicating the relative importance of each of them to customers – expressed very directly in terms of the impact on their bills.

However, while customers expressed a positive willingness to pay (i.e. they moved the sliders to the right) of between £0.50 and £2.50 for most attributes tested, for many attributes the associated service improvements were relatively small. For example, the willingness to pay for reductions in interruptions was around £0.50, but this was associated with a service improvement of just 13 seconds (compared with our PR14 ODI which applied over a range of 10 minutes). Had we used these service levels directly to set ODIs, the result would have been significant performance payments being accrued for very minimal changes in performance.

We therefore cross-referenced this new evidence with our earlier willingness to pay work, carried out by Accent in 2016-17 (see TA4.4(11): Engagement Deliverables). What we identified was a clear pattern that while the unit willingness to pay values were in many cases very different between the two pieces of evidence, the absolute willingness to pay values (i.e. the £ per customer) for the attributes included in both surveys were much closer.

This is illustrated in the Table below, which shows, first, the unit willingness to pay values, and second, the absolute values.

Table 5: Comparison of willingness to pay benefits

Performance commitment	WTP research – marginal benefits	ODI research – marginal benefits		WTP research - bill change	ODI research - bill change
Taste and Smell (per 1 contact per 10,000 customers)	£5.00	£23.33		£2.00	£1.40
Interruptions to supply (per 1 minute lost)	£1.00	£2.52		£1.00	£0.53
Per capita consumption (per 1 l/head/d)	£0.09	£1.34		£0.90	£1.34
Leakage (per 1 Ml/d)	£0.43	£1.86		£3.40	£2.70
Bathing waters at excellent (per bathing water)	£0.53	£0.69		£1.60	£2.30
Pollution incidents (per 1 incident)	£0.37	£0.08		£2.60	£0.75
Renewable energy (per 1%)	£1.50	£0.22		£3.00	£0.67
Internal sewer flooding (per 1 incident)	£0.05	£0.04		£2.00	£0.47
External sewer flooding (per 1 incident)	£0.006	£0.001		£2.10	£0.39

This finding is intuitively understandable. Many customers will have had little or no direct experience of service failures and are likely, despite our best efforts, to have found it difficult to quickly get to grips with statistics such as the number of flooding incidents per 10,000 customers or a reduction in the duration of interruptions, expressed as an average across all customers[2].

It is also consistent with behavioural economics – and with the concept of bounded rationality - which tells us that we are typically poor at evaluating risks of low probability events of the type being tested here. It is also supported by a review of willingness to pay studies in the water sector by Accent research, which demonstrated that, in contrast to expectations, the sensitivity of willingness to pay to risk reductions offered was consistently less than proportionate[3].

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[2] Normalised values were used to enable us to provide customers with comparative information
[3] Analysis of PR14/SRC15 WTP Findings, PJM Economics / Accent Research, September 2016

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For these reasons, in developing our ODIs, we decided to place more weight on the absolute value of customers' willingness to pay, which show greater consistency across our research, than the unit values, which vary very significantly. We therefore undertook an additional step to scale the absolute value of customers' willingness to pay over the plausible range of performance – see below.

We triangulated a range of evidence to derive incremental benefits

The ODI research provided us with a clear view on customers' absolute willingness to pay for ODI outperformance payments (and underperformance payments). However, taking the improvement ranges directly from the research would have in many cases, resulted in out and under-performance payment rates that were both out of line with the findings of our initial willingness to pay studies and the ODI rates that apply in PR14.

To establish the appropriate range of improvements over which to apply the performance payment we therefore triangulated a range of evidence including:

(i)   The likely range of performance around the target level (the p10 and P90 values) using a range of approaches as described in the box below.

(ii)   The PR14 ODI ranges, where ODIs currently exist (for Southern Water where available and other companies' where not).

(iii) The ODI slider research ranges.

Where the evidence from (iii) was plausible and in line with (i) and (ii) we gave most weight to the slider research evidence, and used this to set both the absolute and unit ODI values.

Where (iii) produced a performance range that was significantly out of alignment with other evidence from (i) and (ii), we took a balanced judgement with most weight given to the PR14 precedent.

Dividing the absolute willingness to pay values across the range established through this process gave us a first pass of the incremental benefits to enable us to set the ODIs.

To take Asset health: mains bursts as an example:

A.	**Absolute willingness to pay from slider research**:	£1.81
B.	**Water customers:**	1,066,082 customers
C.	**Total WtP (A * B):**	£1,929,608
D.	**Deadband/target to P90 range :**	17.4 bursts
E.	**Incremental benefit (C/D):**	£0.110m
F.	**Unit ODI value:** (incremental benefit *p (sharing ratio):	£0.055m

We calibrated our ODIs with other regulatory incentives

In order to generate an initial view of under and outperformance payments we applied Ofwat's recommended formula (which takes account of other regulatory incentives). This is reproduced below.

$$ODI_{underperformance} = \text{Incremental benefit}^{20} - (\text{incremental cost x p})$$

$$ODI_{outperformance} = \text{Incremental benefit x (1–p)}$$

In addition to information on incremental benefits, the formula requires information on incremental costs. These were derived principally from the enhancement costs in our business plan, reflecting our total improvement and planned delivery in AMP7. Where costs relate to more than one ODI (for example the costs of our water networks programme we split between Leakage, Asset health: mains bursts, Water supply interruptions and Drinking water appearance) they were allocated across the relevant ODIs using expert judgement).

Applying these incremental costs and incremental benefits in line with the Ofwat formula generated initial outperformance and underperformance payment incentive rates.

To ensure that we took account of the widest possible range of customer evidence we adjustment these initial rates based on: (i) the relative priority of the ODI, using our triangulated customer research (TA4.3: Triangulation of Customer Priorities); and, (ii) the willingness to pay values from our earlier WTP research. This had the effect of strengthening the incentives.

For example, leakage was a relatively high customer priority across all of our research and so we applied a 10% adjustment to both out and under-performance payments. Additionally, it had higher willingness to pay in respect of underperformance in our earlier research, so we further strengthened the underperformance incentive payment by 10%. This is shown in Figure 4 below.

Initial incentive rate	Customer priority	WTP research	% Enhanced	Final Incentive rate
Outperformance rate: £0.022 Underperformance rate: -£0.022	High customer priority: Increase both rates by 10%	Outperformance rate not higher: no change Underperformance rate higher: increase penalty rate by 10%	110% 120%	Outperformance rate £0.024 Underperformance rate -£0.026

Figure 4: Reflecting the wider customer evidence base in our ODI rates

Table 6 below shows the basis for each of our ODIs.

Table 6: ODI source – ODI Key: ▢ Cost based ODI ▢ Enhanced WTP (including strengthening based on customers' priorities and other WTP ▢ Pure WTP

Performance Commitment	ODI source			ODI Key
	Pure WTP	Enhanced WTP	Cost based ODI	
Water quality compliance CRI		✔		
Replace customer lead pipes	✔			
Drinking water taste and odour		✔		
Drinking water appearance		✔		
Leakage		✔		
Per capita consumption		✔		
Distribution Input				
Renewable Generation		✔		
Effluent Reuse	✔			
Satisfactory bioresources recycling			✔	
Pollution incidents (category 1 – 3)		✔		
River water quality	✔		✔	
Natural Capital				
Improve the number of bathing waters to at least good (cost adjustment claim)	✔		✔	
Maintain bathing waters at 'excellent'			✔	
Abstraction Incentive Mechanisms		✔		
Target 100				
Water saved form water efficiency visits	✔			
Access to daily water consumption data	✔			
D-MeX measure				
Improve the number of bathing waters to least 'excellent' (cost adjustment claim	✔		✔	
C-MeX Measure				
Void properties		✔		
Household gap sites				

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Measure				
Effectiveness of financial assistance				
Satisfaction with vulnerability support				
Surface water management	✓			
Community engagement				
Schools visited and engagement with children				
Water supply interruptions		✓		
Asset Health: Mains bursts	✓			
Water pressure			✓	
Risk of severe restrictions in a drought				
Water supply resilience				
Asset health: Unplanned outage	✓			
Internal sewer flooding		✓		
External sewer flooding		✓		
Asset Health: Treatment works compliance			✓	
Growth (cost adjustment claim)			✓	
Asset Health: Sewer collapses		✓		
Risk of sewer flooding in a storm				
Thanet Sewers (Cost adjustment claim)			✓	
Combined Sewer Overflows (CSO) monitoring				

7.   Specify the form of the ODI

We set caps and collars to address our customers' concerns

We considered carefully whether it was appropriate to include caps and collars on our ODIs in the same way as at PR14. We note that Ofwat guidance has a presumption against their use.

On balance, we determined that it would be appropriate to include both caps and collars for three reasons:

(i) In our ODI research our customers had given us a clear view on the maximum absolute amount that they were willing to pay for improvements beyond the service levels in our plan. Given our conclusions on the most appropriate interpretation of the research findings, we felt it would be directly contrary to our customers' preferences to allow for open-ended ODI outperformance payments, which could be well in excess of their willingness to pay.

(ii) To cap outperformance payments, but not underperformance payments would have led to a set of financial incentives that were materially skewed to the downside.

(iii) Our qualitative ODI research clearly indicated that our customers were concerned about the possibility of ODIs leading to large variations in bills year-on-year. Open-

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ended ODI performance payments could lead to significant swings in bills, both up and down – potentially driven by exogenous factors - which our customers have clearly told us would not be welcome.

We have set caps and collars with maximum out and under-performance payments at the maximum levels given by the ODI research, with performance ranges set in the way described in section 3 above. This is consistent with a P10:P90 range, so for all but the most extreme outcomes, performance payments will be applicable as the caps and collars will not 'bite'. We do not believe this produces an unduly conservative set of ODIs, since both water and wastewater ODIs sit comfortably within Ofwat's indicative range of 1-3% of RoRE.

8. Exceptions

We applied a bespoke approach where appropriate

In a number of cases we applied a different approach compared to the approach explained above. This reflects the specific nature of the PC / ODI. These are summarised below and described in more detail against each of the PCs in TA6.2.

Table 7: Exceptions to the ODI approach

PC	How the ODI is calculated	The reason it is a bespoke method
Maintaining bathing water quality	The ODI is based on the value of the Cost Adjustment Claim for bathing waters in AMP6.	It is designed to continue to protect customers from any deterioration in the bathing water improvements delivered in AMP6.
Good bathing water quality	The ODI penalty is based on the value of the Cost Adjustment Claim. From this, we derived an average figure for improving five bathing waters to good. The reward is based on getting these five bathing waters to excellent. This value is derived from our ODI research for excellent bathing waters.	It is a Cost Adjustment Claim. The reward is based on going beyond the level of improvement in the Cost Adjustment Claim, improving the bathing waters to excellent rather than good.
Excellent bathing water quality	The ODI penalty is based on the value of the Cost Adjustment Claim. From this, we derived an average figure for improving two bathing waters to excellent. The reward is based on getting two more bathing waters to excellent. This value is derived from our ODI research for excellent bathing waters.	It is a cost adjustment claim for the minimum, and the reward is based on going over and above the cost adjustment claim to bring more bathing waters to excellent.
River water quality	The ODI penalty is based on the km of river improved and the associated costs. The reward is based on the benefits of delivering the river improvements at least a year earlier than our regulatory obligation date.	This is dictated by the EA and forms part of the WINEP programme.
Asset health: Treatment works compliance	Our total penalty is £100m for the AMP based on an uplift to the largest penalties applicable in AMP6. 50% of the penalty is linked to the number of failed works and 50% to the PE of failed works.	The bespoke approach reflects our historic performance challenges in this area.
Internal sewer flooding	In addition to the direct benefits, we have transferred 50% of the benefits of reducing sewer collapses to this PC to link more directly	This better reflects the impact of asset failures on customers.

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	to the customer impact of these asset failures. Sewer collapses is therefore a penalty only ODI.		
External sewer flooding	In addition to the direct benefits, we have transferred 50% of the benefits of reducing sewer collapses to this PC to link more directly to the customer impact of these asset failures. Sewer collapses is therefore a penalty only ODI.	This better reflects the impact of asset failures on customers.
C-MeX	As prescribed by Ofwat.	n/a
D-MeX	As prescribed by Ofwat.	n/a

9. PC summary table

We have summarised the basis for our PCs and ODIs below; ordered by the absolute value of the maximum outperformance payment and maximum penalty for each PC.

Table 8: PC summary table

Performance Commitment	PC prioritisation	Definition source	Target source	ODI source	Total ODI value
Asset Health: Treatment works compliance					**£100.00m**
River water quality					**£74.89m**
C-MeX Measure					**£70.00m**
Improve the number of bathing waters to at least good (cost adjustment claim)					**£29.10m**
External sewer flooding					**£21.15m**
Leakage					**£16.74m**
Thanet Sewers (Cost adjustment claim)					**£16.50m**
Maintain bathing waters at 'excellent'					**£15.75m**
Internal sewer flooding					**£15.57m**
Growth (cost adjustment claim)					**£13.20m**
Asset Health: Mains bursts					**£11.63m**
Per capita consumption					**£11.25m**
Renewable Generation					**£9.91m**
Asset Health: Sewer collapses					**£8.60m**
Drinking water taste and odour					**£8.21m**
Pollution incidents (category 1 – 3)					**£8.09m**
Abstraction Incentive Mechanisms					**£6.47m**

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Satisfactory bioresources recycling				£6.25m
Improve the number of bathing waters to least 'excellent' (cost adjustment claim				£5.88m
D-MeX measure				£5.30m
Effluent Reuse				£5.10m
Water quality compliance CRI				£4.28m
Water supply interruptions				£3.11m
Drinking water appearance				£1.56m
Water saved form water efficiency visits				£1.49m
Surface water management				£1.19m
Water pressure				£0.69m
Void properties				£0.63m
Asset health: Unplanned outage				£0.53m
Access to daily water consumption data				£0.32m
Replace customer lead pipes				£0.27m
Distribution Input				n/a
Natural Capital				n/a
Target 100				n/a
Household gap sites				n/a
Effectiveness of financial assistance				n/a
Satisfaction with vulnerability support				n/a
Community engagement				n/a
Schools visited and engagement with children				n/a
Risk of severe restrictions in a drought				n/a
Water supply resilience				n/a
Risk of sewer flooding in a storm				n/a
Combined Sewer Overflows (CSO) monitoring				n/a

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