Ofwat PR14 reconciliation rulebook – draft for consultation

OFWAT

Overview of this document

This document is part of our consultation on the **draft PR14 reconciliation rulebook** (RRB). The RRB is intended to provide clarity on how we expect to make adjustments to revenue and RCV to reflect companies' performance during 2015-20, and how we will close out remaining PR09 reconciliation adjustments.

The RRB reflects the approach set out in the PR14 final determinations and other relevant policy documents. There are also some areas where additional assumptions are needed to implement the published approach. Where there is more than one credible assumption, we have considered the options closely and the rationale for our proposed approach is set out in the associated consultation document. We also engaged consultants PwC who have provided their views on the assumptions. We are publishing PwC's report alongside the RRB consultation.

In our consultation, we invite companies to comment on our proposed approach and all the supporting assumptions which are documented in the draft RRB. By consulting on the RRB assumptions now, we aim to clarify any outstanding questions around the way that the PR09 and PR14 mechanisms will be closed-out at the end of the price control period. This is a continuation of our commitment to a transparent and predictable regulatory regime.

The RRB comprises:

1. This document, which describes the operation of the PR14 reconciliation mechanisms and how the PR09 legacy mechanisms will be closed out at PR19; and
2. A series of illustrative spreadsheets, which demonstrate the practical operation of the PR14 reconciliation mechanisms and how the PR09 legacy mechanisms will be closed out at PR19. These spreadsheets are referred to throughout this document.

An overview of the sections of this document is provided in the table below. The rulebook is structured according to the broad areas where we expect to reconcile companies' performance during 2015-20.

Mechanism	Overview of section	Items covered
1. ODI reconciliation	This section sets out the proposed approach to calculating adjustments to RCV and Revenue to reflect ODI rewards/ penalties arising during 2015-20.	• Overview of mechanism purpose and structure • Treatment of specific issues: assessing outcome performance, in-period ODIs, rounding, PR19 blind year, interactions with other mechanisms • Limitations of the illustrative spreadsheets • Description of mechanism outputs • Description of mechanism inputs and sources • Price base for mechanism calculations • Description of mechanism calculations and the order of the calculations, including aggregate ODI cap calculation
2. Totex menu reconciliation	This section sets out the proposed approach to implementing the totex menu model. It documents how adjustments to RCV and revenue are calculated based on companies' actual totex during 2015-20 compared to the totex baselines set at PR14, taking into account companies' menu choice.	• Overview of mechanism purpose and structure • Treatment of specific issues: components of menu totex, use of PAYG rate, PR19 blind year, interactions with other mechanisms • Description of mechanism outputs • Description of mechanism inputs and sources • Price base for mechanism calculations • Description of mechanism calculations and the order of the calculations
3. WRIFM	This section describes the WRFIM mechanism and its application through the price control period. It describes the detailed reconciliation calculations and adjustments to revenue to account for variances in wholesale revenue during 2015-20	• Overview of mechanism purpose and structure • Treatment of specific issues: representations on the application of the incentive, PR19 blind year • Description of mechanism outputs • Description of mechanism inputs and sources • Price base for mechanism calculations • Description of mechanism calculations and the order of the calculations

Mechanism	Overview of section	Items covered
	compared to forecast wholesale revenue.	
4. Retail reconciliation	This section sets out the proposed approach to reconciling forecast and actual customer numbers during 2015-20 and adjustments to revenue to reflect variances in revenue per customer compared to forecast revenue.	• Overview of mechanism purpose and structure • Treatment of specific issues: reconciliation for customer numbers and revenue per customer, PR19 blind year • Description of mechanism outputs • Description of mechanism inputs and sources • Price base for mechanism calculations • Description of mechanism calculations and the order of the calculations
5. Uncertainty mechanisms	This section describes the operation of the PR14 uncertainty mechanisms and how these interact with the other PR14 reconciliation mechanisms.	• Overview of mechanism purpose and structure • Treatment of specific issues: water business rates uncertainty and Thames Tideway uncertainty • Interaction with other mechanisms
6. PR09 reconciliation mechanisms	This section sets out the proposed approach to closing out the PR09 legacy adjustments at PR19. Specifically, there is an adjustment mechanism to account for variances between companies' forecast 2014-15 performance (which was used to set the final determination) and companies' actual 2014-15 performance.	• Overview of mechanism purpose and structure • Treatment of specific issues: assessing materiality and proportionality, Thames billing system shortfall • Description of mechanism outputs • Description of mechanism inputs and sources • Price base for mechanism calculations • Description of mechanism calculations and the order of the calculations

Mechanism	Overview of section	Items covered
7. **PR09 legacy CIS model reconciliation**	This section sets out the proposed adjustment at PR19 to correct an inconsistency in the PR09 CIS model. In our final determinations we stated that we would consult on this issue early in 2015-20.	• Background and purpose • Description of outputs • Description of inputs and sources • Price base for calculations • Description of calculations and the order of calculations

Contents

1. Outcome delivery incentives (ODI) mechanisms

1.1. Background and purpose

Annex 4 of each company's final determinations set out the outcomes and associated levels of performance (Performance Commitments PCs) that each company must deliver over the five years from 1 April 2015. Some PCs are associated with financial Outcome Delivery Incentives (ODIs), through which companies receive rewards or pay penalties according to the level of their performance.

This chapter explains the different approaches to calculating rewards and penalties based on companies' actual performance over the five years from 1 April 2015. While we expect companies to report on their performance against other (reputational) commitments, the Reconciliation Rulebook focuses on the PCs with associated financial ODIs only.

While there are a large number of ODIs across the industry, for the purposes of illustrating how the reconciliation will be performed we have categorised them based on the nature of the PCs they are associated with:

1. Numeric PCs – where performance can be quantified and compared against a numerical value.
2. Delivery PCs – where performance is dependent on the delivery of an asset/scheme.
3. Bespoke – any other PC that does not fit in the two criteria above.

For each of the three categories of PC a separate model is needed to calculate the appropriate adjustment to revenue/RCV resulting from over or under performance. These models are included in a single spreadsheet published with this rulebook. The subsections below present the ODIs reconciliation model structure, mechanism-specific considerations and then the detail of the inputs, outputs and calculations of the ODIs reconciliation model.

1.2. Mechanism structure

Companies will assess their performance for each PC on an annual basis[1]. Through the ODIs their performance will fall into one of three categories:

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[1] For some PCs this is not necessary.

1. No penalty or reward to be applied (performance falls into a 'deadband' region);
2. Penalty to be applied (underperformance relative to the deadband); or
3. Reward to be applied (outperformance relative to the deadband).

Penalty/reward incentive rates are used to calculate the magnitude of the penalty/reward for the performance on an annual basis. The absolute size of the penalty is also limited by a 'Penalty Collar' (when a company underperforms)and by a 'Reward Cap' (when a company over performs). The net penalty/reward will apply to either RCV or Revenue, depending on the specific ODI mechanism.

The penalty/reward in each year will be accrued and an *aggregate* cap and collar will be applied to limit the overall penalty/reward. This aggregate cap and collar applies at the price-control unit level to non-enhanced companies only, and does not apply to the retail element. The cap and collar on total rewards/penalties is set at +/-2% of regulated equity, calculated over a term of five years. Specifically:

- All net rewards across a companies' ODIs over the 5 years are aggregated. The reward cap applies if the aggregate net rewards are greater than +2% of notional regulatory equity over the five year period.
- All net penalties across a companies' ODIs over the 5 years are aggregated. The penalty collar applies if the aggregate net penalties are greater than -2% of notional regulatory equity over the five year period.

There is no netting-off between the rewards earned from one ODI and the penalties arising from another ODI. However, netting off between rewards and penalties is allowed between years for a given ODI. Finally there are a number of ODIs that sit outside the cap and collar, for example, those related to delivery of certain large schemes. These are specified in Annex 4 of each company's final determination.

The spreadsheets that accompany this rulebook contain two worksheets to allow for the modelling of two different sets of ODIs and the interactions between them. The number of worksheets is only indicative and will need to be updated and increased in final workbooks to reflect the full set of numeric, delivery and bespoke ODIs and their interactions between them per company. Likewise, the spreadsheets would need to be replicated across the relevant price controls (wholesale water, wholesale wastewater or household retail).

1.3. Mechanism specific considerations

Assessing outcome performance

The definition and frequency of measurement of ODIs is included in Annex 4 of companies' final determinations. Companies are required to report their annual performance on ODIs consistent with the requirements of the Regulatory Accounting Guidelines (RAGs) and the commitments they have made to their customers and other stakeholders.

In-period ODIs

We have consulted on licence changes for three companies (South West Water, Severn Trent Water and Anglian Water) which will allow them to receive ODI rewards and penalties during the price control period (so called "in-period ODIs"). If a non-enhanced company receives rewards and penalties during the price control period, the calculation of ODI rewards and penalties at the end of the period will take account of these in-period rewards/penalties. This is to ensure that the total of all rewards/penalties, whether earned in-period or not, does not exceed the aggregate cap/collar. This does not apply to South West Water as the cap/collar does not apply to enhanced companies.

The result of the in-period ODI calculation will be indexed annually using the lagged Nov-Nov RPI (consistent with the indexation used in K-setting). No time value of money adjustment will be applied to account for timing differences between the point of out/under performance and the point that the ODI adjustment will be made.

Rounding

Companies might measure and report performance using a different level of accuracy compared with their PC target. For the purposes of calculating incentive performance, no rounding will be made to the company performance values, these will be compared to the absolute values reported in Annex 4.

For example, assuming the absolute value of a PC is expressed to three decimal places as 12.345:

- A performance level of 12.3456 would exceed the PC.
- While a performance level of 12.34 would not.

The spreadsheet has the functionality to apply rounding. For the purpose of calculating the performance, this input will not be used.

Limitations

The spreadsheets accompanying this rulebook include the option to model a bespoke ODI that does not have the elements of a numeric or delivery PC. To use this module a company will need to calculate whether it has passed or failed a PC in each year of the price control period and the associated reward/penalty outside of the reconciliation model. This module is included to illustrate the reconciliation of a broad range of ODI types.

Furthermore, consistent with the principle of company business plan ownership and in order to encourage innovative approaches to ODI determinations, companies were allowed some freedom in the design of their ODIs. Therefore there could be a small number of ODIs for which ad hoc modelling may be required at PR19.

Treatment of PR19 blind year

In the case of the 2019-20 regulatory year (the "PR19 blind year") companies will provide an estimate of their final year performance, and any deviation from this will be assessed at PR24. This approach is consistent with the treatment of the blind year for other mechanisms and with the treatment of the PR09 blind year.

Interaction with other mechanisms

There is an interaction between ODIs and the WRFIM. For companies with in-period ODIs, the impact of rewards or penalties in the year awarded will be reflected in both companies allowed and recovered revenues in the WRFIM. On this basis, in-period ODIs will not give rise to an additional incentive within the WRFIM calculation.

1.4. Outputs

#	Output	Description	Price base
1	In period ODI revenue adjustment (pre-tax)	The aggregate (upward or downward) adjustment to annual Allowed Revenue during 2015-20 from the reconciliation of in-period ODIs. This includes an adjustment for tax at the marginal statutory tax rate.	12/13
2	End-of-period ODI revenue adjustments (post-tax)	The aggregate (upward or downward) adjustment to revenue at PR19 from the reconciliation of end-of-period ODIs.	12/13

#	Output	Description	Price base
3	End-of-period ODI adjustments (post-tax)	The aggregate (upward or downward) adjustment applied to RCV at PR19 from the reconciliation of performance against end-of-period ODIs.	12/13

1.5. Inputs

1.5.1. General inputs

#	Input	Description	Source	Price base
1	Company type	Either 'Enhanced' or 'Non-enhanced'. This will determine whether the aggregate cap or collar applies	N/A	N/A
2	Year average RCV	The annual year average RCV taken over the financial year	Populated final determination financial model	12/13
3	Average net debt	The annual average net debt taken over the financial year, inputted as a negative value	Populated final determination financial model	Nominal
4	Aggregate Penalty Collar/ Aggregate Reward Cap	The cap and collar on total rewards/penalties is set at +/-2% of notional regulatory equity It is equal to 2% of the value of notional regulatory equity over the five years. Notional regulatory equity is calculated as Nominal Average RCV from the FD financial model (Row 3356, from sheets "Water Nominal" and "Waste Nominal") adjusted by average net debt from the	Policy chapter A2 – outcomes, Pages 89-90.	12/13

#	Input	Description	Source	Price base
		FD financial model (Row 3353 from sheets Water Nominal and Waste Nominal), converted to 12-13 real values using the forecast RPI series in the financial model		
5	Marginal tax rate	The marginal statutory tax rate applicable in each year during the 2015-2020 period.	N/A	N/A

1.5.2. Inputs – ODIs

#	Input	Description	Source	Price base
1	ODI name	Name of the defined ODI as per the final determination	Final determination – company specific Appendix, Annex 4	N/A
2	Incentive type	There are three options: 1) Numeric PCs 2) Delivery PCs 3) Bespoke	Final determination – company specific Appendix, Annex 4	N/A
3	When the reward/ penalty is crystallised	There are two options: 1) Adjustment made during AMP6 (these types of ODIs are referred to as in-period). 2) Adjustment made in AMP7 or beyond (these types of ODIs are referred to as end-of-period).	Final determination – company specific Appendix, Annex 4	N/A
4	How is a net reward / penalty of a specific ODI applied?	There are two options: 1) Revenue adjustment. 2) RCV adjustment.	Final determination – company specific Appendix, Annex 4	N/A

#	Input	Description	Source	Price base
5	Is the ODI exempt from the aggregate cap and collar?	Choice of True or False.	Final determination – company specific Appendix, Annex 4	N/A

1.5.3. Inputs – numeric PCs

#	Input	Description	Source	Price base
1	Performance commitment ('PC'): defined PC	The absolute level of performance the company has committed to delivering.	Final determination – company specific Appendix, Annex 4	N/A
2	Actual performance	The company's performance against a particular commitment specified in the same units as the relevant PC (per Annex 4).	Company regulatory accounts	N/A
3	Rounding	Allows the user to round actual performance (not used)	N/A	N/A
4	Incentive unit	The unit of measurement associated with a particular performance commitment	Final determination – company specific Appendix, Annex 4	N/A
5	Defining the reward and penalty limits: Is performing below the PC level defined as underperformance?	Choose True or False	Final determination – company specific Appendix, Annex 4	N/A
6	Penalty collar	The level of performance that limits the magnitude of a company's penalty. Underperformance that is outside this collar will not incur additional penalties	Final determination – company specific Appendix, Annex 4	N/A

#	Input	Description	Source	Price base
		under the ODI.		
7	Penalty Deadband	A boundary of the deadband region: the lowest (or highest, depending on the orientation of the incentive) level of underperformance that will not result in a penalty.	Final determination – company specific Appendix, Annex 4	N/A
8	Penalty 1 – applies in specified year	A choice of True or False for each year. Selecting True for a particular year will mean that if underperformance occurs in that year, penalty 1 will apply.	Final determination – company specific Appendix, Annex 4	N/A
9	Penalty 1 – incentive rate	Specify the incentive rate per year for penalty 1.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice.	N/A
10	Penalty 1: Apply upper and lower performance limits	A choice of True or False. This will determine whether the upper and lower performance limits are also used in Penalty 2 (see item 13 below).	Final determination – company specific Appendix, Annex 4	N/A
11	Penalty 1 – lower limit performance level	Performance at the penalty 1 lower limit will incur the maximum penalty associated with the penalty 1 performance level range.	Final determination – company specific Appendix, Annex 4	N/A
12	Penalty 1 – upper limit performance level	Performance at the penalty 1 upper limit is the starting level from which penalties within the penalty 1	Final determination – company specific Appendix, Annex 4	N/A

| #	Input	Description	Source	Price base
		performance level range are calculated. This is usually the same level as the penalty deadband.		
13	Penalty 2 inputs	If only one penalty incentive rate is applicable for the ODI then complete the penalty 1 section and leave the 'Penalty 2 – applies in specified year' flags for penalty 2 set to False. See penalty 1 inputs defined above for equivalent definitions.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice	N/A
14	Reward Deadband	A boundary of the deadband region: the highest (or lowest) level of outperformance that will not result in a reward.	Final determination – company specific Appendix, Annex 4	N/A
15	Reward Cap	The level of performance which limits the magnitude of a company's reward. Outperformance that is above the cap will not result in additional reward.	Final determination – company specific Appendix, Annex 4	N/A
16	Reward 1 – applies in specified year	A choice of True or False for each year. Selecting True for a particular year will mean that if outperformance occurs in that year, reward 1 will apply.	Final determination – company specific Appendix, Annex 4	N/A
17	Reward 1 – incentive rate	Specify the incentive rate per year for reward 1.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice.	N/A

#	Input	Description	Source	Price base
18	Reward 1: Apply upper and lower performance limits	A choice of True or False. This will also determine whether the upper and lower performance limits are used in Reward 2 (see item 21 below).	Final determination – company specific Appendix, Annex 4	N/A
19	Reward 1 – lower limit performance level	This limit is the starting level from which penalties within the penalty 1 performance level range are calculated	Final determination – company specific Appendix, Annex 4	N/A
20	Reward 1 – upper limit performance level	Performance at the reward 1 upper limit will incur the maximum reward associated with the reward 1 performance level range.	Final determination – company specific Appendix, Annex 4	N/A
21	Reward 2 inputs	If only one reward is applicable for the ODI then complete the reward 1 section and leave the 'applies in specified year' flags for reward 2 set to False. See Reward 1 inputs defined above for equivalent definitions.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice.	N/A

The figure below shows an illustrative example where performance below the PC is deemed as underperformance.

150 (Reward upper limit 2)

Reward 2 applies — R2

125 (Reward upper limit 1 and reward lower limit 2)

Over performance

Reward 1 applies — R1

110 (Reward lower limit 1)

No reward applies

100 (PC)

No penalty applies

90 (Penalty upper limit 1)

Penalty 1 applies — P1

75 (Penalty lower limit 1 and penalty upper limit 2)

Penalty 2 applies — P2

50 (Penalty lower limit 2)
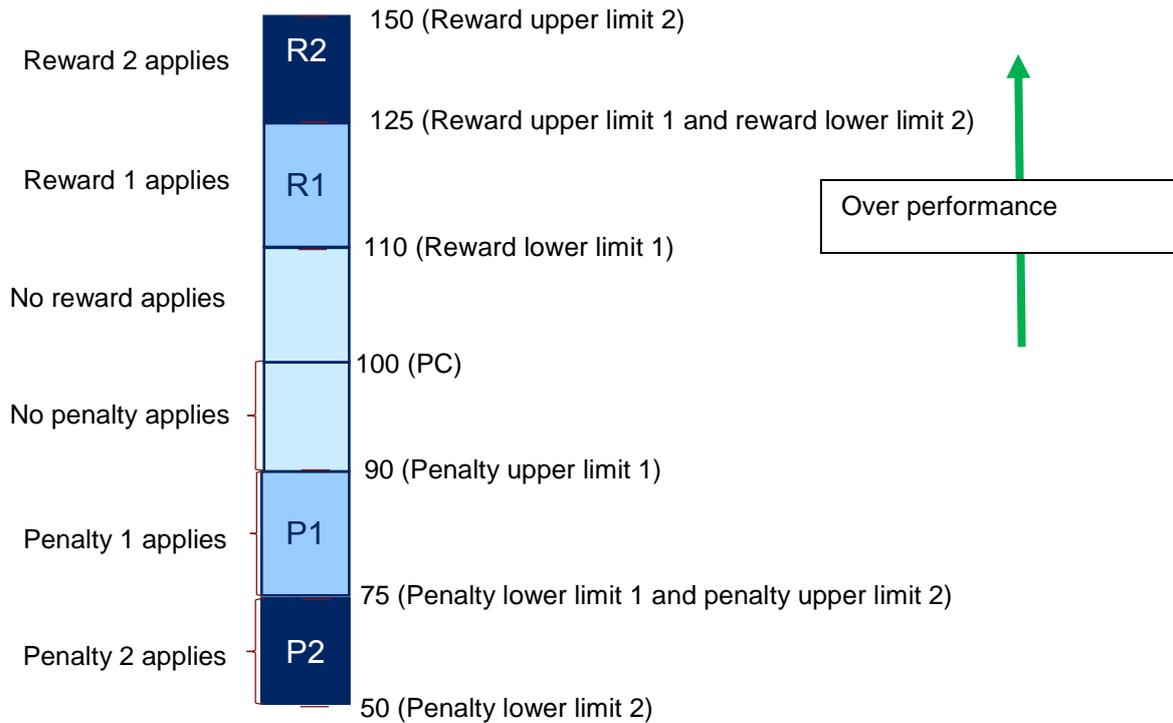
In this case, for performance between 100 and 90, no penalty would apply. For any performance worse than the penalty upper limit 1 (set at the deadband level of 90) down to 75, penalty 1 would apply. For any performance worse than 75 down to 50 penalty 2 would apply. Similarly, for any performance between 100 and 110, no reward would apply. For performance better than 110 up to 125, reward 1 would apply. For any performance better than 125 up to 150, reward 2 would apply.

An equivalent figure when performance above the PC is deemed as underperformance is outlined below:

150 (Penalty lower limit 2)

Penalty 2 applies — P2

125 (Penalty lower limit 1 and penalty upper limit 2)

Penalty 1 applies — P1

110 (Penalty upper limit 1)

No penalty applies

100 (PC)

No reward applies

Over performance

90 (Reward lower limit 1)

Reward 1 applies — R1

75 (Reward upper limit 1 and reward lower limit 2)
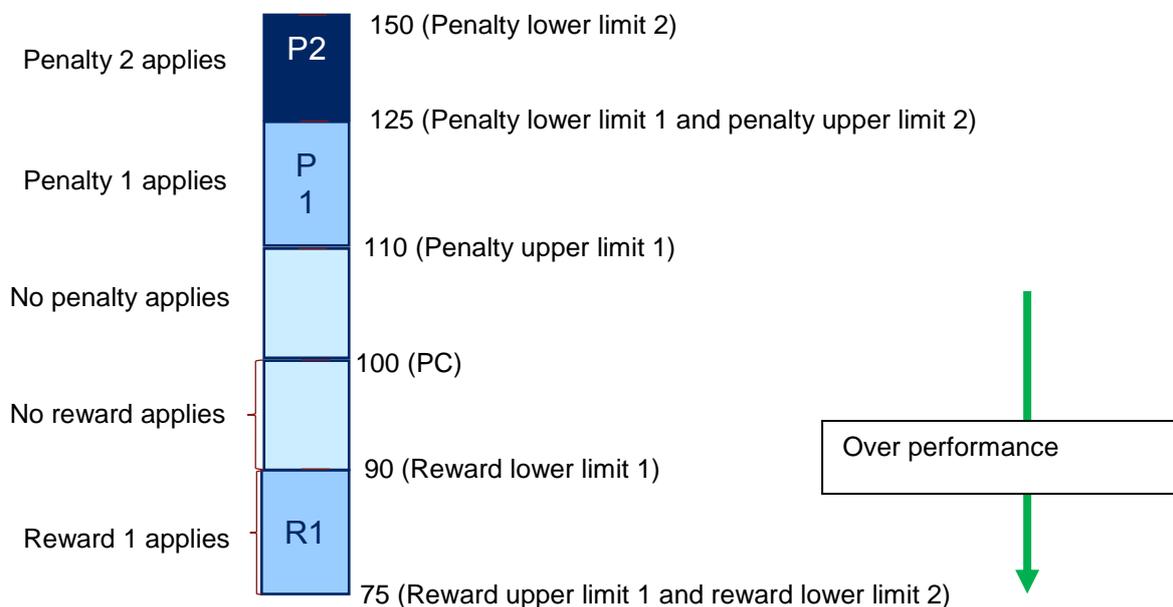
Reward 2 applies   R2
50 (Reward upper limit 2)

In this case, for performance between 100 and 110, no penalty would apply. For any performance worse than the penalty upper limit 1 (set at the deadband level of 110) up to 125, penalty 1 would apply. For any performance worse than 125 up to 150 penalty 2 would apply. Similarly, for any performance between 100 and 90, no reward would apply. For performance better than 90 down to 75, reward 1 would apply. For any performance better than 75 down to 50, reward 2 would apply.

1.5.4 Inputs – delivery PCs

#	Input	Description	Source	Price base
1	Delivery PC: delivery in specified year	Select the year in AMP6 that the company has committed to deliver the PC.	Final determination – company specific Appendix, Annex 4	N/A
2	Delivery cap – for early delivery	The earliest year that a company can receive a reward for early delivery.	Final determination – company specific Appendix, Annex 4	N/A
3	Delivery collar – for delayed delivery	The latest year that a company can receive a penalty for delayed delivery.	Final determination – company specific Appendix, Annex 4	N/A
4	Actual performance: delivery occurred in specified year	The year in AMP6 in which the PC is actually delivered. If the PC is not delivered in AMP6 then it is classified as 'Undelivered'. For partial years and cases where pro-rating apply, the bespoke PCs section can be used to capture the performance and corresponding rewards/penalties.	Final determination – company specific Appendix, Annex 4	N/A
5	Penalty if delayed delivery occurs	Choice of True or False. Selecting True means that a penalty will be incurred for each year of delay.	Final determination – company specific Appendix, Annex 4	N/A

#	Input	Description	Source	Price base
6	Penalty applied for each delayed year	The penalty applied for delayed delivery. Only applies if the 'Penalty if delayed delivery occurs' switch is set to True.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice	N/A
7	Penalty if non-delivery in AMP6 occurs	Choice of True or False. Selecting True means that a penalty will be incurred if delivery does not occur in AMP6.	Final determination – company specific Appendix, Annex 4	N/A
8	Penalty applied once for non-delivery in AMP6	If delivery does not occur in AMP6 then a penalty is applied once for the non-delivery.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice	N/A
9	If the penalty for non-delivery is applied, the penalties for delays are not applied?	Choice of True or False. Selecting False means that if delivery does not occur in AMP6, a penalty for each year of a delay plus a penalty for non-delivery will apply.	Final determination – company specific Appendix, Annex 4	N/A
10	Reward if early delivery occurs	Choice of True or False. Selecting True means that a reward will be incurred for each year of early delivery.	Final determination – company specific Appendix, Annex 4	N/A
11	Reward applied for each early-delivery year	The reward applied for early delivery Only applies if the 'Reward if early delivery occurs' switch is set to True.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice	N/A
12	Reward if overall delivery in AMP6 occurs	Choice of True or False. Selecting True means that a reward will be incurred if delivery occurs in AMP6.	Final determination – company specific Appendix, Annex 4	N/A

#	Input	Description	Source	Price base
13	Reward applied for overall delivery in AMP6	If delivery occurs in AMP6 then a reward is applied once for this delivery.	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice	N/A
14	If early delivery rewards are applied, the reward for overall delivery is not applied?	Choice of True or False. Selecting False means that if delivery occurs in AMP6, a reward for each year of early delivery plus a reward for overall delivery will apply.	Final determination – company specific Appendix, Annex 4	N/A

1.5.5 Inputs – bespoke PCs

#	Input	Description	Source	Price base
1	Actual performance (pass / fail)	User specifies whether the PC has been achieved using a pass or fail flag	Company regulatory accounts	N/A
2	Associated penalty for a 'fail'	User specifies the total penalty per year relating to a 'fail'	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice	12/13
3	Associated reward for a 'pass'	User specifies the total reward per year relating to a 'pass'	Final determination – company specific Appendix, Annex 4 and as recalibrated following company menu choice	12/13

1.6 Calculations

1.6.1. Calculations – numeric PCs

#	Calculation overview	Calculation detail
1	Is performing below the PC level defined as underperformance?	True or False flag, as defined by the user in the inputs section
2	When performing below the PC level is defined as underperformance : Are upper and lower limits defined for rewards?	True or False flag, as defined by the user in the inputs section
3	When performing below the PC level is defined as underperformance : Reward magnitude	If the upper and lower limits are defined Then take the minimum of the Reward 1 upper limit and actual performance levels Less Reward 1 lower limit Take the maximum of this result and zero Multiply by the Reward 1 incentive rate and 'applies in year' flag Add the equivalent calculation for Reward 2 Otherwise take the minimum of the reward cap and actual performance level Less the reward deadband Take the maximum of this result and zero Multiply by the Reward 1 incentive rate and 'applies in year' flag
4	When performing below the PC level is defined as underperformance: Are upper and lower limits defined for penalties?	True or False flag, as defined by the user in the inputs section
5	When performing below the PC level is defined as underperformance: Penalty magnitude	If the upper and lower limits are defined Then take the Penalty 1 upper limit Less the maximum of the Penalty 1 lower limit and actual performance levels Take the maximum of this result and zero Multiply by the Penalty 1 incentive rate and 'applies in

#	Calculation overview	Calculation detail
		year' flag
		Add the equivalent calculation for Penalty 2
		Otherwise take the Penalty deadband
		Less the maximum of the Penalty collar and actual performance
		Take the maximum of this result and zero
		Multiply by the Penalty 1 incentive rate and 'applies in year' flag
6	When performing above the PC level is defined as underperformance: Are upper and lower limits defined for rewards?	True or False flag, as defined by the user in the inputs section
7	When performing above the PC level is defined as underperformance: Reward magnitude	If the upper and lower limits are defined Then take the Reward 1 lower limit Less the maximum of the Reward 1 upper limit and actual performance levels Take the maximum of this result and zero Multiply by the Reward 1 incentive rate and 'applies in year' flag Add the equivalent calculation for Reward 2 Otherwise take the reward deadband Less the maximum of the Reward cap and the actual performance level Take the maximum of this result and zero Multiply by the Reward 1 incentive rate and 'applies in year' flag
8	When performing above the PC level is defined as underperformance: Are upper and lower limits defined for penalties?	True or False flag, as defined by the user in the inputs section
9	When performing above the PC level is defined as underperformance: Penalty magnitude	If the upper and lower limits are defined Then take the minimum of the Penalty 1 lower limit and actual performance levels Less Penalty 1 upper limit Take the maximum of this result and zero

#	Calculation overview	Calculation detail
		Multiply by the Penalty 1 incentive rate and 'applies in year' flag
		Add the equivalent calculation for Penalty 2
		Otherwise take the minimum of the penalty collar and actual performance level
		Less the penalty deadband
		Take the maximum of this result and zero
		Multiply by the Penalty 1 incentive rate and 'applies in year' flag
10	Net Reward/(Penalty)	If performing below the PC level is defined as underperformance
		Reward magnitude (as calculated in #3)
		Less Penalty magnitude (as calculated in #5)
		If performing above the PC level is defined as underperformance, When performing above the PC level earns a reward: Reward magnitude (as calculated in #7)
		Less When performing below the PC level earns a reward: Penalty magnitude (as calculated in #9)

1.6.2. Calculations – delivery PCs

#	Calculation overview	Calculation detail
1	Has early delivery been achieved?	If the PC is undelivered then false Otherwise if the year of delivery is before the PC delivery date then true
2	Number of years of early delivery	If early delivery has been achieved then PC delivery date less the actual delivery date
3	Reward for early delivery (uncapped)	Number of years of early delivery multiplied by reward rate for early delivery
4	Number of years between delivery cap and delivery PC	PC delivery date less delivery cap date
5	Reward cap for early delivery	Number of years between delivery cap and delivery PC multiplied by the reward rate for early delivery
6	Reward for early delivery – applied in year of delivery	Minimum of reward cap for early delivery and reward for early delivery (uncapped)
7	Has there been a late delivery?	If the PC is undelivered then false Else if the year of delivery is after the PC delivery date then true
8	Does a reward apply for overall delivery?	If there has been a late delivery then false Otherwise if 'Reward if overall delivery in AMP6 occurs' is True then True
9	Reward for overall delivery	'Does a reward apply for overall delivery?' flag Multiply by reward rate for overall delivery
10	Total reward	If early delivery has been achieved Then reward for overall delivery Add reward for overall delivery multiplied by 'If early delivery rewards are applied, the reward for overall delivery is not applied?' flag Otherwise reward for overall delivery
11	Penalties associated with delivery	Calculations are similar to those set out above for rewards
12	Net Reward/(Penalty)	Total reward less total penalty

1.6.3. Calculations – bespoke PCs

#	Calculation overview	Calculation detail
1	Total reward for years where PC was passed	'Pass' flag multiplied by reward for that pass
2	Total penalty for years where PC was failed	'Fail' flag multiplied by penalty for that fail
3	Net reward/(penalty)	Total reward less total penalty

1.6.4. Aggregation– total rewards and penalties for in-period ODIs

#	Calculation overview	Calculation detail
1	Determine whether the ODI reward/penalty crystallises during AMP6	Defined by user input
2	Net Reward/(Penalty) for specific ODI	'Crystallisation' flag multiplied by net reward/(penalty) for ODI
3	ODIs where the aggregate cap/collar applies:	For each specific ODI:, calculate the net reward or penalty by adding rewards and penalties for each year Aggregate the net rewards for all ODIs Aggregate the net penalties for all ODIs If net rewards are greater than the aggregate cap, apply the aggregate cap If net penalties are less than the aggregate collar, apply the aggregate collar Calculate the adjustment to net rewards in final year if cap is applied Calculate the adjustment to net penalties in final year if collar is applied. Calculate the total revenue adjustment for each year by summing the rewards and penalties incurred in the relevant year. For year 5 also apply the adjustment to net rewards and to net penalties.
4	ODIs where the aggregate cap/collar does not apply: Aggregation of net	Sum the net rewards if value is a reward and the ODI is exempt from aggregate cap

#	Calculation overview	Calculation detail
	rewards	
5	ODIs where the aggregate cap/collar does not apply: Aggregation of net penalties	Sum the net penalties if value is a penalty and the ODI is exempt from aggregate collar
6	Total reward/penalty for in-period ODIs – revenue adjustments (post-tax)	Sum the net rewards/(penalties) for in-period ODIs
7	Total reward/penalty for in-period ODIs – revenue adjustments (pre-tax)	Divide the sum of the net rewards and penalties for in-period ODIs by 1 minus the marginal statutory tax rate for each year For year 5 add the adjustment to tax if the aggregate cap and collar applies.
8	Financing cost	N/A
9	Indexation	The reward/penalties will be indexed to nominal values using Nov-Nov actual inflation, consistent with the indexation of Allowed Revenues. This adjustment is not set out in these calculations.

1.6.5. Aggregation – total rewards and penalties for end of period ODI

#	Calculation overview	Calculation detail
1	Net Reward/(Penalty) for end-of-period ODIs	If reward or penalty crystallised in AMP7 or beyond Then Net reward / (penalty) for specific ODI Else zero
2	ODIs where the aggregate cap/collar applies: Aggregation of net rewards (uncapped)	Sum the net rewards/(penalties) if value is a reward and ODI is subject to aggregate cap
3	ODIs where the aggregate cap/collar applies: Aggregation of net penalties (uncapped)	Sum the net rewards/(penalties) if value is a penalty and ODI is subject to aggregate collar
4	ODIs where the aggregate cap/collar applies: Apply the aggregate cap	If net rewards for ODIs subject to aggregate cap are greater than the aggregate cap with in-period net rewards considered

#	Calculation overview	Calculation detail
	to net rewards	Then apply aggregate cap Else net reward
5	ODIs where the aggregate cap/collar applies: Apply the aggregate collar to net penalties	If net penalties for ODIs subject to aggregate cap are less than the aggregate collar with in-period net penalties considered Then apply aggregate collar Else net penalty
6	ODIs where the aggregate cap/collar does not apply: Net reward / (penalty) per ODI	If ODI is exempt from the aggregate cap Then reward / (penalty) for specific ODI
7	ODIs where the aggregate cap/collar applies: Rewards allocated to revenue per ODI	If ODI has reward allocated to revenue and is subject to aggregate cap Then net reward for ODI Divided by aggregation of net rewards (uncapped) Multiplied by the aggregation of net rewards with cap applied
8	ODIs where the aggregate cap/collar applies: Penalties allocated to revenue per ODI	If ODI has penalty allocated to revenue and is subject to aggregate collar Then net penalty for ODI Divided by aggregation of net penalties (uncapped) Multiplied by the aggregation of net penalties with cap applied
9	ODIs where the aggregate cap/collar does not apply: Rewards allocated to revenue per ODI	If ODI has reward allocated to revenue and is exempt from the aggregate cap Then net reward for ODI
10	ODIs where the aggregate cap/collar does not apply: Penalties allocated to revenue per ODI	If ODI has penalty allocated to revenue and is exempt from the aggregate cap Then net penalty for ODI
11	ODIs where the aggregate cap/collar applies: Rewards allocated to RCV per ODI	If ODI has reward allocated to RCV and is subject to aggregate cap Then net reward for ODI Divided by aggregation of net rewards (uncapped) Multiplied by the aggregation of net rewards with cap

#	Calculation overview	Calculation detail
		applied
12	ODIs where the aggregate cap/collar applies: Penalties allocated to RCV per ODI	If ODI has penalty allocated to RCV and is subject to aggregate collar Then net penalty for ODI Divided by aggregation of net penalties (uncapped) Multiplied by the aggregation of net penalties with cap applied
13	ODIs where the aggregate cap/collar does not apply: Rewards allocated to RCV per ODI	If ODI has reward allocated to RCV and is exempt from the aggregate cap Then net reward for ODI
14	ODIs where the aggregate cap/collar does not apply: Penalties allocated to RCV per ODI	If ODI has penalty allocated to RCV and is exempt from the aggregate cap Then net penalty for ODI
15	Net reward/(penalty) applied to revenue	Sum of rewards and penalties allocated to revenue[2]
16	Net reward/(penalty) applied to RCV	Sum of rewards and penalties allocated to RCV[3]
17	Tax adjustment	Rewards and penalties for end-of-period ODIs will impact the tax allowance in the next price control period. The tax allowance is not set out in these calculations.
18	Financing cost	There is no financing cost adjustment for this mechanism.
19	Indexation	A one-off adjustment will be applied at PR19 to convert the output of the mechanism to the PR19 price base using actual RPI. This adjustment is not set out in these calculations.

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[2] The adjustment will be calculated separately for each price control (wholesale water, wholesale wastewater or retail)

[3] The adjustment will be calculated separately for each price control (wholesale water and wholesale wastewater)

2. Totex menu reconciliation

2.1. Background and purpose

In PR14 we introduced the concept of totex. This has replaced the separate allowances for opex and capex that were used in previous price controls. We also designed a totex menu. The totex menu provides extra incentives for companies to reveal information and for some extra flexibility in setting totex baselines and cost sharing factors. The totex menu generates a reward/penalty that is dependent on a company's menu choice and its actual totex spend at the end of the 2015-2020 period. The reward/penalty is designed to give companies an incentive to deliver outcomes using totex similar or equal to Ofwat's efficient baseline and to further incentivise accurate totex forecasting.

Companies made their final menu choices on 16th January 2015 following publication of the final determinations. A company's menu choice represents a chosen expenditure level relative to Ofwat's estimate of efficient totex baseline costs. For example, a menu choice of 80 means that the company's expenditure choice is 20% lower than Ofwat's estimate of efficient baseline totex and a menu choice of 115 represents a company expenditure choice 15% higher. For each menu choice there is an associated level of allowed expenditure that is used to set price limits and a cost sharing rate. The cost sharing rate is used to define the amount of out or under performance that is shared between companies and customers. For example, a cost sharing rate of 60% implies that the company will retain 60% of any underspend but would incur 60% of any overspend relative to a companies' allowed expenditure.

The menus for enhanced companies are different to those for other companies in two respects:

- Enhanced menus embody greater cost sharing so these companies will retain a higher share of any cost outperformance in respect of efficiency gains.
- The enhanced menus include a narrower range of choices reflecting Ofwat's greater confidence in enhanced plans.

At PR14, companies could propose the proportion of totex that should be recovered on a 'pay as you go' (PAYG) basis, rather than being added to the regulatory capital value (RCV), to help manage bill profiles, affordability and financeability issues over time. Ofwat reviewed these proposals and intervened on some occasions to protect customers.

2.2. Mechanism structure

At PR19 we will need to calculate the appropriate PR19 adjustments to revenue and RCV, based on the totex performance of a company over the price control period. The totex menu adjustment model allows us to do this. To calculate the adjustment we need to:

- Calculate adjusted baseline totex (which is final determination baseline totex adjusted to take account of Interim Determinations of K (IDoKs) and any other relevant changes).

- Calculate menu totex (which is actual totex adjusted for various items to bring it in line with the baseline totex (see section 2.3)).

- Compare baseline totex and menu totex to generate a menu reward or penalty.

We want to allow customers to share in an element of the financing costs/benefits that are generated from totex under/over performance in each year of a price control. To achieve this, we reprofile the totex reward/penalty and allocate a value in each year of the price control that is proportional to the value of a companies' baseline totex in that year with respect to total baseline totex. The reprofiled reward/penalty is then added to the totex under/over performance in each year of the price control and a financing cost adjustment applied to bring the per year totex adjustment to PR19 in net present value terms. The total PR19 totex adjustment is the sum of this calculation for each of the five years of the price control. This approach is consistent with the approach used to reprofile the reward/penalty in the CIS model.

To allocate the final totex adjustment between revenue and RCV we will calculate a weighted average of the companies PAYG profile, using the proportion of baseline totex in each year to weight the companies' annual PAYG rate.

The model is designed to calculate the revenue and RCV adjustments for the water and wastewater controls in parallel. For calculating the TTT Control adjustments (which applies to Thames Water only), the model will need to be run separately with the TTT Control inputs inserted in the sewerage input lines.

2.3. Mechanism specific considerations

Components of menu totex

Ofwat defines menu totex as:

Menu totex = Actual totex minus Total Costs excluded from the menu

The table below summarises the items included in the calculation above. It sets out the separate items excluded from actual totex to generate menu totex and provides the reference of the item in the RAG 4.05. Where items are not included in RAG 4.05, further commentary is provided below the table.

Table 1: Calculation of menu totex

Item name	Reference in RAG 4.05	Comments (referenced to the notes below the table)
Menu totex	n/a	Note 1
Actual totex	4B.6	
Total costs excluded from the menu equals the sum of the items below:		
Third party services (opex)	2B.8	
Third party services (capex)	2B.13	
Pension cash contributions	2B.17	
Other cash items	2B.18	
Disallowable costs	n/a	Note 2
Transition expenditure (negative)	n/a	Note 3
Legacy depreciation	n/a	Note 4

Note 1 – Menu totex: This item does not currently match the item called "menu totex" in the RAG 4.05 pro forma 4B. The calculation of Menu totex should be carried out using the items referenced in the table above until Ofwat reviews the RAGs in April 2015. Any update to the RAGs will change the references in the middle column of the table, but the calculation will remain the same.

Note 2 – Disallowable costs: In setting price controls, we have used an overarching principle that costs should only feature in our totex menu for activities where it is appropriate for a company to share an over (or under) spend with their customers. We define disallowable items as costs that do not conform with this overarching principle. These include:

- costs associated with impairment of other businesses,
- costs related to financing (bond issuance fees, refinancing, takeover costs),
- fines and investigation costs,
- compensation claims, and
- any other costs where the activity driving it does not, ex ante, have a reasonable expectation of customer benefit.

To allow Ofwat to exclude disallowable costs from Actual submitted totex, companies must provide details of any such cost items incurred. Companies should include all such items in their RAGs on line 4B.4 and will be expected to include detailed commentary behind each item. This definition of disallowable costs does not

currently feature in the RAGs, but will be included (subject to this consultation) after Ofwat reviews the RAGs in April 2015.

Note 3 – Transition expenditure: Refers to capital expenditure incurred in 2014-15 for the delivery of assets in the price control period 2015-20. Although incurred in 2014-15, forecast expenditure (to account for the blind year) was included in the menu baseline. Actual totex must therefore be adjusted to incorporate the actual value of this expenditure to ensure the incentive on cost performance is retained. Transition expenditure is presented in the table as a negative value to reflect the point that it must be added to Actual totex to contribute to the menu baseline calculation. The actual value of transition expenditure is not part of the RAGs, but will be included in companies' submissions towards the blind year reconciliations. We expect companies to submit this information as part of the July 2015 annual reporting.

Note 4 – Legacy depreciation: Depreciation on any investment in retail assets before 1 April 2015 is called legacy depreciation. The value of this depreciation was included in the final determination menu baseline and was calculated on a historical cost basis. For 2015-16 onwards Ofwat has asked companies to report these costs using the principal use basis. Under the principal use basis, depreciation is wholly allocated to the price control unit (e.g. wholesale water, wastewater, household and non-household retail) which uses the asset the most. The company then reflects the cost of other parts of the business using the asset through recharges. Companies must report the value of recharges to other parts of the business in their RAGs. However, the value of the recharge required to add back (or take away from) to Actual Totex to compare against the final determination menu baseline is not currently an explicit line item in the RAGs. The recharges would be included in line items 2A.6, "Recharges made from other segments for use of fixed assets" and line item "A.7 "Recharges made to other segments for use of fixed assets" in pro forma 2A. Ofwat expects to review the RAGs to include a specific line to include recharges to and from the retail business for legacy assets.

Treatment of PR19 blind year

Companies provide an estimate of their final year performance, and any deviation from this is assessed at PR24. This is consistent with the treatment of the blind year for other mechanisms and with the treatment of the PR09 blind year.

Interaction with other mechanisms

Where adjustments arise due to uncertainty mechanisms, Ofwat will ensure the inputs to the totex menu model are adjusted accordingly.

For water business rates there is a separate uncertainty mechanism that operates as a notified item. If the notified item is activated it could quality for an Interim Determination of K (IDoK) which allows price controls to be adjusted between periodic reviews. Ofwat has set out in each companies' Price Control Determination letter how companies' allowed totex should be allocated if an IDoK is successful. This mechanism is included as part of the totex reconciliation model and is reflected in the tables below.

2.4. Outputs

#	Output	Description	Price base
1	Revenue adjustment	The net revenue adjustment at PR19 resulting from totex under/over performance during AMP6	12/13
2	RCV adjustment	The net RCV adjustment at PR19 resulting from totex under/over performance during AMP6	12/13

2.5. Inputs

#	Input	Description	Source	Price base
1	Company name	Company name	N/A	N/A
2	Company type	Select either WaSC or WOC	N/A	N/A
3	Is company enhanced?	Select either Enhanced or Non-enhanced. A different menu applies for enhanced/ non-enhanced companies	N/A	N/A
4	Financing rate	The Final Determination Weighted Average Cost of Capital	Final determination – company specific appendix	N/A
5	Implied menu choice	The implied menu choice number for water and wastewater derived from company business plans	Final determination – company specific appendix	N/A
6	Final menu choice	The submitted final menu choice for water and wastewater	Menu choice confirmation letter 16th January 2015	N/A
7	Baseline totex	Ofwat's view of the menu cost baseline	Companies' populated final determination menu models	12/13

#	Input	Description	Source	Price base
8	Allowed totex	The allowed expenditure generated from the menu (including allowed income) in final determinations	Companies' populated final determination menu models	12/13
9	Actual totex	Reported actual totex for water and wastewater	Companies' annual regulatory reporting	Outturn
10a	Adjustments to baseline totex if IDoK successful	To reflect the impact of a successful IDoK on items other than business rates. This line is used to adjust baseline totex if activated to ensure baseline totex remains consistent with menu totex as an input to the menu. It captures IDoKs for relevant changes in circumstances (RCC) and IDoKs associated with the TTT price control.	Company's PR19 business plan or IDoK submissions	Outturn
10b	Other adjustments to baseline totex	To account for any other adjustments to baseline totex that might be required	PR19 BPs	Outturn
11	Adjustments to Actual totex	To make adjustments to Actual totex to generate Menu totex	Company's PR19 business plan	Outturn
11a	Totex exclusions	Actual totex line items to be excluded in menu totex: third party costs, pension cash contributions, other cash items, disallowables	Companies' annual regulatory reporting (see details above)	Outturn

#	Input	Description	Source	Price base
11b	TTT Control: logging up / (down) of scope swaps	Costs associated with the reallocation of scope from the Infrastructure Provider to Thames Water that are subject to the logging up process	Company's PR19 business plan	Outturn
11c	TTT control: Land - 100:0 (customer:company) cost sharing factor	TTT control land costs are not subject to the standard menu incentives and have a customer sharing rate of 100:0 to ensure customers benefit from future land disposals (see paragraph 1 of section 5.4)	Company's PR19 business plan	Outturn
11d	Totex inclusions	Line items to be included in menu totex: transition expenditure and legacy depreciation. If legacy depreciation is a recharge from the wholesale control to retail, input value into model as a negative number. If legacy depreciation is a recharge from the retail control to wholesale, input value into the model as a positive number.	Companies' annual regulatory reporting (see details above)	Outturn
		•		

#	Input	Description	Source	Price base
12	Cost sharing rate: value at menu baseline of 100	The cost sharing rate of a menu choice of 100. Defined for enhanced and non-enhanced companies.	Policy document 'Setting price controls for 2015-20 – policy and information update', Table A3.	N/A
13	Menu range: Upper and lower bounds for the menu choice	Upper and lower bounds for the menu choice. Defined for enhanced and non-enhanced companies	Policy document 'Setting price controls for 2015-20 – policy and information update', Table A3.	N/A
14	Breakeven point: choice and outturn	These are the breakeven points at the 100 menu choice level	Policy document 'Setting price controls for 2015-20 – policy and information update', Table A3.	N/A
15	Efficiency incentive: slope	The rate of change of the cost sharing rate	Policy document 'Setting price controls for 2015-20 – policy and information update', Table A3.	N/A
16	Interpolation: Ofwat baseline and company forecast	The allowed expenditure weightings between Ofwat's baseline and the company forecast	Policy document 'Setting price controls for 2015-20 – policy and information update', Table A3.	N/A
17	Menu coefficients	Model specific menu input parameters (internally derived)	Policy document 'Setting price controls for 2015-20 – policy and information update', Table A5	N/A
18	PAYG ratio	The profile of PAYG ratio allowed in final determinations	Final determination – company specific appendix	N/A

#	Input	Description	Source	Price base
19	Business rates IDoK	Mechanism to account for the notified item on business rates. Only activated if after successful IDoK. See Annex of company FD letters and section 5.1 of this report for further details.	IDoK submissions	Outturn
20	TTT Control - items subject to logging up at 75:25 (customer:company) cost share	Mechanism to account for logging up items that are subject to the bespoke cost sharing rate of 75:25 (customer: company) (see para 5 of section 5.4).	PR19 BPs	Outturn

2.6. Calculations

#	Calculation	Description
1.1 Baseline totex		
1	Baseline totex	Copy of baseline totex from input sheet.
2	Rebase adjustments to baseline totex	Rebase inputted values for IDoK and other adjustments to 12/13 prices using average year RPI
3	Baseline totex (including adjustments)	Baseline totex Add rebased adjustments to baseline totex.
1.2 Actual totex		
4	Actual totex (before exclusions)	Copy of actual totex from input sheet rebased to 12/13 prices using average year RPI
5	Totex exclusions	Sum of all totex exclusions rebased to 12/13 prices using average year RPI
6	Totex inclusions	Sum of all totex inclusions rebased to 12/13 prices using average year RPI

#	Calculation	Description
7	Menu totex	Actual totex Subtract totex exclusions (third party costs, pension cash contributions, other cash items, disallowables) Add totex inclusions (transition expenditure and legacy depreciation) and other adjustments.
2.1 Menu coefficients		
8	Menu coefficient upper and lower bounds	Calculate upper and lower bounds of efficiency incentive, allowed expenditure and additional income
9	Menu coefficients for chosen menu for water and wastewater	Company specific menu coefficients based on Final menu choice
10a	Efficiency incentive coefficient	Efficiency incentive slope multiplied by the Final menu choice value Add Efficiency incentive constant
10b	Allowed expenditure coefficient	Allowed expenditure slope multiplied by the Final menu choice Add Allowed expenditure constant
10c	Additional income coefficient	Additional income 2nd order parameter multiplied by the Final menu choice value squared Add Additional income 1st order parameter multiplied by the Final menu choice Add Additional income constant
3.1 Menu performance		
11	Menu to baseline totex ratio	Sum of Menu totex in 2015-2020 period Divided by sum of baseline totex (including adjustments) in 2015-2020 period
12	Final totex menu level	Menu totex to baseline totex ratio Multiplied by 100
13	Reward or penalty menu level	Allowed Expenditure Coefficient less Final totex menu level Multiplied by Efficiency incentive coefficient Add Additional income coefficient
14	Reward or penalty ratio	Reward or penalty menu level

#	Calculation	Description
		Multiplied by 100
3.2 Totex menu reward/penalty		
15	Reward or penalty including additional income	Reward or penalty ratio Multiplied by sum of Baseline totex (including adjustments) over 2015-2020 period
16	Total reprofiled reward/penalty	Reward or penalty including additional income Reprofiled over 2015-2020 period proportionate to Baseline totex
3.3 Totex adjustment		
17	Totex under/over performance	Calculates the totex under / over performance in each year of the price control for calculation of the PR19 totex adjustment. Totex under /over performance in each year is calculated as: Actual totex in each year Less allowed totex in each year Adjusted for: The IDoK business rates adjustment (water only) Logging up/down adjustments (TTT Control only) All calculations, except Allowed totex, are rebased to 2012-13 prices using Average year RPI
18	Totex adjustment	Totex adjustment not including financing costs, calculated as: Totex under/over performance Add reprofiled reward or penalty
19	Totex adjustment including financing costs	Future value of ex post totex adjustment of prior year annual adjustments.

#	Calculation	Description
		Totex adjustment in year '*y*' calculated from Totex adjustment incurred in year '*x*' plus 0.5 to account for payment at mid-point of year
		Totex adjustment
		Multiplied by $(1 + WACC)^{y-x+0.5}$
20	Totex adjustment at PR19	Sum of totex adjustments (with financing costs included) to 2019/20
4 PRI9 Adjustments		
21	Weighted average PAYG ratio	Sumproduct of the PAYG ratio and baseline totex
22	Revenue adjustments	Totex adjustment at PR19
		Multiplied by Weighted PAYG ratio
23	RCV adjustment	Totex adjustment at PR19
		Multiplied by 1 minus Weighted PAYG ratio
Addenda		
24	Tax adjustment	The RCV adjustment will impact the tax allowance in the next price control period. The tax allowance is not set out in these calculations. The revenue adjustment will not impact the tax allowance in the next price control period.
25	Indexation	A one-off adjustment will be applied at PR19 to convert the output of the mechanism to the PR19 price base using actual RPI. This adjustment is not set out in these calculations.

3. WRFIM

3.1. Background and purpose

WRFIM is a new PR14 mechanism which replaces the PR09 Revenue Correction Mechanism (RCM). WRFIM has been introduced to improve companies' revenue forecasting within the new flexible wholesale revenue controls.

We consulted on WRFIM in April 2014 in 'Consultation on the wholesale revenue forecasting incentive mechanism for AMP6' and further clarified our approach in 'Draft price control determination notice: technical appendix A6 – risk and reward, and responded to companies concerns on the mechanism. We finalised our approach in 'Final price control determination notice: policy chapter A7 – risk and reward' taking account of company responses to the April consultation and company representations following the draft determinations.

The purpose of the mechanism is to reduce the impact of deviations on customer bills arising from revenue forecasting deviations by:

- Adjusting companies allowed revenues for each year to take account of differences between actual and projected revenues; and
- Incentivising companies to avoid revenue forecasting errors by applying a penalty to variations that fall outside the set revenue flexibility threshold.

This chapter describes the operation of the WRFIM, including the detailed reconciliation calculations and how these will translate to an adjustment at the end of the price control period. These are also illustrated in the supporting spreadsheets published alongside this document.

3.2. Mechanism structure

The formula set out in 'Final price control determination notice: policy chapter A7 – risk and reward' will be used to calculate the WRFIM:

$$\text{RFIM}_t = -\left\{(\text{RR}_{t-2} - \text{AR}_{t-2}) \times \left[1 + \left(\frac{I + PR}{100}\right)\right] \times \left[1 + \left(\frac{I}{100}\right)\right]\right\} \times (1 + \text{RPI}_{t-1})$$
$$\times (1 + \text{RPI}_t)$$

Where:

RR_{t-2} The revenue recovered in charging year t-2, with the first year subject to the adjustment beginning in 1 April 2015

AR_{t-2} The allowed revenue in charging year t-2, with the first year subject to the adjustment beginning in 1 April 2015, and with the allowed revenue from the charging years beginning 1 April 2017 being adjusted by the RFIM for that year. From year three onwards adjusted allowed revenues will be used to take account of penalties from prior periods.

I The specified discount rate, which enters the above formula as an integer. The rate is in line with the company wholesale weighted average cost of capital as set out in the final determination company specific appendix.

PR The penalty rate, taking a positive value if $RR_{t-2} > [(1 + RFT) \times AR_{t-2}]$, a negative value if $RR_{t-2} < [(1 - RFT) \times AR_{t-2}]$, or else being equal to 0. Denoting the forecast error $(RR_{t-2} - AR_{t-2})/AR_{t-2} = x\%$, the magnitude of penalty rate is: (i) 3% for all variations if $|x\%| > 3\%$; (ii) $3\% * (|x\%| - 2\%)/(3\% - 2\%)$ if $2\% < |x\%| < 3\%$. The result enters the above formula as a number. For example, for a penalty rate of 3%, the PR enters the formula as number 3.

RFT the revenue flexibility threshold. Lower threshold is 2% and upper threshold is 3%. It enters formula as an integer.

RPI_t the Retail Prices Index used for wholesale price controls for year t as specified in Condition B in the licence. The licence requires wholesale revenue controls to adjust by the percentage change in the RPI between the November in the current and previous years.

t the year of WRFIM adjustment.

The details of the WRFIM mechanism were discussed in the April 2014 consultation and further in the draft determination and final determination. Here we reiterate the key information from previous publications and provide greater clarity over how the mechanism will operate in practice through the price control period 2015-20.

1. Allowed revenues in the final determination are set in 2012-13 prices. Comparisons between projected allowed revenues and actual revenues in each year will be in the prices of the year concerned.

2. At the end of each charging year in the period 2015-20, we will compare projected allowed revenues for each wholesale service in that year in the final determinations with the revenues that companies actually recovered in that year (which will be reported in July as part of their annual reporting, following external assurance).

3. Allowed revenues, set by the RPI+/-K factor in the licences are unaffected by the WRFIM and other PR14 incentives. The existing licences only allow us to adjust revenues at the next period review. Notwithstanding the licence modifications for the three companies (which provide for the adjustment to allowed revenues for ODIs rewarded or penalised within the 2015-20 period), the WRFIM will be applied to allowed revenues at the next price review **for all companies**.

4. For companies with licence modifications which enable in-period ODIs, the adjustments to allowed revenues for the ODIs are reflected in WRFIM calculation in the period concerned to reflect the licence. The WRFIM therefore does not give rise to an additional incentive for companies with licence modifications. We note in section 3.3 below that there are specific circumstances where variances may occur and how these will be addressed.

5. To derive the PR19 adjustment arising from the WFRIM, the under-or over-recovery of revenue in charge year (t-2) will be reflected in charge year (t) through a 'notional' annual allowed revenue adjustment. This is used as the WRFIM incentive baseline, which is designed purely for the purpose of deriving the WRFIM incentive adjustments at PR19.

6. Above a threshold of +/-3%, a penalty of 3% applies to the full revenue over or under-recovery. Between +/-2% and +/-3%, a linear sliding scale of penalty ranging from zero to 3% applies. The adjustment, including this penalty, is uplifted by two years' wholesale WACC and RPI to account for the two-year lag in reflecting financing cost and inflation. If a company's revenue forecasting deviation exceeded +/-6% in a given year it will also be required to submit more detailed variance analyses alongside the standard annual regulatory reporting requirements. As set out in the consultation on the wholesale revenue forecasting incentive mechanism for 2015-16, companies will need to commit to best endeavours to recover their adjusted allowed revenue within the control period, in line with the basis of the price limits in their licences (subject to the constraints of their other existing obligations, including compliance with prevailing charging rules). Where they do not do this, companies could be subject to potential enforcement action (and/or potential consequences in setting price limits for the following price control period).

7. At the time of the price review in 2019, due to the two year time-lag set out within the mechanism, the difference between the allowed revenues and recovered revenues in the final two years of AMP6 (2018-19 and 2019-20) and any resulting penalty should be applied in 2020-21 and 2021-22, i.e. the first two years of the next price control period, if WRFIM continues to exist in same way. However, we intend to make adjustments to take account of these two years and include adjustments to allowed revenues in the price review at PR19. Our approach to adjustments at PR19 for the two years are set out below:

- For the year 2018-19 we will have complete information on actual recovered revenues and RPI at the time of setting allowed revenues at PR19, therefore, we will make an adjustment to allowed revenues for the incentive calculated through the WRFIM formula for PR19. We will make adjustments for RPI and the specified discount rate recognising that only one year uplift would be appropriate, instead of two years as implied by the formula.

- **Blind year:** For the year 2019-20 we will not have complete information on which to calculate the incentive through the WRFIM formula. For this year we intend to request updated forecasts for revenues from companies as part of the business planning process at PR19. We will then calculate the incentive based on the difference between the adjusted allowed revenues and updated forecast revenues. We will make adjustments for RPI and the specified discount rate recognising that no uplift would be appropriate in the final year as the penalty will be in outturn prices for 2019-20 without the two year time lag. Variances in the blind year will be included in the reconciliation at PR24.

There will be no further changes to the incentive for financing costs or inflation as these are both accounted for within the WRFIM formula described above.

Illustrative example of WRFIM, as published in April 2014

The arrows demonstrate the two year time lag between the year used to calculate the penalty (t-2) and the year the penalty is added to the allowed revenues (t) to calculate the adjusted allowed revenues. The adjusted allowed revenues are then used to calculate future variances between the allowed revenue and the recovered revenue to determine subsequent penalties. The mechanism operates on a cumulative basis i.e. the penalty for year 1 (2015-16) impacts year 3 (2017-18) and then year 5 (2019-20). The penalty for year 2 (2016-17) impacts year 4 (2018-19). Therefore, years 4 and 5 penalties that are applied with a two year time-lag in years 6 and 7 (2020-21 and 2021-22) are the only relevant years for the PR19 adjustments as they incorporate the impact of years 1-3 (2015-16 – 2017-18). As mentioned in the previous paragraph these will be adjustments for financing costs and RPI to enable inclusion in the 2019 price review.

Revenue Flexibility Threshold:	2.00%
Example penalty rate:	3.00%
RPI	0%

	AMP5	AMP6					AMP7	
Year	2014 - 15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	2020 - 21	2021 - 22
FD14 Allowed Revenue	-	100.00	102.00	103.00	104.00	105.00	-	-
AMP5 RCM blind year adjustment	-	-	1.04	-	-	-	-	-
AMP6 forecasting incentive adjustment including over / under recovery true up	-	-	-	-3.32	-1.04	-2.57	3.10	1.54
Adjusted Allowed Revenue	**-**	**100.00**	**103.04**	**99.68**	**102.96**	**102.43**	**-**	**-**
Revenue Recovered	**-**	**103.00**	**104.00**	**102.00**	**100.00**	**101.00**	**-**	**-**
Over (+) / Under (-) recovery	**-**	**3.00**	**0.96**	**2.32**	**-2.96**	**-1.43**	**-**	**-**
Threshold (based on adj allowed revenue)	-	2.00	2.06	1.99	2.06	2.05	-	-
AMP6 forecasting incentive adjustment including over / under recovery true up	-	3.32	1.04	2.57	-3.10	-1.54	-	-
AMP5 RCM adjustment	1.04		-	-	-	-	-	-

3.3. Mechanism specific considerations

Representations on the application of the incentive

Actual recovered revenues are to be reported to Ofwat in July each year as part of the annual reporting requirements. Where variances between the allowed revenues and the recovered revenues give rise to an incentive under WRFIM and where a company believes the effect of the incentive is not appropriate, companies should

submit additional evidence and representations alongside their regulatory reporting. There will be a high evidential bar. We expect companies to have consulted with their customers about the reasons for the variance and their representation.

At a minimum, we expect the representations to satisfy the following conditions:

- The WRFIM calculation has given rise to an incentive payment (i.e. the variance is above the flexibility threshold)
- The primary drivers for the variance above the revenue flexibility threshold were beyond the control of the company and beyond the normal business risks compensated within the risk and reward package; and
- The company has taken reasonable steps to mitigate a variance beyond the revenue flexibility threshold.

There are specific areas that we have identified including those in the draft determination, technical appendix A6 that could give rise to variance above the revenue flexibility threshold. These are discussed in the table below.

Issue	Application
Thames Tideway Tunnel	For Thames' wastewater service, WRFIM covers all of the revenue Thames collects for its wholesale wastewater control, the separate TTT control and the revenue that passes through to the infrastructure provider (IP). Variations in wholesale revenue for the TTT control would be subject to the general WRFIM representation process.
Surface water drainage rebates	We note that the surface water drainage (SWD) rebates schemes implemented by companies in the period 2015-20 could lead to variations in revenues.
	Under the existing regulatory reporting framework including the regulatory accounting guidance for 2015-20, SWD rebates form part of companies' revenues, and unlike uncontrollable demand risks, the rebates are under the control of companies' management. So to the extent that other customer charges can be adjusted to take account of rebates within the overall revenue controls, they would have no impact on potential revenue forecasting errors. In addition, even if the refunds of historically mis-billed SWD services could have implication for customers' bills, their magnitudes tend to be very small compared to the total bills and so their impacts on forecasting errors are unlikely to be material. Notwithstanding this, the general WRFIM representation process would apply.
Connection and	During 2015-20 actual demand for wholesale services due to number

Issue	Application
infrastructure charges	of connections could vary from the assumptions made as part of the final determination. These demand variations will affect the actual revenues that companies collect from charges covered by the wholesale revenue controls in each year and this could give rise to an incentive under WRFIM. There is no exclusion from WRFIM for these fluctuations, subject to the general WRFIM representation process.
In period ODIs	For the three companies with licence modifications, allowed revenues can be adjusted in period for rewards / penalties relating to the applicable performance commitments in line with company licences. There may be a scenario where companies decide not to take a full reward in order to share the gain with customers. In this instance the allowed revenues and recovered revenues will have a variance which may mean that a penalty should otherwise apply under WRFIM. Ofwat will consider representations as part of WRFIM representations process, including whether these variances should be removed entirely from the WRFIM adjustment made at PR19.

3.4. Outputs

#	Output	Description	Price base
1	Revenue adjustment	The total revenue adjustment resulting from over/under recovery of wholesale revenues through 2015-20. This is calculated separately for wholesale water and wastewater.	Outturn prices

3.5. Inputs

#	Input	Description	Source	Price base
1	Company name	Company name	NA	NA
2	Company type	Type – WaSC or WoC	NA	NA
3	Revenue flexibility threshold	The lower flexibility threshold is 2% and the upper flexibility threshold is 3%.	Final price control determination notice: policy chapter A7 – risk and reward (A7.5)	NA

#	Input	Description	Source	Price base
4	Penalty rates	The penalty rate is 3% with a linear sliding scale between 2-3% per the following formula: The penalty rate, taking a positive value if $RR_{t-2} > [(1 + RFT)$ x $AR_{t-2}]$, a negative value if $RR_{t-2} < [(1 - RFT)$ x $AR_{t-2}]$, or else being equal to 0. Denoting the forecast error $(RR_{t-2} - AR_{t-2})/AR_{t-2} = x\%$, the magnitude of penalty rate is: (i) 3% for all variations if $\|x\%\| > 3\%$; (ii) $3\% * (\|x\%\| - 2\%)/(3\% - 2\%)$ if $2\% < \|x\%\| < 3\%$. The result enters the above formula as a number. For example, for a penalty rate of 3%, the PR enters the formula as number 3.	Final price control determination notice: policy chapter A7 – risk and reward (A7.5)	NA
5	Specified discount rate	The specified discount rate is the individual companies' post tax WACC(including any company specific adjustments).	Final Determination – Company specific appendix	NA
6	Threshold for additional variance analysis	The threshold that will trigger Ofwat requiring additional information to be submitted by companies as part of their regulatory reporting is 6%	Final price control determination notice: policy chapter A7 – risk and reward (A7.5)	NA
7	Annual allowed revenue (water and wastewater)	Annual allowed revenues, per the licence, (which includes any in-period ODI and IDoK adjustments) (Note: interaction between the ODI reconciliation mechanism and WRFIM) The WRFIM calculation is performed separately for water and wastewater	Company final determination, as adjusted for ODIs or IDoK in accordance with the licence.	2012/13

#	Input	Description	Source	Price base
		revenue adjustments.		
8	Actual revenue recovered annually and forecast for 2019-20	Annual wholesale charge revenue for water or wastewater as reported in company's regulatory reporting. In the final year of 2015-20 the recovered revenue will be based on a forecast as this information won't be available at the time of setting prices at PR19.	Company regulatory reporting. Wholesale charge revenue for water/ wastewater – RAG pro forma 2I.	Outturn
9	AMP5 RCM blind year adjustment for water and wastewater*	The blind year adjustment for RCM is an input to the WRFIM calculation to calculate (notional) adjusted allowed revenue Extract from the draft determination technical chapter A7 – We will complete the existing RCM reconciliation process for the 2014-15 'blind year' after final determinations, and then consistently reflect this in adjustments to the WRFIM baseline for 2016-17 (Note: interaction with reconciling 2014-15 data and materiality)	Legacy blind year reconciliation model for difference in revenue adjustment when comparing RCM per the published final determination model and the revenue adjustment for RCM per the updated model to take account of 2014-15 actual performance data.	2012/13
10	November actual RPI series	Nov-Nov RPI. WRFIM is calculated in outturn prices, therefore, the November RPI series used annually will be for the November in the Prior Year and that published for the immediately preceding November.	Retail Prices Index between that published for the month of November.	N/A

*Due to the 2014-15 reconciliation taking place when the revised COPI index becomes available (as all PR09 incentive mechanisms are assessed against materiality thresholds in aggregate) there could be a delay in the adjustment for RCM in the WRFIM calculation. The model includes an input for 'blind year timing delay' so it is flexible to adjust to the time RCM is calculated. RCM will be included in the WRFIM calculation where aggregate adjustments to revenue are above the materiality threshold for PR09 incentive mechanisms.

3.6. Calculations

#	Calculation overview	Calculation detail
1	Convert Allowed Revenue into outturn price base	Allowed revenue (12/13 price base) per the company specific appendix of the final determination for each company Multiplied by relevant Nov-Nov (2012) indexation series
2	Calculate the 2014-15 RCM adjustment in outturn price base	The AMP5 RCM will be calculated in a 2012-13 price base in the PR09 legacy blind year calculations spreadsheet. The AMP5 RCM enters the WRFIM calculation in 2016-17 in an outturn price base. This is inflated using the Nov-Nov (2012) indexation series
3	Calculation to reflect the penalty calculated in year t-2 into year t in order to adjust the allowed revenues	WRFIM calculates an adjustment in year t-2, however, the adjustment is not applied in the formula until year t. This calculation reflects the movement of the penalty from year t-2 up to year t in the model.
4	Annual adjustment to allowed revenue to take account of penalties brought forward from previous periods (t-2) and also to include the AMP5 RCM adjustment	Allowed revenue Add AMP5 RCM adjustment Add WRFIM adjustment calculated in t-2 The result of the calculation will be an adjusted allowed revenue figure. This is subsequently used as the basis for the 'notional allowed revenues' in the WRFIM formula.
5	Calculate over or under recovery of revenue relative to adjusted allowed revenue	Revenue recovered Minus Adjusted Allowed Revenue from 4 above.
6	Calculate penalty rate	If percentage of under / over recovery is greater than minimum flexibility threshold (which is 2% per the WRFIM formula outlined in the mechanism structure section

#	Calculation overview	Calculation detail
		above).
		Then calculate the penalty rate using the formula set out in the mechanism structure section. The penalty rates per the WRFIM formula are:
		(1) For variations greater than 3%, the penalty rate is 3%
		(2) For variations (x%) between 2% and 3%, the penalty rate is $3\% * (|x\%| - 2\%)/(3\% - 2\%)$
7	Calculate the WRFIM adjustment for year t based on the performance in year t-2	See WRFIM formula as defined above.
		This calculation is applicable for the first three years of AMP6. The remaining two year are dealt with in the calculations below.
8	Calculate final WRFIM adjustments relating to recovered revenues from 2018-19. Apply adjustment in 2019-20.	Apply only one year of RPI and discount factor in the WRFIM adjustment relating to the recovered revenue from 2018-19:
		$$\text{WRFIM}_t = -\left\{(\text{RR}_{t-1} - \text{AR}_{t-1}) \times \left[1 + \left(\frac{I + PR}{100}\right)\right]\right\} \times (1 + \text{RPI}_{t-1})$$
		The formula here reflects the fact that the penalty is only being applied with a 1 year time lag as opposed to 2 year as it is being calculated to adjust allowed revenues in PR19.
9	Calculate final WRFIM adjustments relating to recovered revenues from 2019-20.	No application of RPI and discount factor required in the WRFIM adjustment relating to the recovered revenue from 2019-20:
		$$\text{WRFIM}_t = -\left\{(\text{RR}_t - \text{AR}_t) \times \left[1 + \left(\frac{PR}{100}\right)\right]\right\}$$
		The formula here reflects the fact that the penalty is only being applied with a 0 year time lag as opposed to 2 year as it is being calculated to adjust allowed revenues in PR19.
10	Tax adjustment	The revenue adjustment for WRIFM in the next price control period will not impact on the tax allowance in the next price control period.

4. Household retail mechanism

4.1. Background and purpose

The household retail control for 2015-20 represents the first separate price control for customer facing household 'retail' services. We aim to provide regulatory protection over household retail prices by setting a total revenue control for each company, based on the efficient costs of retail activities and projected customer numbers.

As set out in the final price control determination notice: policy chapter A5 – household retail costs and revenues, there is an automatic annual modification to allowed household retail service revenues in each year of the price control to account for the difference between actual and forecast customer numbers and meter penetration. This does not constitute an adjustment to allowed revenues within the period but gives companies the opportunity to reflect variances in customer numbers in future charges.

Earlier in PR14, we also considered the need for a revenue forecasting incentive mechanism (RFIM) for retail, similar to the wholesale revenue forecasting incentive mechanism (WRFIM), but concluded not to proceed as companies already have incentives to align revenues for non-contestable retail household revenues to the allowed revenues set in the price determination in a given year. Our rationale for this is set out in the draft piece control determination notice: technical appendix A6 – risk and reward.

This chapter describes how we will reconcile between forecast and actual customer numbers in a given year and how we will account for over or under recovery of "household retail revenues per customer type" in the absence of a more complex mechanism such as RFIM. This reconciliation is also illustrated in the supporting spreadsheets published alongside this document.

4.2. Mechanism structure

Reconciliation for adjustment of allowed revenues for variance in customer numbers

Total estimated allowed revenues are based on the projected number of customers and meter penetration set out in companies' business plans. This will be assessed annually, however, if actual customer numbers differ from the projected values, then a modification will be made to allowed household retail revenues in order to account for this at the next price control.

Revenue modifications will be made using the equation:

Revenue modification

$$= \sum_{y=1}^{5} \sum_{c=1}^{6} (actual\ customer\ numbers_{y,c} \\ - forecast\ customer\ numbers_{y,c}). modification\ factor_{y,c}$$

Where y=years (2015-16 to 2019-20) and c=customer type

Forecast customer numbers are set out in the final determination company specific appendix, as are the modification factors for each company. Companies are required to submit actual customer numbers to Ofwat annually as part of the regulatory reporting requirements. At the beginning of each financial year companies should reforecast customer numbers for that year and recover the associated revenues from customers.

Modification factors include an allowance for the net margin. This allowance is based on forecast nominal wholesale charges paid by retailers to provide services to household customers. These modification factors will not be updated for differences between forecast and actual wholesale charges as it would make the calculations considerably more complex and less transparent.

We will perform a reconciliation at the end of the price control period to adjust allowed revenues based on the actual number of customers in each period. Any adjustment required at the end of the period will be reflected as a revenue adjustment at PR19. Because we expect that companies will adjust their charges based on their reforecasts, the adjustment at the end of the period will be small. Companies are accountable for their own forecasting through the price control period.

To do this, we will calculate the adjusted allowed revenue based on the forecast customer numbers and the modification factor less the revenue modification adjustment. We will then compare this against the reforecast customer numbers and revenues that would have been recovered from that number of customers. The difference will be the over/under recovery of revenues that will be adjusted in PR19.

Reconciliation for over/under recovery of revenue per customer type

Through the final determinations we have placed the onus on companies to undertake a reconciliation of the allowance and actual revenue per customer type and to adjust charges in subsequent years where necessary. We will perform an additional reconciliation at the end of the price control period to make an adjustment to company revenues where companies have over/under recovered on revenues per customer type. Similarly to the adjustment for the reconciliation of customer

numbers, this adjustment will also be reflected in PR19 allowed revenues. The focus through the period will be on companies taking responsibility to accurately recover revenues from customers and adjusting charges to minimise the impact of adjustments to allowed revenues set in PR19.

PR19 blind year

For 2019-20 we will have incomplete data on customer numbers and revenue recovered, therefore, we will treat this year as the blind year. For this year we will request companies to submit a forecast for customer numbers and for revenues for the year 2019-20. A reconciliation will be performed in 2020-21 when we have the data to perform a true-up of the revenues based on actual revenue recovered and the actual number of customers for 2019-20. This revenue adjustment will be reflected in the retail allowed revenues at PR24.

4.3. Outputs

#	Output	Description	Price base
1	Net adjustment to Revenue	The total revenue adjustment for household retail due to differences in actual and forecast customer numbers and differences in revenue per customer type.	Outturn

4.4. Inputs

#	Input	Description	Source	Price base
1	Forecast customer numbers	Forecast customer numbers as set out in the final determinations	Final Determination - Company specific appendix	N/A
2	Reforecast customer numbers	Each company will submit new customer number forecasts for each customer type at the beginning of each year	Company regulatory reporting. Note: Ofwat expects to review the RAGs in April 2015. This will include the number of customers for the next	N/A

#	Input	Description	Source	Price base
			charging year (equivalent to current year information in RAG Proforma 2F).	
3	Actual customer numbers	Actual customer numbers for each customer type each year.	Company regulatory reporting. Number of customers – RAG Proforma 2F.	N/A
4	Allowed revenue from household retail	The amount of revenue that each company is allowed per the final determination for the household retail control	Final Determination - Company specific appendix	Outturn
5	Modification Factors	Each company has a specific modification factor for each customer type each year.	Final Determination – Company specific appendix	N/A
6	Actual revenue collected	The revenue that each company actually collected per customer type.	Company regulatory reporting. Retail revenue per customer type – RAG Proforma 2F.	Outturn

4.5. Calculations

#	Calculation overview	Calculation detail
1	Excess/shortfall of actual over reforecast customer numbers	Actual customer numbers minus reforecast customer numbers
2	Additional/ shortfall of revenue expected from reforecast customer numbers	Excess/shortfall of actual over reforecast customer numbers multiplied by modification factor
3	Revenue expected from reforecast customer	Reforecast customer numbers multiplied by

#	Calculation overview	Calculation detail
	numbers	modification factor
4	Excess/shortfall of reforecast revenue compared to actual revenue collected	Revenue expected from reforecast customer numbers minus actual revenue collected
5	Net adjustment	Additional/shortfall of revenue expected from customer numbers plus excess/shortfall of reforecast revenue compared to actual revenue collected. This reflects the adjustment as a result of a difference between reforecast and actual customer numbers.
6	Tax adjustment	The revenue adjustment in the next price control period will not impact on the tax allowance in the next price control period
7	Financing cost adjustment	There is no financing cost adjustment within this reconciliation mechanism. However, in the event that there are very material variances in companies' household revenues, we may apply a financing cost adjustment at PR19.
8	Indexation adjustment	There is a one-off adjustment at PR19 to convert the output of the mechanism from outturn prices to the PR19 price base using actual RPI. This adjustment is not set out in these calculations. We note there is no RPI allowance in the retail price control throughout 2015-20.

5. Uncertainty mechanisms

Water business rates

5.1. Background and purpose

All companies have an uncertainty mechanism for the revaluation of business rates in 2017. The risks associated with water business rates are likely to be material and will apply across companies.

The uncertainty mechanism is designed to provide an incentive for companies to argue for reasonable treatment in the rating review on behalf of customers.

5.2. Mechanism structure

The uncertainty mechanism for water business rates operates as a notified item for PR14 and as such could qualify for an Interim Determination of K (IDoK), which allows price controls to be adjusted between periodic reviews. It can only be triggered by relevant items, the value of which, in aggregate, must exceed 10% of an appointee's turnover. Likewise, the value of a change relating to one issue must be in excess of the triviality threshold of more than 2% of the company's turnover.

The uncertainty mechanism includes a 'sharing rate' which is set out in the final determinations policy chapter A7. The sharing rate is:

- For South West Water and Sembcorp Bournemouth Water, 80%:20% customer: company
- For all other companies, 75%:25% customer: company.

The mechanism ensures that companies are compensated for 75% (or 80%) of any additional expenditure on business rates beyond the amount included in their baselines. If the Notified Item is not activated, additional expenditure on business rates will be shared with customers at the totex menu sharing rate, which could be between 44% and 54%. The calculation of the water business rates uncertainty mechanism is set out in the licence.

The mechanism interacts with the totex menu reconciliation. In the event of an IDoK, the totex reconciliation will calculate the appropriate per year adjustments to totex over/under performance to ensure companies are compensated at the correct sharing rate.

Thames Tideway Tunnel uncertainty mechanism

5.3. Background and purpose

There are a range of standard industry uncertainty mechanisms and mechanisms for managing risk that apply in respect of the Thames Tideway Tunnel (TTT) wholesale control. These include RPI indexation, five-yearly price reviews, totex sharing rates, the flexibility provided by ODIs, a mechanism for logging up and down certain costs at PR19 and the interim determination of K (IDoK) and substantial effects provisions.

The modifications we made to Thames Water's licence which enabled a separate TTT Control also incorporated a bespoke materiality threshold for the IDoK mechanism. This allows Thames Water to request the price limit for the TTT Control to be reopened in circumstances that relate to specified Notified Items and Relevant Changes of Circumstance (RCC) that exceed 10% of the RCV for the TTT Control as at 31st March in the prior year. The materiality threshold is 10% of TTT Control RCV to provide a meaningful threshold for both 2015-20 and future control periods, should the TTT Control be extended beyond 2020.

5.4. Mechanism structure

The key elements of the TTT uncertainty mechanism are set out in table AA5.1 in Thames' company specific appendix. These elements are summarised below.

1. All costs that do not fit the definition of land costs are subject to the totex menu that applies to the TTT control. Land costs (as defined on page 272 of the Thames Water Company Specific Appendix) are subject to a 100:0 cost sharing rate (customer:company) so that customers benefit in full from the proceeds of land sales on the future disposal of land. This is addressed through the totex model, whereby applicable land costs are removed from the Totex baseline and a 100:0 sharing rate applied.

2. The materiality threshold for an IDoK is defined in Thames Water's licence as 10% of the RCV in the TTT control; the triviality threshold for Notified Items or Relevant Change of Circumstances is 2% (after the menu cost-sharing rate) of 2015-20 totex. Costs exceeding the triviality threshold may be logged up (or down) at PR19 subject to the criteria set out in the final determination. The process we will adopt for logging up at PR19 is similar to the mechanism used in the change protocol included in the PR09 price controls.

3. There is a Notified Item for "scope swaps" between the Infrastructure Provider (IP) and Thames Water. This addresses only the efficient, net change in costs to Thames Water that arise from the reallocation of scope from the IP to Thames Water to secure efficient project delivery in the light of any delay to the appointment of the IP. Thames Water may ask for costs associated with scope swaps to be remunerated at an IDoK (subject to passing triviality and materiality thresholds) or request the costs to be logged up at PR19 (subject to passing the triviality threshold); under either circumstance, we expect Thames Water to provide evidence to demonstrate that such 'scope swaps' are efficient and in the customer interests.

   Where Thames Water chooses to trigger a notified item during the period 2015-20 this will be addressed within the IDoK process and adjustments will be made to the menu baseline and FD cost threshold to reflect the changes that arise from the outcome of the IDoK process. Where Thames Water requests these costs to be logged up, the net, additional, efficient costs will be remunerated at PR19.

4. Relevant Changes of Circumstances (RCCs) applies to the TTT Control. We confirmed in the final determination that we expect that a change to the Preparatory Work Notice, or to the Project Specification Notice, including withdrawal of these documents could comprise a RCC and would be eligible for an IDoK application.

5. There is a Notified Item in the event that the IP Procurement process is unsuccessful for specified reasons outside Thames Water's control. If the Notified Item is triggered, Thames Water may apply for an IDoK, subject to passing the triviality and materiality thresholds. Alternatively, it may request any costs that qualify under this Notified Item to be logged up at PR19 using a 75:25 sharing rate (customers:company), subject to those costs passing the triviality threshold. This mechanism reflects our expectation that Thames Water should have appropriate incentives to manage its ongoing costs up to the materiality threshold. The sharing rate provides an incentive on Thames Water to manage its costs efficiently in the event that the costs are not sufficient to pass the materiality threshold to trigger an interim determination.

   Where Thames Water chooses to trigger a notified item during the period 2015-20 this will be addressed within the IDoK process and adjustments will be made to the menu baseline and FD cost threshold to reflect the changes that arise from the outcome of that process. Where Thames Water opts for logging up and logging down the eligible costs will be excluded from the menu reconciliation and these costs will be rolled into the RCV subject to a 75:25 sharing rate.

6. Reconciling 2010-15 performance: 2014-15 adjustments

6.1. Background and purpose

There were six incentive mechanisms included in PR09 which were designed to protect customers by encouraging companies to improve the quality and efficiency of their services and to manage uncertainty more effectively. Adjustments to companies' revenue and/or regulatory capital values (RCVs) were made in PR14 to reflect performance in the 2010-15 price control period. The adjustments were based on actual company data for 2010-14 and forecast data for 2014-15 (as the data for 2014-15 was not available at the time of the final determinations: this was a 'blind year').

We noted in final price control determination notice: policy chapter A4 – reconciling 2010-15 performance the following:

> "To reconcile the PR09 incentive mechanisms, we have had to make forecasts of company performance and expenditure for the last year of the current price control period. A final reconciliation of the mechanisms will be undertaken in the summer of 2015 to take into account companies' actual performance and expenditure in 2014-15 (with the CIS being reconciled in 2016). In carrying out this reconciliation we will take a proportionate approach (for example, applying materiality thresholds where appropriate) to making adjustments for company's actual performance and implement these changes at the next wholesale price control review in 2019."

This chapter describes how the 'blind year' for the PR09 incentive mechanisms will translate to an adjustment in the next wholesale price review in 2019. This is also illustrated in the supporting spreadsheets published alongside this document and described in sections 6.4-6.6 below.

In addition to the PR09 incentive mechanisms we also set out the way we will adjust the Thames Water wholesale price control at the next price review in 2019 to account for the funding included in Thames Waters PR09 final determination for a new billing system that was not implemented.

6.2. Mechanism structure

The blind year reconciliation will be performed for the following PR09 incentive mechanisms:

- Revenue Correction Mechanism (RCM);
- Capital expenditure Incentive Scheme (CIS);
- Serviceability; and
- Change Protocol including PR09 overlap (to be included in the CIS reconciliation in line with the existing CIS models).

The other PR09 incentive mechanisms – Service Incentive Mechanism (SIM) and Operating expenditure Incentive Allowance (OIA) – do not require further adjustment in the next price review in 2019. SIM was based on three year rewards/ penalties for 2011-2014 meaning that all relevant data was available at PR14. For OIA, the mechanism is dependent on whether a company has been able to outperform against its regulatory assumptions in 2013-14 only and therefore the relevant data was available at PR14.

The blind year reconciliations will be performed using the existing legacy mechanism models, as published on the Ofwat website at final determination. The reconciliations will compare: (a) the adjustments that were made to Revenue and/or RCV at PR14 as published in the company specific appendix final determination documents with; (b) the adjustments that would have been made had there been complete information for the full period, (including 2014-15) at the time of the final determination. The adjustments will be made at the next price review in 2019 where these adjustments are material. We outline our method for assessing materiality in section 6.3 'additional considerations' below. A summary of the mechanisms is set out below.

Mechanism	Description	Blind year
Revenue Correction Mechanism (RCM)	The purpose of RCM was to provide companies with a financial incentive to encourage customers to use water efficiently and to correct for differences between actual revenue collected and Ofwat's assumptions for allowed revenue at the final determinations. The RCM deals with the differences between actual tariff basket revenue for 2010-15 and forecast tariff basket revenue at the final determination (FD) 2009. RCM is designed to incentivise companies through: • Revenue true-up: it compared forecast revenue at FD09 with actual revenues. In the process, it will provide an incentive for a company	The RCM adjustment at PR14 was based on forecast data for 2014-15. The reconciliation of forecast and actual 2014-15 revenue will be performed at the same time as the reconciliation of all other PR09 incentive mechanisms (which is dependent on the availability of revised COPI because this is needed to reconcile the CIS – discussed below). The reconciliation of blind

Mechanism	Description	Blind year
	to promote water efficiency to metered customers. We reduced the revenue requirement for PR14 by the amount of revenue that the company over-recovered its allowed revenue for 2010-15. We increased the revenue requirement if the company under-recovered its revenue allowance. • Billing incentive: this incentivised companies to bill all eligible properties. Companies were rewarded/penalised if they billed more/fewer properties than expected. The incentive was the difference between expected and actual number of billed properties multiplied by 42% (the efficiency billing factor) of the average bill. • Back-billing incentive: this incentivised companies to identify properties that have been charged less than they should have been due to reasons out of the company's control. The incentive took account of customer numbers lost through competition to new appointees. We reduced the revenue correction by a further 58% of the average bill for each lost property to take account of the operation of the billing incentive.	year RCM will be incorporated into the materiality calculations (discussed below). Where adjustments are material across all tools, the adjustment for RCM will be made through the WRFIM calculation in line with the published WRFIM formula.
Capital expenditure Incentive Scheme (CIS)	The purpose of the CIS was to incentivise both cost outperformance and accurate business plans for capital expenditure. A company is rewarded if it spends less than the baseline expenditure, while it is penalised if its actual capex exceeds this baseline. **RCV adjustment:** calculates the total capex that is included in the RCV. To do this, the capex allowed in the final determinations is	The CIS adjustments at PR14 were based on forecast data for 2014-15. The reconciliation of forecast and actual data for CIS, which includes the results of the change protocol, will be reconciled when published COPI data

Mechanism	Description	Blind year
	subtracted from the RCV and the actual expenditure is added back. **CIS revenue adjustment:** in addition to applying the reward or penalty due on capital expenditure performance, this reverses any return earned on capex which was over-funded by the PR09 determination or, conversely, allows additional revenue to true-up capex under-funded by the PR09 settlement. A company can choose to spend more than the capital expenditure allowance included in price limits. This expenditure is reflected in the RCV following the next price review, but at the cost of lower outperformance incentives and reduced returns within the price limit period. The intent of the policy was that CIS rewards/penalties provide a disincentive to incur capital investment unnecessarily. Four different capex values are used from start to finish in the CIS calculations of an AMP: 1. Bid (what the company considered it needed to spend) 2. Baseline (Ofwat's view of efficient expenditure) 3. Allowance (by-product of the matrix) 4. Outturn (actuals) To derive a central estimate, we adjusted expenditure forecasts to an achievable level of efficiency for a middle ranking company. The ex-ante CIS ratio is created from the bid and baseline. The CIS ratios are the key drivers of the overall CIS incentives. For example, an ex-ante CIS ratio of 120 would mean the company view of expenditure was 20% higher than the central baseline. The ex-post CIS ratio is created from outturn and the baseline. A change protocol exists to accommodate changes to scope of the CIS. The PR09 determination reflected and	becomes available. Implicit in the calculations for the financing element of CIS is the use of COPI. During PR14 we requested companies submit their forecast COPI, where firm published data was unavailable. As announced by BIS in December 2014, COPI is undergoing review and the release of the index is currently suspended. We await further details on the future of the index. Before the announcement in December, firm values for the blind year would have become available in June 2016. Note that section 7 of this document separately sets out our approach to adjusting company RCVs to gain greater consistency in the RPI series used for financing cost adjustments and RCV adjustments in the CIS models for PR14. The need to do this was flagged in the final determinations.

Mechanism	Description	Blind year
	financed 25% of the difference between the baseline and companies' final business plan forecasts in the modelling for PR09 price limits.	
Change Protocol including PR09 overlap	The Change Protocol helped to manage changes in the outputs that companies delivered during 2010-15, and to encourage long-term sustainable development. It was designed to ensure that the price controls take account of material changes in delivery. The purpose of the PR09 overlap programme was to allow funding of projects that were planned to overlap regulatory periods. It was designed to promote better management of investment projects and encourage companies to take a long term approach to planning investment.	The reconciliations will be performed at the same time as the reconciliation of CIS and of all other PR09 incentive mechanisms. Change protocol and overlap are inputs to the CIS.
Serviceability	The Serviceability mechanism was designed to recover allowed capital costs from companies (through a shortfall in the RCV) in the event that a company failed to deliver stable serviceability. A serviceability shortfall is a recovery of expected cost from companies where they have not maintained their asset systems and services to customers and the environment (the flow of services). The shortfall is calculated based upon the performance of the measures (the outputs and hence associated outcomes to customers) regardless of whether the companies have expended the capital investment assumed at the FD09 review. We identified ten companies where improvements are required in 2014-15. We stated in the final determinations that where improvements were not delivered, a shortfall adjustment could be applied through a blind year adjustment.	The reconciliation will follow the same methodology for calculating serviceability adjustments as was adopted in PR14 for actual/forecast years. The final year actual indicator performance will feed into the serviceability shortfall models for applicable companies. The reconciliations will be performed alongside the other PR09 incentive mechanisms to align the reconciliation to the anticipated timing of the CIS reconciliation and in order to assess materiality at the aggregate level.

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Mechanism	Description	Blind year
Thames billing system shortfall	There was funding included in Thames Waters 2009 final determination for a new billing system that was not subsequently implemented. In its representation to the PR14 draft determination, Thames Water proposed a shortfall to its wholesale water and wastewater RCV of £5.4m to adjust for this underinvestment in the 2010-15 period.	As set out in Thames Water's company specific appendix in the PR14 final determination, we will include this as an adjustment for the reconciliation of performance for 2014-15. The adjustment will be calculated on a net present value neutral basis across the water and wastewater wholesale price controls, apportioned in line with customer numbers, when we next set price limits.

6.3. Additional considerations

Materiality

In the final determinations (final price control determination notice: policy chapter A4) we stated that for the final reconciliation of the PR09 incentive mechanisms, we will take a proportionate approach (for example, applying materiality thresholds where appropriate).

We will assess the PR09 incentive mechanisms in aggregate as opposed to assessing the impact of each individual mechanism. Our focus will be on the overall materiality of an impact on revenue or RCV.

In order to assess revenue adjustments we will apply a materiality threshold of +/-2% of service turnover (2014-15). This is consistent with the operation of the WRFIM under which the wholesale water revenue forecasting error is measured as a percentage of annual turnover by company. In our consultation on the WRFIM, we presented analysis that showed the average annual forecast error for water (adjusted standard deviation) varies from 1.97% to 2.78% and that the variance for wastewater

is from 2.07% to 2.39%. We consider that in future company forecasts are likely to be more accurate (due to the scope for greater pricing flexibility and greater metering penetration facilitating demand management). We have set materiality slightly below the historic standard deviations of revenue forecasting variances.

In order to assess RCV adjustments we will use a threshold of +/-0.5% of company RCV (2014-15). We consider this is appropriate because the serviceability shortfalls across water and wastewater within the PR14 final determinations range from 0.1% to 1.5% of RCV.

The mechanisms that will be aggregated to calculate the revenue adjustment will be RCM, CIS (financing costs) and Change Protocol including the overlap programme (both included in CIS models). The mechanisms that will be aggregated to calculate the RCV adjustment will be CIS and Serviceability.

RCM will be included in the calculation to determine if the overall revenue adjustment is material. However, where it is material and hence an adjustment will be made, the RCM element will be excluded from the aggregate blind year adjustment and instead adjusted through the WRFIM calculation.

Information requirement

The information that we require in order to perform the blind year reconciliations is the same as that provided as part of the business planning submissions for PR14. We expect companies to submit this information as part of the July 2015 annual reporting.

6.4. Outputs

#	Output	Description	Price base
1	RCV adjustment	The net RCV adjustment which arises because of differences in forecast and actual 2014-15 data (and hence differences in PR09 legacy adjustments). Adjustments are made where material.	2012-13
2	Revenue adjustment	The net Revenue adjustment which arises because of differences in forecast and actual 2014-15 data (and hence differences in PR09 legacy adjustments). Adjustments are made where material.	2012-13

6.5. Inputs

#	Input	Description	Source	Price base
1	RCV adjustment based on forecast 2014-15 data	The adjustment to RCV applied within the company's final determination, based on forecasts for 2014-15 for individual mechanisms.	Relevant PR09 legacy mechanism feeder models, per the values adopted in the final determination.	2012-13
2	RCV adjustment based on actual 2014-15 data	The recalculated adjustment to RCV based on outturn data for 2014-15, as calculated through the relevant PR09 mechanism feeder model for individual mechanisms.	Relevant PR09 legacy mechanism feeder models. Companies' July 2015 annual return.	2012-13
3	Revenue adjustment based on forecast 2014-15 data	The adjustment to revenue being applied at the end of the price control period, based on forecasts for 2014-15 for individual mechanisms.	Relevant PR09 legacy mechanism feeder models, per the values adopted in the final determination.	2012-13
4	Revenue adjustment based on actual 2014-15 data	The actual adjustment to revenue that is required based on outturn data for 2014-15.	Output of relevant PR09 legacy mechanism feeder models. Companies' July 2015 annual return.	2012-13
5	Financing Rate	The Final Determination Weighted Average Cost of Capital.	Final determination company specific appendix	2012-13
6	Materiality thresholds	2% of service turnover (2014-15) for revenue. 0.5% of RCV (2014-15) for RCV adjustments.	N/A	N/A

6.6. Calculations

#	Calculation overview	Calculation detail

#	Calculation overview	Calculation detail
1	Difference between actual adjustment to RCV required and adjustment based on blind year forecasts	The adjustment to RCV based on blind year forecasts is subtracted from the adjustment required based on outturn data for each mechanism
2	Difference between actual adjustment to revenue required and adjustment based on blind year forecasts	The adjustment to revenue based on blind year forecasts is subtracted from the adjustment required based on outturn data for each mechanism
3	Total RCV impact of blind year reconciliations	Calculation of all RCV impacts across the relevant PR09 incentive mechanisms
4	Total revenue impact of blind year reconciliations	Calculation of all revenue impacts across the relevant PR09 incentive mechanisms
5	Comparison of materiality thresholds to the total RCV and revenue impacts in 4 and 5 above.	This calculation applies the materiality thresholds for RCV and revenue to determine the blind year adjustments to be made at PR19 (excluding financing cost adjustments – see 6 below). This calculation where material subsequently excludes the RCM element of the revenue adjustment as this is factored into the WRFIM calculation.
6	Financing costs	The financing cost adjustments to RCV and revenue are calculated using the company specific post tax WACC. The output of 5 is subject to a financing cost adjustment over the full 2015-20 period.
7	Tax	The revenue and RCV adjustments for the next price control period will impact on the tax allowance in the next price control period. The tax allowance is not set out in these calculations.
8	Indexation	A one-off adjustment will be applied at PR19 to convert the output of the mechanism to the PR19 price base using actual RPI. This adjustment is not set out in these calculations.

7. PR09 CIS reconciliation

7.1. Background and purpose

In this rulebook we outline the indexation approach taken in the CIS models for the final determinations and we set out the approach we intend to take to indexation to adjust company RCVs at PR19.

The final price control determination notice: policy chapter A4 – reconciling 2010-15 performance outlines the approach used for indexation within the CIS models for the RCV adjustment and financing cost adjustments. For the RCV adjustment, the CIS compares allowed capex indexed using the construction output price index (COPI) forecast at the time of PR09 final determinations (FD COPI) with actual capex, and deflates this difference using outturn RPI. For the financing cost adjustment, the CIS compares allowed capex indexed using FD COPI and then deflated to 2007-08 prices using RPI forecast at the time of PR09 with actual capex deflated to 2007-08 prices using outturn RPI.

We noted in Policy Chapter A4 that Severn Trent Water had raised a representation on the different approach to indexation between the RCV and revenue adjustments in the CIS model. It stated that the financing cost adjustment generated a clawback on the financing cost for the difference between the level of FD RPI forecast at PR09 and the higher outturn values in the period 2010-15.

After reviewing Severn Trent Water's submission in October and considering the results in the PwC report (Reconciling 2010-15 Performance: Technical Review) we agreed that changes could be made to the CIS methodology, in the ways suggested by Severn Trent Water, that would be favourable to the company. However, we considered that if change were required that there was *"an alternative approach which would be to base the RCV adjustment for allowed capex on the difference between COPI and RPI forecast at the time of the PR09 final determinations. This would bring the approach to indexation in the RCV adjustment in line with financing cost adjustment. This alternative approach would have resulted in lower opening RCVs across all companies in April 2015.*" At the time we did not change our approach to indexation for the final determinations as we considered that a late change of this nature would have risked creating regulatory uncertainty. We also stated that "for 2015-20, we have made our final determination in the round, taking account of the RCV adjustment that companies have received through the 2010-15 CIS true-up, and allowing investors a reasonable return (with scope for out- and underperformance) on that basis.".

However, we noted that it would be appropriate for us to consult on how we approach adjustments to the RCV at PR19 to account for our approach to indexation at PR14. We also noted that if we considered an adjustment would be appropriate, "*there would be no need to adjust retrospectively for the revenues received in the interim. These were correctly set at PR14, based upon Ofwat's existing approach to inflation. Any change would have a prospective effect only, and would be applied industry-wide.*"

Having considered a number of approaches for the indexation of the financing cost adjustment and the RCV, we consider that it would further the customers' interests post 2019 to recalibrate the figure for the RCV at PR19 through a RCV midnight adjustment. We set out a number of options for consideration in the accompanying consultation.

Our proposed approach is to calculate the impact on company RCVs had the alternative approach to indexation been used at PR14. The alternative approach will generate a different RCV adjustment to that generated from the CIS model at PR14. As noted above we will adjust the RCV at PR19 which will represent the opening RCV at the start of the 2015-20 period less the run off earned through 2015-20. On this basis, companies will retain the run off revenues and the return earned through 2015-20. The adjustment will impact the opening RCV at PR19 only.

7.2. Additional considerations

Process for adjusting CIS for both indexation and the blind year

The diagram below illustrates the process for CIS adjustments and the models that will be used to make the adjustments required at PR19. A description of each model is set out below the diagram.
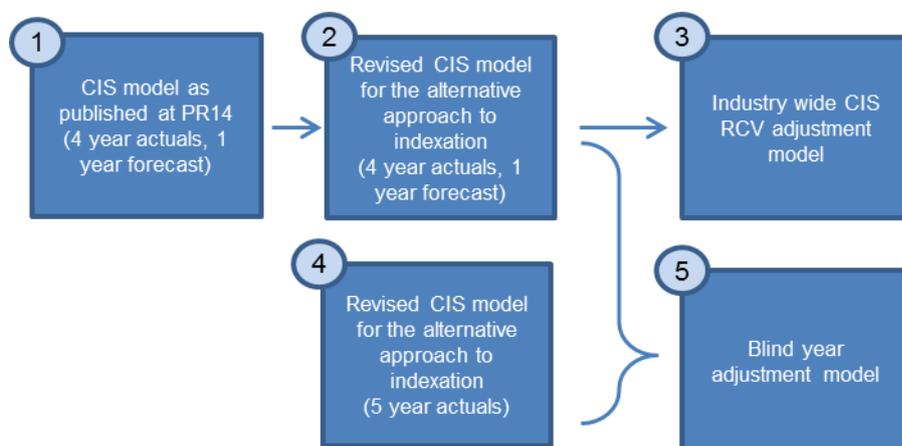
Where:

Model 1 is the populated PR14 final determination CIS feeder model as published on the Ofwat website.

Model 2 is a revised version of model 1 which has been updated to include the calculations for the RCV adjustment under the alternative approach to indexation. The calculations from model 1 are replicated in model 2 so that the difference between the two approaches can be calculated as an input to model 3.

Model 3 takes the difference between the two approaches (from model 2) and calculates the run off over 2015-20. The output of this model is the RCV adjustment at PR19. Note: Models 1, 2 and 3 are calculated prior to having made an adjustment for 2014-15 actuals. This is because companies will not have earned revenues (run-off and return) through 2015-20 on the blind year actual position and therefore the run-off should be excluded from this calculation.

Model 4 is a copy of model 2 updated to replace forecast with actuals data for 2014-15.

Model 5 (the 'blind year adjustment model') calculates the differences between model 2 and model 4 to assess the extent of the potential blind year adjustment. This model is described in full in section 6 of this document.

We have published two supporting spreadsheets (for model 2 and model 3 in the diagram above). A revised template CIS model that adjusts the calculation of indexation within the published CIS models, in line with the alternative approach

discussed above. The output of this model is the impact on opening RCV for the 2015-20 period. The inputs, outputs and calculations of this model mirror those of the CIS model published alongside the final determinations, therefore, we have not detailed each of these elements as part of this rulebook. In summary,

a) the revised template CIS model (model 2) compares allowed capex indexed using FD COPI and then deflated to 2007-08 prices using RPI forecast at the time of PR09 with actual capex deflated to 2007-08 prices using outturn RPI. This approach is consistent with the revenue adjustment in the CIS models.

b) the outputs from the revised template (model 2) are the RCV impact calculations. The spreadsheet for model 3 simulates the run-off on the RCV impact over 2015-20, and uses this to calculate the closing RCV impact at the end of the 2015-20 price control period. This closing RCV impact is the RCV adjustment made through the RCV midnight adjustment model.

Sections 7.3-7.5 below explain how b) operates.

7.3. Outputs

#	Output	Description	Price base
1	RCV adjustment	The total RCV adjustment to reflect the alternative approach to indexation within the CIS models for each company	2012/13

7.4. Inputs

#	Input	Description	Source	Price base
1	Impact of the change to indexation on the company RCVs for water and wastewater	This input is the impact that is calculated through the legacy CIS models. This is the difference in the RCV using the approach taken to indexation for the PR14 FDs and the 'alternative approach' described above.	Legacy CIS models for each company that have been revised with the alternative approach to indexation. This is model 2 from the	2012/13

#	Input	Description	Source	Price base
		diagram above.		
2	Run-off rates	The run off rates are used to determine the run-off revenues that are earned by companies through the period 2015-20. The run off rates will reduce the RCV over the five year period.	Company specific appendix from the final determinations	N/A
3	Nature of depreciation for each company	Depreciation policy for each company i.e. straight line or reducing balance	PR14 financial model for each company as published on the Ofwat website	N/A

7.5. Calculations

#	Calculation overview	Calculation detail
1	RCV Run-off calculations	Calculate the run-off through the period 2015-20 to determine the adjustment to the RCV at the end of the period to feed into the RCV midnight adjustment model.
		This calculation is performed by reducing the RCV annually by the run off rate for each year (2015-20).
		For example, in year 1 (2015) the 'impact' input (input number 1) is multiplied by 1-the run off rate for 2015.
		In year 2 (2016) the result from the year 1 calculation above is multiplied by 1-the run off rate for 2016.
		This calculation continues to year 5 to determine the RCV at the end of the period.
2	Sum of the run off through the period	This is equal to the RCV in year 5 less the RCV in year 0 i.e. the impact input.
3	Calculation of the company adjustments to RCV	This is an addition of the RCV in year 5 (after run off has been calculated) for water and wastewater expressed as a negative value as it reflects an adjustment out of the RCV.

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