Setting price controls for 2015-20

Final price control determination notice: policy chapter A4 – reconciling 2010-15 performance
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Overview

At the last price review in 2009 (PR09), we included a number of incentive mechanisms designed to protect customers by encouraging companies to improve the quality and efficiency of their services and to manage uncertainty more effectively. These mechanisms work by applying adjustments to companies’ revenue and/or regulatory capital values (RCVs) on 1 April 2015 to reflect performance in the current price control period.

This document sets out our approach to reconciling these incentive mechanisms in setting final determinations for the five years from 1 April 2015. It also summarises the results of our review of representations received following publication of the draft determinations.

Our final determinations

The most significant revenue adjustments relate to the capital expenditure incentive scheme (CIS), revenue correction mechanism (RCM) and operating expenditure incentive allowance (OIA).

- **CIS**: the CIS adjustment to revenues results in a net deduction of £356 million from wholesale revenue allowances. Overall the industry has spent less than their PR09 capital expenditure forecasts (CIS bids), but more than our PR09 baselines. This results in both a net penalty for overspending against our baselines and a negative financing true-up.

- **RCM**: we are making a net addition of £554.8 million to wholesale revenue allowances to adjust for significant under-recovery of revenues by companies in the period from 2010-15. This is due to lower than expected demand and a lower level of new connections than was anticipated.

- **OIA**: we are making a net addition of £219 million to wholesale revenue allowances to reflect operating expenditure (opex) savings achieved by companies in the period from 2010-15.

The most significant adjustments to companies’ RCVs in our final determinations relate to the CIS, change protocol, serviceability shortfalling and other adjustments.
- **CIS**: the largest adjustments, totalling a deduction of £1.11 billion, arise from the changes we have made to companies’ RCVs to reflect actual capital expenditure (capex) in the 2010-15 period. The operation of the CIS RCV adjustment ensures that companies’ actual capital expenditure over the period 2010-15 is reflected in the opening RCV on 1 April 2015.

- **Change protocol**: we are removing, in aggregate, a total of £183 million from the RCVs of those companies that have not delivered, or are unlikely to deliver, the outputs that they were funded to deliver in PR09 due to specified changes in circumstances.

- **Serviceability shortfalling**: we are deducting a total of £149 million from the RCVs of those companies where there is evidence of marginal or deteriorating performance against the set of indicators we use to monitor asset maintenance.

- **Other adjustments**: we are adding a net total of £247 million to RCVs for other wastewater adjustments. These include adjustments due to the Thames Tideway Tunnel price control which amount to £314 million above what was anticipated at PR09.

**Our approach**

At PR09 we introduced a number of new incentive mechanisms and confirmed which of the existing incentives we would continue to use for the 2010-15 period. We list the PR09 incentive mechanisms in the table below, noting whether each mechanism is reconciled through an adjustment to the RCV or allowed wholesale revenue.

**Table A4.1 PR09 incentive mechanisms**

<table>
<thead>
<tr>
<th>Incentive mechanism</th>
<th>Purpose</th>
<th>Revenue or RCV adjustment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service incentive mechanism (SIM)</td>
<td>Introduced for the first time within PR09 (to replace the overall performance assessment incentive) to reward good customer service performance and penalise poorer performance.</td>
<td>Revenue</td>
</tr>
<tr>
<td>Incentive mechanism</td>
<td>Purpose</td>
<td>Revenue or RCV adjustment?</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Revenue correction mechanism (RCM)</td>
<td>Introduced for the first time within PR09 to provide companies with a financial incentive to encourage customers to use water efficiently and to correct for differences between actual revenue collected and our assumptions for allowed revenue at our final determinations in 2009.</td>
<td>Revenue</td>
</tr>
<tr>
<td>Opex incentive allowance (OIA)</td>
<td>Introduced in 1999 (PR99) to encourage companies to achieve outperformance of our regulatory assumptions on operating costs and to counter the way that five-year price controls could lower the incentive to reduce operating cost towards the end of the price control period.</td>
<td>Revenue</td>
</tr>
<tr>
<td>Other revenue adjustments</td>
<td>At each price review we have been open to voluntary adjustments by companies which hand back money to customers, and other miscellaneous adjustments, where they do not form part of one of the other revenue mechanisms. In this price review it has been used to take account of unused allowances for the costs of issuing new equity, tax benefits arising from in-period changes in capital structure, and additional financing costs for the Thames Tideway Tunnel.</td>
<td>Revenue</td>
</tr>
<tr>
<td>Capital expenditure incentive scheme (CIS)</td>
<td>Introduced for the first time within PR09 and designed to incentivise both cost outperformance and accurate business plans for capital expenditure (capex).</td>
<td>RCV and revenue</td>
</tr>
<tr>
<td>Change protocol (logging up and down, shortfalls)</td>
<td>Introduced as part of the PR94 price review, to ensure the price controls take account of material changes in delivery.</td>
<td>RCV and revenue</td>
</tr>
<tr>
<td>Serviceability shortfalls</td>
<td>Introduced as a mechanism within PR04, to recover allowed capital costs from companies (through a shortfall in the RCV) in the event that serviceability indicators deteriorate.</td>
<td>RCV</td>
</tr>
<tr>
<td>2009 agreed overlap programme</td>
<td>Introduced for the first time within PR09, to allow funding of projects that were planned to overlap regulatory periods.</td>
<td>RCV and revenue</td>
</tr>
</tbody>
</table>
### Incentive mechanism

<table>
<thead>
<tr>
<th>Incentive mechanism</th>
<th>Purpose</th>
<th>Revenue or RCV adjustment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-15 transition mechanism</td>
<td>While not strictly a PR09 mechanism (as it was introduced as part of the PR14 methodology), this mechanism is addressed in this policy chapter. It is similar in nature to the overlap programme, allowing projects to be brought forward into 2014-15 to deliver outcomes in 2015-20.</td>
<td>RCV and revenue</td>
</tr>
<tr>
<td>RCV midnight adjustment</td>
<td>Introduced as part of the PR99 price review (to account for capital expenditure efficiencies). This is used to adjust the RCV for CIS, change protocol, and serviceability shortfalls as well as other adjustments to the RCV such as land sales, 2009-10 capex outperformance, and other adjustments proposed by companies.</td>
<td>RCV</td>
</tr>
</tbody>
</table>

In the final methodology statement for PR14, ‘Setting price controls for 2015-20: final methodology and expectations for companies’ business plans’ companies were asked as part of their business plan development to reconcile their own performance against these various mechanisms and to set out any proposed adjustments to 2015-20 price controls. Where the companies have either not put forward an adjustment; or we consider that a different adjustment should be made, we have intervened in companies’ business plans to protect customers’ interests.

Table A4.2 sets out the aggregate companies’ views, as presented in their revised business plans, and the extent to which this differed from the total industry revenue adjustments we have made in our final determinations for this price control (‘Ofwat’s view’). Table A4.3 below then compares companies’ and Ofwat’s views of the adjustments to RCVs resulting from reconciliation of the PR09 incentive mechanisms.

**Table A4.2 Revenue adjustments 2015-20 (£ million)**

<table>
<thead>
<tr>
<th>Incentive mechanism</th>
<th>Water service</th>
<th>Wastewater service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Companies’ view</td>
<td>Ofwat view</td>
</tr>
<tr>
<td>Service incentive mechanism (SIM)</td>
<td>-26.4</td>
<td>-34.6</td>
</tr>
<tr>
<td></td>
<td>Water service</td>
<td>Wastewater service</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Companies’ view</td>
<td>Ofwat view</td>
</tr>
<tr>
<td>Revenue correction mechanism (RCM)</td>
<td>337.1</td>
<td>342.3</td>
</tr>
<tr>
<td>Opex incentive allowance – post-tax (OIA)</td>
<td>113.6</td>
<td>129.0</td>
</tr>
<tr>
<td>Capital expenditure incentive scheme (CIS)</td>
<td>-123.8</td>
<td>-156.0</td>
</tr>
<tr>
<td>Tax refinancing benefit clawback</td>
<td>-4.0</td>
<td>-4.0</td>
</tr>
<tr>
<td>Equity injection clawback</td>
<td>-2.3</td>
<td>-2.1</td>
</tr>
<tr>
<td>Other revenue adjustments</td>
<td>6.8</td>
<td>-9.3</td>
</tr>
<tr>
<td>Total wholesale revenue legacy adjustments</td>
<td>300.0</td>
<td>265.3</td>
</tr>
</tbody>
</table>

**Note:**
Totals may not add up due to rounding.

**Table A4.3 RCV midnight adjustment 2015-20 (£ million)**

<table>
<thead>
<tr>
<th></th>
<th>Water service</th>
<th>Wastewater service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Companies’ view</td>
<td>Ofwat view</td>
</tr>
<tr>
<td>Closing RCV 31 March 2015</td>
<td>26,394.3</td>
<td>26,176.1</td>
</tr>
<tr>
<td>CIS</td>
<td>-444.9</td>
<td>-414.0</td>
</tr>
<tr>
<td>Net adjustment from logging up and logging down</td>
<td>-67.3</td>
<td>-73.8</td>
</tr>
<tr>
<td>Adjustment for shortfalls</td>
<td>-30.7</td>
<td>-39.7</td>
</tr>
<tr>
<td>Other RCV adjustments (net)</td>
<td>30.0</td>
<td>67.9</td>
</tr>
<tr>
<td>Opening RCV 1 April 2015</td>
<td>25,881.5</td>
<td>25,716.5</td>
</tr>
</tbody>
</table>

**Notes:**
A full reconciliation showing all of the midnight adjustments to the RCV, including the impact of logging up, logging down and shortfalls, is provided below and in annex 3 of the relevant company-specific appendices. Totals may not add up due to rounding.
The approach we are using across our PR09 incentive mechanisms has been in place for a number of years and it is important we continue to use these established approaches in reconciling performance for the period 2010-15. Maintaining a consistent and transparent regulatory approach enhances the credibility of our policies and actions over time. This, in turn, reduces regulatory risk for companies and investors and in so doing decreases the costs of doing business for regulated companies. Our oversight of company revenues continues to ensure that these cost savings are passed through to consumers.

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.

Key changes since draft determinations

There were two main areas of representation in response to our draft determinations.

- All companies, with the exception of Severn Trent Water, that were affected by serviceability shortfalls made representations about our approach.

- Severn Trent Water raised a number of detailed points about our technical approach to legacy adjustments.

In addition, we received some company-specific representations that have resulted in changes to some of our company-specific interventions.

Serviceability shortfalling

The most significant representations were as follows.

- The shortfalling approach was not consistent with our published methodology. Seven companies stated that at PR09 we had proposed to measure serviceability with reference to performance across a basket of indicators. On this basis, these companies considered that our approach of using single indicators when determining shortfalls was inconsistent with our published methodology.
• **Scale of the shortfalls was disproportionate.** Four companies stated that the scale of the shortfalls applied by Ofwat was disproportionate. These companies have proposed a variety of factors that should be recognised in shortfall calculations including changing environmental obligations over the price control period, comparative performance, gross modern equivalent asset value (GMEAV) valuations of failing assets, the number of indicators in the sub-service and the use of willingness to pay analysis to compare the size of the shortfall with the level of detriment suffered by customers.

• **Some indicators were more volatile than others.** Five companies also considered that some of the serviceability indicators were more volatile than others and that due regard of this volatility should be taken account in assessing the extent of shortfalling.

In the light of these representations, we reviewed our approach to serviceability shortfalling. To support our assurance of the shortfalling decisions we appointed an external engineering consultant, Strategic Management Consultants (SMC), to assess the logic and reasoning for the shortfalls being considered for the PR14 final determinations including our assessments of the exclusions from performance assessment. SMC confirmed that the shortfall assessments appeared appropriate and agreed with our conclusions for the final determinations. The SMC report is published as an annex alongside this document.

Even so, following additional analysis including issuing two queries to the companies to further investigate the appropriateness of our approach to shortfalling, we have made changes to our process and to our shortfall calculations. We discuss these changes in detail in section A4.8 of this document.

These changes, combined with the adjustments we have made as a result of companies’ representations have reduced the overall amount that companies are being shortfalled from £359.0 million at draft determinations to £149.0 million at final determinations. We present the changes for the companies’ receiving shortfalls at draft determinations in figure A4.1 below. The reviewed approach to serviceability has been taken into account for all companies regardless of whether they put forward representations in this area.
Final price control determination notice: policy chapter A4 – reconciling 2010-15 performance

Figure A4.1 Serviceability shortfalls at draft and final determinations

Key:
SRN = Southern Water; SVT = Severn Trent Water; TMS = Thames Water; WSH = Dŵr Cymru; SEW = South East Water; BRL = Bristol Water; YKY = Yorkshire Water; NES = Northumbrian Water; DVW = Dee Valley Water.

Note:
For Yorkshire Water and Northumbrian Water we have removed the companies' serviceability shortfall at final determinations.

Our technical approach to legacy adjustments

On the 19 September, Severn Trent Water wrote to Ofwat to explain it was focusing its representations on a few key areas associated with its draft determination. One of these areas related to the technical approach to legacy adjustments in the Ofwat models. Severn Trent Water indicated that the workings of our models for the OIA, CIS and RCM adjustments were not in line with our methodology and that there were arithmetical errors in the use of discount rates and indexation. Severn Trent Water considered that the approaches we had adopted had a material, adverse impact on profits after tax.
To examine the issues that Severn Trent Water identified we commissioned an independent report from PwC (‘PwC’s report’) into our technical approach to legacy adjustments\(^1\). PwC’s report, ‘Reconciling 2010-15 Performance: Technical Review’, is published as an annex to this document.

On Severn Trent Water’s representations on the workings of our OIA, CIS and RCM models, PwC found that we had acted in accordance with our published methodology, although the policy was sometimes silent on issues of detail and that different approaches were taken in different models. We have not made any changes to our approach at final determinations for the 2015-20 period as a result of these observations.

PwC did, however, find an error in the net present value (NPV) calculation in the CIS model we used for our draft determinations proposals. Although the impact of this error was very small, we have corrected our model, which has had the effect of increasing the companies’ allowed revenues by £4.1 million at the industry level.

Although not the subject of any representation, PwC’s report also noted that 2009-10 discretionary spend is doubled-counted in the calculation of the capex cap in our RCV midnight adjustment model (see section A4.11). We accepted that this was an error, however, there is no discretionary spend recorded in any of the company RCV models. The double counting therefore makes no difference as it is applied to zero spend. As a result, we have not modified this model for final determinations.

Other company-specific representations on legacy issues

We have changed some of our company-specific interventions since our draft determination proposals to reflect the provision by companies in their representations of more robust cases for exclusions from serviceability shortfalls, updated customer numbers and revenue information.

We discuss company-specific changes to our draft determination positions in annex 3 of the relevant company-specific appendices.

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\(^1\) In producing this report, PwC was commissioned through a separate tender and therefore worked in a separate and distinct capacity to the PwC Delivery Partner team.
A4.1. Introduction

In this policy chapter, we set out and explain the approach we have used to reconcile companies’ proposed adjustments to 2015-20 price controls given companies’ performance against incentive mechanisms put in place at the last price control review (PR09). We summarise the results of our review of companies’ business plans and how we have responded to the issues raised by representations to our draft determinations and other relevant evidence.

This introduction:

- sets out the structure of this policy chapter; and
- describes the development and refinement of our approach to reconciling 2015-20 performance.

A4.1.1 Document structure

In section A4.1.2 below we describe the development and refinement of our approach to reconciling 2010-15 performance. In the remainder of this policy chapter, we then consider each of the PR09 incentive mechanisms in turn.

- The service incentive mechanism (SIM) – section A4.2.
- Revenue correction mechanism (RCM) – section A4.3.
- Opex incentive allowance (OIA) – section A4.4.
- Capital expenditure incentive scheme (CIS) – section A4.5.
- Other revenue adjustments – section A4.6.
- Change protocol (logging up and down, shortfalls) – section A4.7.
- Serviceability shortfalls – section A4.8.
- RCV midnight adjustment – section A4.11.

We also cover the 2014-15 transition mechanism in section A4.10. In each case, we outline:

- the background to and basic operation of the PR09 incentive mechanisms;
- our proposed policy position as set out in our draft determinations;
- the key issues raised by the representations received to our draft determinations; and
• our final position, including how we expect to reconcile 2014-15 performance as part of the price review in 2019.

Consistent with the final policy position set out in this chapter, our company-specific decisions on reconciling 2010-15 performance for each company are set out in annex 3 of the relevant company-specific appendices. We also provide more detailed information on how we have reconciled each of the relevant PR09 incentive mechanisms for each company in setting its price controls in the models published alongside our final determinations.

We outline our wider approach to assessing the costs and revenues associated with the wholesale price controls, to which the adjustments considered in this chapter apply, in ‘Policy chapter A3 – wholesale water and wastewater costs and revenues’.

A4.1.2 Our approach

A4.1.2.1 PR09

At PR09, we included a number of incentive mechanisms designed to protect customers by encouraging companies to improve and deliver their services more efficiently. The mechanisms were also designed to help companies manage uncertainty.

Since our PR09 final determinations, we have responded to questions from companies on how the various incentives would operate. These have included clarifications and consultations around the operation of the RCM in 2010, 2011 and 2013, CIS in 2012 and 2013, as well as a review of serviceability reference levels and control limits for a number of indicators in 2012 and for pollution incidents in 2013.

During this period, with water companies’ support and agreement, we have also changed the way yearly regulatory reporting operates by moving to a scheme of regulatory compliance reporting. This is done through yearly key performance indicator (KPI) reporting and compliance statements from water companies. This has allowed water companies to own and manage the reporting of their performance with their customers.

As a result of these important changes, the so-called ‘June return’ reporting has ended. As a result, we have not published our views on companies’ performance since 2011 – instead publishing companies’ own assessments of performance and serviceability. While these changes have meant that companies have had more
uncertainty over our view of their performance than in earlier price controls, they acted as an important precursor to giving companies and their management teams more responsibility and ownership of their business plans and outcomes. These are key innovations of the PR14 price control.

**A4.1.2.2 PR14**

In ‘Setting price controls for 2015-20: final methodology and expectations for companies’ business plans’ (our ‘final methodology statement’), we confirmed that the legacy incentive mechanisms included at PR09 would be used, in PR14, to compare actual performance, costs and revenues against the assumptions that we made at PR09.

Companies first submitted their business plan proposals to us in December 2013. Our subsequent risk-based review (RBR) enabled us to provide feedback to the companies in April 2014 around our assessment of their reconciliation of their performance. We provided feedback to the companies around the extent to which their calculations were in line with our guidance and tools (through test 14.1 in the RBR) and on the extent to which the calculations reflected 2010-15 performance (through test 14.2 in the RBR). We also provided additional guidance to companies in our publication in April 2014 entitled ‘Setting price controls for 2015-20 – further information on reconciling 2010-15 performance’ (our ‘reconciling 2010-15 performance document’).

One of the limitations of the RBR approach was that not all companies provided information to us on their performance in 2010-15 on all the issues or mechanisms within their December 2013 submissions. For these companies, our feedback was concerned with the lack of information rather than on the substance of the issues and so the companies concerned had limited opportunity for feedback or dialogue with us.

Companies generally responded to our concerns with better quality information and evidence at subsequent resubmissions of their business plans in May, June and July 2014. In certain cases, however, the evidential basis of the information provided was not included by water companies, resulting in additional queries and responses being required later within the price review process.

The draft determination consultation processes across all companies have provided further opportunities for companies to see the application of these mechanisms and to provide additional evidence to us to support the reconciliation of their performance. For example, the early draft determination for Dŵr Cymru included the first application of a serviceability shortfall in May 2014, allowing companies the
opportunity to consider similar circumstances within their own business plans and how these should be best reflected in their own reconciliations of performance in their submissions in June and July 2014. Similar opportunities were provided for companies to respond to serviceability shortfalls following the publication of draft determinations in August 2014.

The following table summarises the additional policy documents that we have published since our final methodology statement on reconciling company performance.

**Table A4.4  Additional policy documents published relevant to reconciling 2010-15 performance**

<table>
<thead>
<tr>
<th>Document name</th>
<th>Publication date</th>
<th>Description/policy content</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Setting price controls for 2015-20 – pre-qualification decisions’</td>
<td>March 2014</td>
<td>• Overview of RBR test applied for outcomes and companies’ performance against these tests.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Further clarity on the SIM for 2010-15.</td>
</tr>
<tr>
<td>‘2014 price review risk-based review – internal methodology’ (our ‘RBR internal methodology’)</td>
<td>April 2014</td>
<td>• Sets out the principles applied when scoring the RBR tests and criteria.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Describes our detailed assessment methodology for each of our RBR tests.</td>
</tr>
<tr>
<td>‘Setting price controls for 2015-20 – policy and information update’</td>
<td>April 2014</td>
<td>Further information on reconciling 2010-15 performance, including sector-wide feedback on companies’ approach in their business plans and how we will deal with actual performance in 2013-14 and 2014-15.</td>
</tr>
<tr>
<td>‘Service incentive mechanism (SIM) for 2015 onwards – conclusions’ (our ‘SIM conclusions paper’)</td>
<td>April 2014</td>
<td>Summary of consultation responses received and resulting conclusions on the SIM for 2015 onwards.</td>
</tr>
<tr>
<td>‘Setting price controls for 2015-20 – further information on reconciling 2010-15 performance’ (our ‘reconciling 2010-15 performance document’)</td>
<td>April 2014</td>
<td>Includes examples of good practice drawing on the RBR, outlines next steps and explains how we will reconcile 2014-15 performance as part of PR19.</td>
</tr>
</tbody>
</table>
Details of company-specific interventions in our draft determinations can be found in the relevant company-specific appendices to our draft determinations published in April, May and August.
### A4.2. Service incentive mechanism

The service incentive mechanism (SIM) is a financial incentive mechanism. We introduced it in 2010 to encourage companies to provide better customer service by comparing service delivery performance and providing financial rewards and penalties in relation to this. It replaced the overall performance assessment (OPA) incentive used in PR09, PR04 and PR99. Under the SIM, companies that perform comparatively well are rewarded and those that perform comparatively poorly are penalised.

#### A4.2.1 Methodology and process for assessment

The SIM measures and incentive properties were set out in IN 11/01, ‘Service incentive mechanism – auditing, scoring and levels of service reporting’. We made some minor updates to the measurement guidance in IN 12/03, ‘Service incentive mechanism (SIM) guidance’. However, this did not change the incentive properties applicable to the performance during the 2010-15 period, these have remained the same throughout this period.

We reviewed each company’s three-year SIM performance against the information that all companies provided on 2 May 2014. We reviewed this data alongside the companies’ proposed revenue adjustments in their revised business plans and reflected this analysis in our draft determinations. The key reason for the difference between the companies’ views and our view is where we have updated the reward or penalty to reflect the industry comparison with the benefit of the full three-year industry data. This was not available to companies when they made predictions in their business plans. Our process for assessing SIM performance was set out in draft determinations and is summarised in figure A4.2 below.
A4.2.2 Our draft determinations

In general, companies estimated SIM rewards and penalties for their revised business plans in accordance with our final methodology statement. Some companies had offered alternative approaches, such as reduced penalties to reflect improved performance in 2013-14. We recognise that improvements have been made which is good for customers but consider that it is important that incentive mechanisms operate by the rules that were set at the time. We have therefore intervened to apply rewards and penalties according to average performance over the three-year period, which resulted in some adjustments to the companies’ business plan proposals.

Figure A4.3 below details the three-year average SIM performance of companies for the years 2011-12, 2012-13 and 2013-14, and the resulting rewards or penalties used in our draft determinations derived using the approach set out above. The rewards or penalties are presented as wholesale revenue adjustments in the next control period, in the range +0.5% to -1.0% of company regulated turnover in 2013-14.
Each of the coloured bands above represents the company positions around the mean and standard deviations defined in our final methodology statement (section 10.5.2):

- green companies are above one standard deviation above the mean;
- grey companies are at or very close to the industry mean;
- red companies are between one and two standard deviations below the mean; and
- blue companies are between the mean and one standard deviation above or below the mean.

### A4.2.3 Issues raised by representations

We received only one response on SIM policy, from the Consumer Council for Water (CCWater). In response to one of the early draft determinations (received by Northumbrian Water and Welsh Water), CCWater said it wanted to see Ofwat use a
wider SIM range and adjust price limits by more than -0.5% as used in previous reviews for those companies that have consistently performed poorly\(^2\).

### A4.2.4 Our final determinations

We have not changed our approach to the SIM from our draft determinations. We agree with CCWater that the full range of possible SIM adjustments (+0.5% to -1.0%) should be used to maximise the incentive effect on companies to improve customer service and our final determinations utilise almost the full range of possible SIM adjustments (see table A4.5). South West Water and Sembcorp Bournemouth Water have updated and corrected their predicted turnover information, respectively, but there are no substantial changes in the financial consequences of the incentives compared to draft determinations.

#### Table A4.5 Three-year average SIM performance and resulting rewards and penalties

<table>
<thead>
<tr>
<th>Company</th>
<th>Three-year SIM score</th>
<th>%</th>
<th>£m Company view(^1)</th>
<th>£m Draft determination (^2)</th>
<th>£m Final determination (^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Staffordshire Water</td>
<td>86</td>
<td>0.5</td>
<td>2.9</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Sembcorp Bournemouth Water</td>
<td>86</td>
<td>0.5</td>
<td>1.1</td>
<td>0.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Wessex Water</td>
<td>86</td>
<td>0.5</td>
<td>12.2</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>Bristol Water</td>
<td>85</td>
<td>0.5</td>
<td>2.4</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Anglian Water</td>
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\(^2\) In previous reviews we used the OPA. We assume CCWater is referring to this.
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**Notes:**
1. The company view reflects predictions based on two years of industry data: 2011-12 and 2011-13.
2. Draft and final determinations reflect the industry comparison with the benefit of the full three years of industry data: 2011-12 to 2013-14. This was not available to companies when they made predictions in their business plans.

Unlike other areas of legacy reconciliation, the SIM incentive is only based on company performance in the three years 2011-12 to 2013-14. The SIM will remain as an incentive during 2015-20 for households in England and for households and business customers in Wales and is a mandated part of each company's outcomes. There is no formal SIM assessment for 2014-15. As a result, this year is being used to test updates to SIM measures that take account of separately measuring the service delivery to household and non-households in preparation for full implementation from April 2015.
A4.3. Revenue correction mechanism

The revenue correction mechanism (RCM) is a financial mechanism introduced at PR09 to correct for differences between expected and actual price controlled revenue between 2010 and 2015. It was designed to remove the scope for a company to either outperform or underperform on the collection of such revenue and to help ensure that companies were not disincentivised from promoting water efficiency to measured customers.

We confirmed the details of our revenue correction mechanism in PR09/31, ‘Revenue correction mechanism’ (July 2009).

A4.3.1 Methodology and process

In line with the approach we set out in July 2009, we have made revenue adjustments in PR14 to take account of each company’s actual and projected revenue difference relative to the assumptions we made in our PR09 final determinations for 2010-11 to 2014-15. This adjustment has been annualised over the five years 2015-20, in net present value (NPV) terms in order to apply it to the allowed wholesale revenues in the next control period.

In May 2011, in IN11/04, ‘Simplifying the revenue correction mechanism’, we summarised our decision to simplify two areas of the RCM:

- the billing incentive, and
- the back-billing incentive.

The supporting information to IN11/04 provides the technical detail to these changes. Figure A4.4 details our methodology and process for assessing the RCM at draft and final determinations.
Figure A4.4 Assessment process for RCM draft and final determinations

Note:
Where we intervened at draft determinations for back billing we disallowed the claim in its entirety. We gave companies an opportunity to provide additional information in their draft determination representations.

Our draft and final determination interventions concentrated on two primary tests: one around revenue forecasts for 2014-15 and another on the back-billing incentive.

Test 1: 2014-15 revenue forecasts

For companies' 2014-15 forecasts, we checked that they had explained the underlying basis of their forecasts and provided assurance that these were based on appropriate central estimates. We also checked that the forecasts were consistent with actual revenues between 2010-11 and 2013-14. We intervened if the difference between the 2014-15 revenue forecast and the year-by-year projection of revenue set at PR09 had increased beyond the variance in 2013-14 (and earlier years) and the company had not explained the reasons for this change.

In these cases, we restricted the difference in actual revenue with our PR09 assumptions in 2014-15 to the level recorded in 2013-14 in order to derive our draft and final determination proposals.
Test 2: Back billing incentive

The back-billing incentive (BBI) was a refinement introduced to the RCM to include an additional incentive for the companies to identify properties that have been charged less than they should have been (under-billed properties) – and to recover the amount owed (back bills).

In IN11/04 ‘Simplifying the revenue correction mechanism: supporting information’ we said:

“We will expect the companies: to take a reasonable, fair and appropriate approach for the back-billed amounts that they are claiming; and not to claim for back-billed amounts where the inaccuracy of the charging is the company’s fault.”

In regulatory accounting guidelines RAG 4.04, we stated that:

“For a company to be able to make a claim for the back-billing incentive it would have had to have back-billed the customer and have received all outstanding amounts due from the customer. Where a company wishes to claim for the back-billing incentive, it should provide us with the total amount for the back-billing adjustment that it wishes us to include in the revenue correction mechanism calculation. It should follow the guidance as specified in the supporting information to information note IN11/04.”

We intervened in our draft determinations where the company had not complied with our guidance in its revised business plan proposals and we did not include the back billed amounts that the company claimed in our draft determination assumptions. We gave companies an opportunity to provide additional information as part of their draft determination representations.

A4.3.2 Our draft determinations

Figure A4.5 below shows the scale and key reasons behind our proposed interventions. As can be seen, we intervened in a number of company business plans. The primary reasons for our proposed interventions were due to Test 2: back-billing adjustments (‘back-billing’) and Test 1: 2014-15 revenue forecast interventions (‘2014-15’). We also intervened where there were concerns around PR09 input assumptions and where we have found data issues in the company business plan tables compared with its populated RCM model (both captured in the ‘Other’ category).
A4.3.3 Issues raised by representations

Southern Water and Thames Water commented on our application of the BBI. Southern Water questioned whether we had changed the burden of proof in assessing BBI revenue claims from under-billed properties. It said we had done this by changing our approach from not allowing revenue claims where the inaccuracy was the “company’s fault” (as set out in the draft determination technical appendices and in IN11/04) to only allowing claims where it was the “customer’s fault” (as set out in the draft determination company-specific appendices). Thames Water said our accounting guidelines were impractical in that they required all back billed amounts to be received.

We also received a representation from Severn Trent Water that the billing incentive and BBI components of the RCM did not work correctly because of an asymmetric treatment of tax. The company suggested that because of this issue the way we applied the mechanism in our draft determinations, for every extra £1 collected through back billing, a revenue adjustment of £1.25 would occur to the dis-benefit of customers.
A4.3.4 Our final determinations

A4.3.4.1 Back-billing incentive

We do not consider that we have altered the “burden of proof” when conducting Test 2 on the back-billing incentive. We agree that we had used the different wording “customer fault” in the company-specific appendices in our draft determinations rather than “not the company’s fault”, but the substance of the test was not changed and was consistently applied as set out in the original information note and draft determination technical appendices.

We consider that a company may claim for back billed amounts where it has back billed a property to correct for inaccurate bills – for example, properties that are under-billed because the customer altered its supply to bypass its water meter to receive a lower bill. However, we will not allow claims for back-billed amounts where the company has been responsible for the inaccurate billing.

Whether responsibility lies with the company or customer can sometimes be hard to establish. We did not require additional evidence in such cases nor expect many cases of ambiguity. As such, we made an assumption that if responsibility was not clearly attributable to the company, then we would allow a claim for back-billing.

We do not consider that we introduced a new requirement in our regulatory accounting guidelines, but one that clarifies the expectation of what is required from companies to support a claim for back billing. This was because we and several companies considered that it was not clear in previously published documents. This then formed the basis for the business plan tables. For these reasons, we consider that the requirement as clarified in RAG 4.04 should not have caused it to be impractical for the company to comply with.

A4.3.4.2 RCM and tax

We have reviewed Severn Trent Water’s representation on the asymmetrical tax treatment of the billing incentive and BBI in the RCM. The RCM can be considered in two parts:

- the PR09 ‘true-up’ element; and
- the BBI and billing incentive (reward/penalty).
The PR09 ‘true-up’ element will take into account the tax impact of the change in revenue. The billing incentive and BBI are deemed to be post-tax incentives so we calculate an associated tax allowance on this additional income (or the reverse for a penalty). This strengthens the incentive and adds support to the overall incentive framework.

PwC’s report also examined this issue. It did not identify any deviation of the RCM base model from the Ofwat policy and guidance on the RCM. It did, however, confirm that there were some inconsistencies in the tax treatment of the billing and back billing incentives but that this calculation is also in-line with Ofwat policy and guidance.

We consider that using a post-tax incentive strengthens the rewards and penalties associated with the RCM and PwC have confirmed this view. As such, we consider that no change is required to the policy and methodology used in our draft determinations.

**A4.3.4.3 Results for companies**

We provide our final adjustments for the RCM for each company in the relevant company-specific appendix. Wholesale water control adjustments are set out in section A2.3.4, and wholesale wastewater control adjustments are set out in section A3.3.4. We have reviewed the draft determination representations carefully. Figure A4.6 shows our final determination interventions and the key causes for them. The largest difference between a company resubmission and our final determinations is for Thames Water with a £20 million difference.
Figure A4.6 RCM interventions within our final determinations

Figure A4.7 below shows the scale of RCM adjustments applied as part of our final determinations.

Figure A4.7 RCM adjustments in our final determinations
In Table A4.6, we present both the view from companies’ revised business plans and our final view of the annualised RCM adjustments for water and wastewater services for the five years of the price control.

**Table A4.6 RCM annualised adjustments for 2015-20 (£ million)**

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**A4.3.4.4 Reconciling 2014-15 performance**

The RCM numbers used in the final determinations reflect the latest available information and an estimate in respect of 2014-15. We set out in ‘Setting price controls for 2015-20 – further information on reconciling 2010-15 performance’ that we would reconcile the RCM in the summer of 2015. This remains our intention. In carrying out this reconciliation we will take a proportionate approach to making adjustments (for example, applying materiality thresholds where appropriate) and implement these changes at the next wholesale price control review in 2019.
Final price control determination notice: policy chapter A4 – reconciling 2010-15 performance

A4.4. Opex incentive allowance

The OIA is a financial mechanism to recognise the full incentive effect of operational savings – regardless of when the savings are made in the price control period. Where a company makes operational savings, these are retained and ‘rolled up’ into the price controls for the following price control period as long as savings result in sustained operating cost reductions.

The operation of the OIA mechanism is dependent on whether a company has been able to outperform against its regulatory assumptions in 2013-14 (the constraining year). This ensures the company retains only sustained operating cost reductions. So, for example, a company may have outperformed its regulatory assumptions in every year up to and including 2012-13, but because this could not be sustained into 2013-14, no incentive allowance would be received.

A4.4.1 Methodology and process

The OIA was introduced at the 1999 price review (PR99). Our last guidance on the OIA as a whole was published in 2007, as PR09/04, ‘The opex incentive allowance and the outperformance multiplier for 2005-10’. The final determinations in 2009 confirmed that the OIA would be used in the 2010-15 period.

Our methodology for calculating OIA is based on actual expenditure only and does not take account of companies’ forecast opex in the final year of the 2010-15 period. In their December 2013 business plans, companies included their best forecasts for actual opex in the 2013-14 year but this was subsequently updated with final actuals in the revised business plans. Our RBR highlighted a number of concerns relating to:

- the calculation of allowances;
- the consistency of inputs into the analysis; and
- issues around compliance with our guidance.

In our reconciling performance for 2010-15 document, we provided further information for companies on these issues and our expectations for the submission of revised business plans. Companies responded positively to our feedback and improved both the quality and consistency of information submitted in their revised business plans in relation to this incentive mechanism.
Figure A4.8 below sets out the steps we followed in reviewing companies’ proposals for opex incentive allowances for the draft and final determination proposals.

Figure A4.8 Steps taken in the review of companies’ OIA proposals

A4.4.2 Our draft determinations

Our review of companies’ business plans concentrated on:

- verifying companies’ inputs to the OIA calculation against historical information;
- checking for compliance with the guidance we had issued in appendix 5 of our final methodology statement and in our reconciling performance for 2010-15 document; and
- ensuring key inputs into the analysis were fair and appropriate.

In most cases, we agreed with the companies’ proposals. However, we discussed material interventions in the technical appendix to the draft determinations published on 29 August 2014. Enhanced and early draft determinations were based on company forecast data for 2013-14, which have been updated with actual data for final determinations.
Figure A4.9 below shows the total opex incentive revenue allowances post-tax for each company proposed as part of our August draft determinations.

Our proposed intervention for United Utilities produced a larger allowance than the company’s proposal (adding a further £17 million to the allowed revenue for the wholesale water service). This was due to correcting the company’s calculation using the actual effective tax rate for 2013-14 as required by the guidance. Our intervention for Severn Trent Water on wastewater produced a significantly lower allowance than the company’s proposal, as we did not apply the company’s proposed approach to account for pension deficit costs because this was not in accordance with our methodology.

Figure A4.9 Total opex incentive revenue allowances post-tax

A4.4.3 Issues raised by representations

We received representations on the OIA from Severn Trent Water and South East Water. These representations proposed that pension deficit repair costs should be excluded from the calculation of the OIA. At PR09 our allowed opex forecasts for 2010-15 included 50% of companies’ expected pension deficit contributions whereas actual opex included in the calculation of the OIA includes 100% of actual pension deficit costs. Both companies consider that this is not a fair comparison and, in doing so, imposes a disincentive on shareholders where a company chooses to make deficit contributions above the PR09 allowance. In addition, because of the way
pension deficit repair costs (a balance sheet item) are treated in the OIA the mechanism does not measure a company’s underlying efficiency in operating costs.

Severn Trent Water’s representation also commented on the different tax rates used in the OIA modelling and the financial model, and recommended a consistent use of the headline tax rate in both models.

**A4.4.4 Our final determinations**

We have reviewed representations to our draft determinations carefully and as part of this review, commissioned an independent review by PwC on our proposed approach to the issues raised. The review findings together with representations have informed our final determination decisions.

PwC’s report found that our approach to OIA creates a potential incentive to delay all pension deficit contributions to 2014-15, which would affect the manner in which the OIA would be calculated. It also pointed out that the OIA considers 100% of actual pension deficit contributions in actual opex even though only 50% of the forecast contributions were allowed in price limits at our final determinations at PR09. PwC concluded, however, that the consideration of 100% pension deficit costs was in line with our policy stated in April 2014.

We agree with PwC’s observations. At PR09, we assumed 50% of the deficit recovery costs were included in the opex cost assumptions for price limits within the period. However, the operation of the OIA during the PR09 final determinations included 100% of the pension deficit costs in operating costs. We did not formally clarify the 100% application of pension deficit repair costs within the OIA for the 2010-15 period until April 2014.

When we set prices in PR09, we did not stipulate when companies should make pension deficit contributions. This is a decision for company management teams and their shareholders. However, at no time did we state that our approach to the OIA would change from PR09. We therefore continue to consider pension deficit contributions should form part of the OIA calculation as they represent a material but controllable cost.

Even so, one company, Northumbrian Water, smoothed the impact of large cash contributions they had made early in the period in their business plan proposals. This revised the pension adjustments in the OIA calculation that would have otherwise led to a more beneficial incentive allowance for the company.
We welcomed Northumbrian Water’s approach at draft determinations and have now also applied smoothing to Severn Trent Water’s pension adjustments in its final determination. We considered smoothing appropriate for Severn Trent Water as it not only retained the company’s pension deficit contributions in the OIA calculation in the 2010-14 period maintaining consistency with our methodology, but also recognised the company’s sustained outperformance in the wastewater service during this period. Our intervention has led to an increase in Severn Trent Water’s OIA adjustment (£6.8 million) in the company’s favour.

As discussed above, Severn Trent Water also raised concerns with regard to the use of different effective tax rates. We accept that there are different treatments of tax across our legacy incentive tools. However, the effective tax rate has been used for OIA in the prior two price reviews. All parties accepted the use of the effective tax in those reviews, including Severn Trent Water. For consistency with our previous methodology, and in line with our intentions in PR09 we have retained the use of the effective tax in our final determinations.

PwC’s report found that the use of the effective tax rate in our published policy was clear and that we had applied it consistent with the policy. It noted, however, that the approach to taxation was inconsistent with the approach in the revenue correction mechanism and other mechanisms.

Based on the evidence presented and the clearly established policy with respect to the OIA, we consider that no change is required to our approach to calculating OIAs in our final determinations in relation to both the pensions and the effective tax rate. We have continued to include all pension deficit costs in the calculation consistent with the approach at PR09 and we have continued to apply the 2013-14 effective tax rate to pre-tax allowances.

Figure A4.10 below summarises the OIA revenue allowances that companies proposed in their revised business plans compared with our final determinations at a total service level.
Figure A4.10 Total opex incentive revenue allowances post-tax

We are discontinuing the OIA as an ongoing incentive framework for future control periods as we have moved to assessing and incentivising costs on a total expenditure (totex) basis. It will not require any future reconciliation in the period 2015-20.
A4.5. Other revenue adjustments

We cover the two new incentive mechanisms introduced in PR09, the revenue correction mechanism and the capital expenditure incentive scheme, in sections A4.3 and A4.6, respectively. In this section we cover the other revenue adjustments set out within PR09 policy. At PR09 we stated that it would be appropriate to make adjustments to revenue for:

- **costs of issuing new equity assumed during 2010-15**: to recover any assumed costs of issuing new equity during 2010-15 where these costs did not materialise (this only applies to the small number of companies we assumed would need to issue new equity);
- **tax benefits**: to recover any tax benefits arising from certain in-period changes in capital structures; and
- **other adjustments**: to reflect wider proposals made by companies in their business plans to return money to customers which are not reflected in other mechanisms.

A4.5.1 Our draft determinations

A4.5.1.1 Costs of issuing new equity assumed during 2010-15

At PR09, where new equity issuance had been assumed for certain companies during the 2010-15 period, we included an allowance for the costs associated with this in their price controls. For these companies, if they did not issue any equity and did not return the relevant allowed costs to customers in the period, we stated in PR09 that these costs (which were defined in the PR09 final determinations) would be returned to customers through the 2015-20 revenue controls. We therefore need to estimate the relevant amounts in PR14.

New equity requirements and associated allowed financing costs were set for Bristol Water, South East Water and Thames Water for the 2010-15 period. We are only requiring that South East Water return the relevant equity issuance costs to customers through the 2015-20 revenue controls. This is because Thames Water has already returned the relevant allowed costs to customers and the Competition Commission did not assume new equity issuance when it reset Bristol Water’s price control in August 2010.
In our draft determinations, we proposed to intervene with South East Water’s proposal – which was to return relevant costs, totalling £2.3 million, to customers in instalments over the next five years. We instead proposed that £2.1 million should all be returned in the first year of the next price control period, with the difference in amount reflecting our proposed re-profiling.

A4.5.1.2 Tax benefits

We set out at PR09 that companies who gain tax benefits from in-period capital restructuring exercises should return these gains to customers. In our draft determinations we made such an adjustment for Affinity Water.

A4.5.1.3 Other adjustments

We have made a 2010-15 adjustment for additional expenditure on the Thames Tideway Tunnel which is in addition to that approved at PR09. This adjustment allows Thames Water to recover the financing costs incurred in 2010-15 on this additional expenditure.

A4.5.2 Issues raised by representations

We received no representations on our interventions on the costs of issuing new equity or adjustments to companies’ tax benefits.

A4.5.3 Our final determinations

In table A4.7, we present both the company’s revised business plan (companies’ view) and Ofwat’s final view of the other revenue adjustments across water and wastewater services. The row on ‘other adjustments’ reflects the sum total of proposals made by companies in their business plans to return money to customers which are not reflected in other mechanisms.
Table A4.7 Other revenue adjustments 2015-20 (£ million)

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Our final adjustments are reflected, for each company, in the relevant company-specific appendices: wholesale water adjustments are provided in section A2.3.4 and wholesale wastewater adjustments in section A3.3.4.
A4.6. Capital expenditure incentive scheme

The capital expenditure incentive scheme (CIS) is a financial incentive mechanism introduced at PR09. It was designed:

- to improve incentives for companies to submit realistic investment plans for 2010-15; and
- to create strong incentives for each company to contain its capital costs and outperform the regulatory settlement, once price limits had been set.

Under the CIS, each company proposed a forecast of its capital expenditure over 2010-15, as part of the price review process. Ofwat determined a baseline expenditure for each business plan reflecting the outputs and outcomes each company had to deliver and an understanding of industry average efficiency. The mechanism allows the company to recover, in allowed revenues, its actual capital expenditure plus or minus a reward or penalty. A company is rewarded if it spends less than Ofwat’s baseline expenditure, while it is penalised if its actual capex exceeds this baseline. The size of these rewards and penalties depend on the expenditure forecast chosen and how the companies’ actual expenditure compares with this forecast.

At PR09 we explained that we would reflect actual capital expenditure in the RCV at the start of the next price control period. Thus the CIS mechanism gives rise to two adjustments.

- **CIS RCV adjustment**: this ensures that total actual capital expenditure is included in the RCV. To do this, the capex allowed in the PR09 final determinations is subtracted from the RCV, and the actual expenditure is added back.

- **CIS revenue adjustment**: this reverses any return earned on capex which was over-funded by the PR09 settlement or, conversely, allows additional revenue to true-up capex under-funded by the PR09 settlement.

A4.6.1 Methodology and process

Following our final determinations at PR09, our view of the way that the CIS should operate has been the subject of correspondence with the industry and two information notes (IN 11/08 and IN 12/08). Among other things, IN 12/08 provided an
illustrative example of the CIS and a flowchart showing the step-by-step mechanics of the CIS reconciliation. In January 2013, we published a CIS spreadsheet model which followed the approach set out in the flowchart. This model formed the basis of the CIS feeder models which were used during our RBR and which were published in April 2014.

We set out in detail our CIS methodology and process both within the main PR09 methodology statement and as part of the associated PR09 final determination documents (see published documents relating to the CIS for details). For these final determinations, we have followed the same process as our draft determinations to derive, for each company, the restated ratio of plan to baseline expenditure (bid ratio), taking into account any change protocol, shortfalling and logging up/down adjustments, and associated CIS incentive adjustments to allowed revenue and RCV. This is set out in figure A4.11.

Figure A4.11 CIS process applied for final determinations

A4.6.2 Our draft determinations

We noted in our draft determinations that the CIS had incentivised some companies to contain water and wastewater costs and to spend less than the amounts set out in
their regulatory settlement. We stated that a number of companies were able to contain costs below their baseline assessments in total spending £493.9 million less on water and £377 million less on wastewater than we had projected in our baseline assessments at PR09. However, at an industry level, we showed that these efficiency savings were more than offset by overspending by the remaining companies. For these companies capital expenditure was in total £737.3 million higher than our baseline estimates for water and £447.7 million higher for wastewater. Overall, we therefore estimated that the industry will have spent £243.4 million more on water and £70.6 million more on wastewater than we assumed in setting our baseline positions at PR09.

We note that at draft determinations, capital expenditure with respect to companies’ own forecasts was £670 million lower for water and £1,134 million lower for wastewater. This means that companies have delivered their capital programme at significantly lower cost than their own CIS bids at PR09. The significant underspend with respect to companies’ bids, in both water and wastewater (outperformance in table A4.8), contributed to the large negative CIS RCV adjustment at draft determinations.

We summarise companies’ expenditure levels against their restated CIS bids and Ofwat baselines in table A4.8 below.

Table A4.8 CIS – capital expenditure outperformance and underperformance (draft determinations)

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
<th>Wastewater</th>
<th>Water</th>
<th>Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£m (2012-13 prices)</td>
<td>Restated baseline</td>
<td>Restated baseline</td>
<td>Restated bid</td>
</tr>
<tr>
<td>Total</td>
<td>-243.4</td>
<td>-70.6</td>
<td>670.5</td>
<td>1,134.8</td>
</tr>
<tr>
<td>Outperformance³</td>
<td>493.9</td>
<td>377.0</td>
<td>954.1</td>
<td>1,226.4</td>
</tr>
<tr>
<td>Underperformance³</td>
<td>-737.3</td>
<td>-447.7</td>
<td>-283.5</td>
<td>-91.6</td>
</tr>
</tbody>
</table>

Notes:
1. Restated baseline: Ofwat’s PR09 baseline capex adjusted for Ofwat’s view of the value of the company’s claims under either the IDoK, change protocol or a shortfall (but not serviceability shortfall).
2. Restated bid: Company’s PR09 final business plan capex forecast adjusted for the company’s claims under either the IDoK, change protocol or a shortfall (but not serviceability shortfall).
3. Outperformance is where actual expenditure is lower than the restated position and underperformance is where actual expenditure is higher than the restated position.

³ The figures in this paragraph are in a 2012-13 price base and reflect the outperformance across all 18 companies at draft determinations.
Our draft determination proposed that only a small number of companies would receive any additional net revenue through the CIS reconciliation. Most companies, on the other hand, were required to return money to customers as they have spent more than our CIS baselines.

**A4.6.3 Issues raised by representations**

Following draft determinations, we received one representation from Severn Trent Water on the CIS on 26 September, with some additional information arriving on 3 October. Severn Trent Water stated that it considered that our draft determination proposals for the CIS did not operate in the way originally intended during PR09 because of inconsistencies or errors in:

- a) the way that we adjust for price inflation;
- b) the NPV calculations; and
- c) the way that the model handled tax for the ex-ante and ex-post elements of the calculated reward/penalty.

Severn Trent Water commented that this treatment of price inflation is inconsistent, and that it is not in line with the design of the CIS. Specifically, it stated that the financing cost adjustment in the CIS generates a clawback on the financing cost for the difference arising between the level of FD RPI forecast at PR09 and the higher outturn values in the period 2010-15.

Severn Trent Water argues that even in the case where its actual capex in the period 2010-15 equalled the amount allowed at PR09, the CIS financing cost adjustment could generate a penalty for the company when there was a divergence between the levels of FD RPI and outturn RPI.

Severn Trent Water presented two alternative approaches to address this concern.

- In the first, it suggested that we changed the indexation methodology for the CIS revenue and the RCV adjustments to be on the same basis as the CIS reward/penalty calculation, although the company subsequently clarified that this was a proposal made by their advisors and not its own proposed approach.
- In the second, the company argued that to calculate the financing cost adjustment, allowed capex should be deflated using the same index as used to deflate actual capex: outturn RPI.
These alternative approaches would result in materially different estimates of RCV and revenue adjustments.

**A4.6.4 Our final determinations**

**A4.6.4.1 Adjustments for price inflation**

After careful consideration, we have decided to make no changes as part of our final determinations to our approach to indexation in our established CIS methodology which was applied to our draft determination proposals.

After reviewing Severn Trent Water’s submission in October and considering the results in the PwC report we accept that alternative approaches to indexation in the RCV and financing cost adjustment could have been put forward.

The established CIS methodology applied in our draft determinations, adopts two different approaches to indexation for the RCV adjustment and the financing cost adjustment. 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 (what we term 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 agree that changes could be made to the CIS methodology, in the ways suggested by Severn Trent Water, would be favourable to the company. However, we consider that if change were required there is 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.

As discussed above, we responded to companies’ requests for clarification on how the CIS would operate following PR09 with an information note in 2012. This was followed by the publication of a model in January 2013 which indicated how the financing adjustment would be calculated. Together, these documents created a clear expectation of how the RCV adjustment would operate for PR14. We have also used the established CIS methodology in the RBR and to derive companies’ draft
determinations. A change to the established methodology for the CIS could be seen as inconsistent with the position adopted since 2012.

In ‘Policy chapter A1 – introduction’, we highlighted the need to address RCV issues in relation to outcome delivery incentives, RPI and other specified factors. We will also need to ensure the approach to determining RCVs is consistent with the development of markets across the industry value chain.

As part of this work, we will consider the approach to adjusting for inflation in the 2010-15 CIS true-up. For PR14, we have retained the approach to inflation which we adopted in our draft determinations. We consider that aligning our approach to the policy set out through earlier information notes has avoided a late change which would have risked creating regulatory uncertainty. Maintaining confidence in the regulatory framework is important to delivering the substantial benefits to customers that are associated with PR14 and the enduring principles on which it is based.

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 under-performance) on that basis. For the period beyond 2015-20, we would like to engage with stakeholders and consider whether this approach to adjusting for inflation, which may have resulted in a slightly different 2015 opening RCV (as a result of indexation) for all companies, is in the long term interests of customers. It will be appropriate for us to consult shortly on how we approach any adjustment to the RCV at PR19 as a result of indexation. If we consider an adjustment would be appropriate, there would be no need to adjust retrospectively for the revenues received in the interim. These have been correctly set in this price control review, based upon Ofwat's existing approach to inflation. Any change would have a prospective effect only, and would be applied industry-wide.

Finally as with the OIA, the current CIS incentive mechanism will not be used in the next price review period. It will be replaced by cost performance incentives based on totex assessment and menus. However, we note that our future totex menu incentive that we have established for PR14 shares some important similarities with the CIS. In particular, it will include a true-up between allowed and actual totex and will therefore require expenditure to be compared in comparable price bases. Our intention for PR19 is that allowed expenditure will be left in 2012-13 prices, while actual totex will be deflated to the PR14 2012-13 price basis by actual RPI.
A4.6.4.2 Mathematical errors and the treatment of tax

In addition to making representations on the approach to indexation in the CIS model, Severn Trent Water also argued that there were mathematical errors in the CIS model’s NPV calculations and inconsistencies in the way that the model handled tax.

As discussed previously we commissioned PwC to carry out a full review of all the 2010-15 adjustment models for our final determinations.

On the arguments raised by Severn Trent Water on the mathematical errors in the NPV calculations and the inconsistencies in the way that the model handles tax for the ex-ante and ex-post elements of the calculated reward/penalty, PwC’s report found that the methods applied in the CIS model are not inconsistent with Ofwat’s policy baseline from PR09. Therefore, we do not consider it appropriate to change the CIS model on account of these two points.

On our approach to NPV calculations across time periods in the CIS, PwC’s report found that the policy states that revenue adjustments, based on performance in 2010-15 and realised in 2015-20, should be on a NPV neutral basis. The model determines NPV of the ex post penalties/incentives from 2010-15 using a pre-tax cost of capital. However, when the incentives are unwound through 2015-20, the NPV effects are calculated using a post-tax cost of capital. We accepted that this was an error in the modelling and have corrected it for these final determinations. The net impact across all companies of making the change is to increase the adjustment to allowed revenues by £4.1 million at the industry level, approximately 0.01% of 2015-20 totex. In the case of Severn Trent Water it increases the adjustment to allowed revenues by £1.3 million, 0.02% of 2015-20 totex.

Using this approach we have made our final adjustments for the CIS, for each company, in the relevant company-specific appendices: wholesale water adjustments are provided in section A2.3.4 and wholesale wastewater adjustments in section A3.3.4. We set out a summary of the CIS performance reflected by these adjustments below.

A4.6.4.3 Results for companies

These final determinations include the CIS adjustments to revenue and to RCV that arise from our assessment of each company’s performance under the CIS mechanism in the 2010-15 period. For the years 2010-11 to 2013-14, the final determination CIS adjustments reflect actual capex performance, but for 2014-15, we use forecast expenditure.
Compared with draft determinations, the most significant change is with the level of overspend (underperformance) for wastewater with respect to Ofwat’s baseline. This has fallen from £70 million to £16 million. This is largely due to a consequence of the movement between draft determinations and final determinations in the change protocol adjustments to Ofwat’s baseline. The movement in change protocol is explained in section A4.7.

We summarise companies’ expenditure levels against their restated CIS bids and the restated Ofwat baselines in table A4.9 below.

Table A4.9 CIS – capital expenditure outperformance and underperformance (final determinations)

<table>
<thead>
<tr>
<th>£m (2012-13 prices)</th>
<th>Water</th>
<th>Wastewater</th>
<th>Water</th>
<th>Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Restated baseline¹</td>
<td>Restated baseline¹</td>
<td>Restated bid²</td>
<td>Restated bid²</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-242.1</td>
<td>-15.8</td>
<td>669.4</td>
<td>1,134.8</td>
</tr>
<tr>
<td><strong>Outperformance³</strong></td>
<td>503.2</td>
<td>362.3</td>
<td>952.9</td>
<td>1,226.4</td>
</tr>
<tr>
<td><strong>Underperformance³</strong></td>
<td>-745.4</td>
<td>-378.0</td>
<td>-283.5</td>
<td>-91.6</td>
</tr>
</tbody>
</table>

Notes:
1. Restated baseline: our PR09 baseline capex adjusted for our view of the value of the company’s claims under either the IDoK, change protocol or a shortfall (but not serviceability shortfall).
2. Restated bid: Company’s PR09 final business plan capex forecast adjusted for the company’s claims under either the IDoK, change protocol or a shortfall (but not serviceability shortfall).
3. Outperformance is where actual expenditure is lower than the restated position and underperformance is where actual expenditure is higher than the restated position.

As noted above, the CIS mechanism was designed to take account of the financing impacts of over- and under-expenditure within the period by not remunerating associated financing costs where planned expenditure was not incurred. As a result of the significant under-expenditure over the period 2010-15, only a small number of companies will receive any additional net revenue through the CIS reconciliation.

While it is clear that some companies have delivered capex outperformance and have received rewards for doing so, this has not necessarily resulted in additional revenue funding being required from customers. In many cases, the scale of estimated financing sums assumed at PR09, which were no longer required with the actual expenditure undertaken and returned via the mechanism, was greater than the expenditure performance rewards that are calculated through the CIS, so that overall there will be a net return to customers as part of the CIS reconciliation.
For the water service, three companies (Northumbrian Water, Wessex Water and Yorkshire Water) will receive an overall revenue adjustment totalling £35.7 million with the remaining companies returning £191.7 million to customers – with the net effect being £156 million returned to customers. For the wastewater service, three companies (Anglian Water, Wessex Water and Yorkshire Water) will receive an overall revenue adjustment totalling £19.7 million with the remaining companies returning £219.6 million to customers and hence the net effect being £199.9 million returned to customers. We show the adjustments in tables A4.10 and A4.11 below.

Table A4.10 CIS true-up adjustments

<table>
<thead>
<tr>
<th></th>
<th>Water service</th>
<th>Wastewater service</th>
<th>Total service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward/penalty (£m)</td>
<td>Companies’ view</td>
<td>-60.4</td>
<td>25.7</td>
</tr>
<tr>
<td></td>
<td>Ofwat view</td>
<td>-58.0</td>
<td>28.9</td>
</tr>
<tr>
<td>Adjustments to 2015-20 revenue (£m)$^1$</td>
<td>Companies’ view</td>
<td>-116.2</td>
<td>-157.2</td>
</tr>
<tr>
<td></td>
<td>Ofwat view</td>
<td>-144.2</td>
<td>-187.8</td>
</tr>
<tr>
<td>RCV adjustment (£m)</td>
<td>Companies’ view</td>
<td>-542.8</td>
<td>-782.7</td>
</tr>
<tr>
<td></td>
<td>Ofwat view</td>
<td>-527.4</td>
<td>-765.8</td>
</tr>
</tbody>
</table>

Note:
The adjustment to 2015-20 revenue values shown in this table include the reward/penalty figures and assume a single year adjustment in the first year. They do not include the NPV profiling of making the adjustments over all the five years that we use for final determinations.

We summarise the associated profiled revenue adjustments for the CIS reconciliation for each year of the next price control period for the wholesale water and wastewater controls below.

Table A4.11 Profiled revenue adjustments from the CIS reconciliation (£ million)

<table>
<thead>
<tr>
<th></th>
<th>2015-16</th>
<th>2016-17</th>
<th>2017-18</th>
<th>2018-19</th>
<th>2019-20</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Companies’ view</td>
<td>-11.5</td>
<td>-27.0</td>
<td>-24.3</td>
<td>-30.5</td>
<td>-30.5</td>
</tr>
<tr>
<td></td>
<td>Ofwat view</td>
<td>-18.5</td>
<td>-33.3</td>
<td>-30.8</td>
<td>-36.6</td>
<td>-36.8</td>
</tr>
<tr>
<td>Wastewater</td>
<td>Companies’ view</td>
<td>-41.6</td>
<td>-32.1</td>
<td>-27.4</td>
<td>-33.4</td>
<td>-33.2</td>
</tr>
<tr>
<td></td>
<td>Ofwat view</td>
<td>-54.2</td>
<td>-38.6</td>
<td>-34.2</td>
<td>-36.5</td>
<td>-36.4</td>
</tr>
</tbody>
</table>
Figure A4.12 below shows the scale of the CIS revenue adjustments applied as part of our final determinations and how these compare to the company proposals in revised business plans (Companies’ view) and our draft determinations.

**Figure A4.12 Total CIS revenue adjustments**

As noted in our April 2014 reconciling 2010-15 performance document, we do not presently have data for actual performance in the final year of the current price control, so the above adjustments include our assessments of relevant 2014-15 capital expenditures, having reviewed companies’ revised business plans and representations on our draft determination projections. However, in the same information notice, we proposed to reconcile the CIS to take account of actual 2014-15 expenditure in the summer of 2016.

It is our intention to use the same processes and procedures set out within this policy chapter to review the performance and to reconcile differences in 2016. The CIS reconciliation will examine differences between outputs and costs against PR09 assumptions, taking into account relevant final indexation adjustments and will determine the associated final rewards and penalties for the CIS, with final revenue and RCV adjustments being determined in consequence. We will take a proportionate approach to making these changes (for example, applying materiality thresholds where appropriate) and implement them at the next wholesale price control review in 2019.
A4.7. Change protocol (logging up, logging down and shortfalls)

Within the PR09 methodology, the change protocol provided a framework to deal with material changes in the investment programme and make adjustments to the CIS baselines to appropriately reflect these changed circumstances.

- Logging up and down changes are two-sided adjustments in the event of non-trivial changes to delivery requirements (>2% of relevant service turnover).

- Shortfalls are one-sided adjustments where there are obligations, including serviceability output obligations, funded by allowed revenues in PR09 which have not been delivered by the company. In these circumstances, a financial adjustment is required to recover the associated estimated allowed costs which customers have funded.

This chapter deals with change protocol issues, excluding serviceability shortfalling, which we discuss in section A4.8.

A4.7.1 Methodology and process

A full explanation of the purpose, methodology and rationale for the change protocol is available in ‘Change protocol for 2010-15: Principles and outline procedures for companies to seek financial adjustments relating to outcomes in the 2010-15 period’.

In accordance with our PR09 methodology and change protocol, we have conducted a detailed analysis of each company’s reported and projected 2010-15 performance and reconciled this to the targets and delivery expectations set out at PR09. Where there have been material changes in actual delivery relative to these expectations (>2% of service turnover) we have applied either a logging up, logging down or a shortfall adjustment. This is reflected in the RCV and in the allowed revenues determined for PR14.

In some cases, the companies advised us in their business plan of material changes and their financial impacts. In other cases, we have applied an adjustment even where the company did not propose one in its business plan (a ‘counter-claim’). In both instances, we have assessed the reason for the change, the magnitude of the change and the financial impact of the claims/counter-claims on the company and formed a judgement on the appropriate financial adjustments to make.
The decision process we have used for the draft and final determinations to set these proposed adjustments is shown in Figure A4.13.

**Figure A4.13 Change protocol decision process for draft and final determinations**

In order to determine the financial impact of any changes that have occurred within the existing control period, we calculated the net change in capital and operating expenditure from a base. The base comprised the companies’ allowed pre-efficiency expenditure (as set out in PR09), using the information provided to us by companies as part of their business plan submissions. In order to determine the net changes in operating expenditure, the original price limit assumptions need to be indexed from 2007-08 prices (the price base used when the assumptions were made at PR09) to 2012-13 prices (the price base used for PR14) using RPI (financial year average). For capex, the original price limit assumptions should be indexed to 2012-13 prices using financial year average COPI as described in section A4.6.

**A4.7.2 Our draft determinations**

As part of the draft determinations we assessed and formed a view on about 70 claims and counter-claims associated with logging up/down and shortfalling (excluding serviceability shortfalls). This resulted in us reducing our PR09 capital
expenditure baseline by £237 million (at 2012-13 financial year average prices), with associated costs being returned to customers through the operation of the CIS mechanism described above.

A4.7.3 Issues raised by representations

We did not receive any representations on our general approach to applying this element of the change protocol in our draft determinations. Instead, representations on the change protocol (excluding serviceability) were from individual companies on our company-specific adjustment proposals only. We set out these representations and any adjustments we have made in our commentary in each company-specific appendix.

In our draft determinations, we asked companies to provide updated information on a number of service standard outputs where the companies had not provided evidence that these outputs had been delivered (that is, resilience, odour and energy recovery outputs/operational expenditure savings). As part of representations the companies have provided sufficient evidence to enable the delivery of these outputs to be reconciled.

A4.7.4 Our final determinations

As part of our final determinations we have assessed and formed a view on about 70 claims and counter-claims associated with logging up/down and shortfalling (excluding serviceability shortfalls). Companies provided further information as part of their representations to confirm delivery or progress of delivery of their 2010-15 requirements. Some also provided updated cost data or revised performance data in their representations. In assessing the new information provided by companies, we accepted companies’ proposals, revised our views on the claims, or adjusted the scope of counter-claims. This has resulted in a variance of £16 million between our view at draft determinations and our view at the final determinations.

Our final determinations reflect aggregate reductions in our PR09 capital expenditure baselines of £183 million (at 2012-13 financial year average prices). Costs are returned to customers through the operation of the CIS, as described above.
Table A4.12 Summary of post-efficiency capex for logging up, logging down and shortfalls included in the CIS reconciliation (£ million)

<table>
<thead>
<tr>
<th>2009-10 to 2014-15 – post-efficiency capex</th>
<th>Water service</th>
<th>Wastewater service</th>
<th>Total service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Companies’ view</td>
<td>Ofwat view</td>
<td>Companies’ view</td>
</tr>
<tr>
<td>Logging up (two-sided)</td>
<td>0.4</td>
<td>0.4</td>
<td>448.2</td>
</tr>
<tr>
<td>Logging down (two-sided)</td>
<td>-67.6</td>
<td>-74.1</td>
<td>-405.8</td>
</tr>
<tr>
<td>Shortfalls (one-sided)</td>
<td>-30.7</td>
<td>-39.7</td>
<td>-61.9</td>
</tr>
</tbody>
</table>

Notes:
1. Includes two-sided adjustments from the PR09 agreed overlap programme as set out in table A4.18
2. We exclude shortfalls for serviceability from the CIS reconciliation, but instead make direct adjustments to the RCV in 2015-16. We do this to allow the actual capex the company incurred in seeking to maintain serviceability, to be reflected in the rewards or penalties earned through the scheme. But to also ensure customers are not required to pay for the regulatory output the company has failed to deliver.
3. The numbers in table A4.12 have been rounded to 1 decimal place.

Table A4.13 Summary of post-efficiency opex for logging up, logging down and shortfalls included in the opex incentive allowance calculation (£ million)

<table>
<thead>
<tr>
<th>2009-10 to 2014-15 – post-efficiency opex</th>
<th>Water service</th>
<th>Wastewater service</th>
<th>Total service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Companies’ view</td>
<td>Ofwat view</td>
<td>Companies’ view</td>
</tr>
<tr>
<td>Logging up</td>
<td>14.5</td>
<td>0.2</td>
<td>194.0</td>
</tr>
<tr>
<td>Logging down</td>
<td>-0.1</td>
<td>-0.1</td>
<td>-2.3</td>
</tr>
<tr>
<td>Shortfalls</td>
<td>0.0</td>
<td>-0.7</td>
<td>-0.1</td>
</tr>
<tr>
<td>Shortfalls (serviceability)</td>
<td>0.0</td>
<td>0.0</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Notes:
The numbers in table A4.13 have been rounded to 1 decimal place.

Our final adjustments for the change protocol are reflected, for each company, in the relevant company-specific appendix: wholesale water adjustments are provided in section A2.3.4 and wholesale wastewater adjustments in section A3.3.4.
As noted in our publication in April 2014, ‘Further information on reconciling 2010-15 performance’, while we have made judgements on the forecast performance in 2014-15 in our final determinations, we do not presently have data for actual performance in the final year of the current price control. In the same information paper, we proposed to reconcile the change protocol and other mechanisms in the summer of 2015, with any changes being applied at the next price review in 2019. This remains our intention.

The published change protocol mechanism relates only to the 2010-15 period and only reconciles changes within this time period as part of the reconciliation reviews in 2015 (for the change protocol) and 2016 (for the CIS). The change protocol mechanism does not continue beyond 31 March 2015.
A4.8. Serviceability

It is critical that all companies maintain the flow of services to customers in the short and long term. At PR09, companies were funded to achieve stable serviceability by 2012 and to maintain this for the remainder of the regulatory period.

For our final determinations in 2009, we set out our expectations on the measurement and management of serviceability. We expected each company to monitor, manage and maintain its asset systems so that each of the serviceability indicators set out in the company’s supplementary report remained stable, that is, within a defined range of control limits, oscillating around a central reference level.

The operation of the serviceability incentive requires the definition of two levels of performance – a reference level and an upper control limit. Throughout PR09, companies submitted information on reference levels and control limits and these were reviewed by Ofwat before our final determinations in December 2009.

The PR09 final determinations included the requirement that companies were required to maintain all indicators at a stable position otherwise they would be at risk of shortfalling. Stable serviceability is defined as where an indicator oscillates around a central reference level within the set range of the control limits (that is, below the upper control limit level). The requirement that all indicators were maintained in a stable position was first set out in our final determinations. In 2012, we provided an opportunity for companies to review reference levels and upper control limits should they consider matters had changed from the PR09 final determinations.

A4.8.1 Methodology and process

At PR09, for the 2010-15 period, we stated that should a company fail to demonstrate a stable or improving trend in any indicator in 2014, our starting point will be a shortfall in output. We acknowledge that the final determination documents at PR09 do make reference to both baskets of indicators as well as individual indicators. However, in the confidential reports directed to each company and which accompanied and formed a critical component of the published PR09 settlement, we made it clear, as we had in PR09/38, that we expected companies to maintain each indicator in a stable position.
A4.8.2 Our draft determinations

We set out further details of our serviceability methodology in section A3.6.7 of the wholesale technical appendix to our August draft determinations. An important element of this approach is how we calculated the requirement for and size of serviceability shortfalls. At draft determinations this involved four steps.

1. We first considered the trend in each serviceability indicator and assessed, for each year in the period from 2011-12 to 2014-15, whether the trend was improving, stable, marginal or deteriorating. This assessment reflected the position set out at PR09: “Values persistently close to or persistently above the upper limit … will be classed as marginal or deteriorating”. A marginal or deteriorating indicator is classed as a serviceability failure.

2. We then considered the extent to which the performance of an indicator in each year could be attributable to factors which were outside the control of the company.

3. The methodology recognises that companies should not be shortfalled for one-off failures, or if they address shortcomings in a timely and effective manner.

4. Finally, where appropriate, we calculated the shortfall amount. Our calculation reflected our policy intent that the serviceability mechanism should claw back monies that had been allowed to companies for performance that was not delivered. The calculation of any shortfall is therefore linked to the level of allowed expenditure in the existing price limits. In practical terms, the shortfall was capped at 50% of the aggregate spend in each sub-service. We defined four sub-services to categorise assets in our serviceability assessments: water infrastructure (WI), water non-infrastructure (WNI), sewerage infrastructure (SI) and sewerage non-infrastructure (SNI).

We applied serviceability shortfalls to eight companies as part of our draft determinations (see table A4.17). We also identified a further ten companies where stable serviceability is at risk in 2014-15 and improvements may need to be made, otherwise a shortfall adjustment may be applied (taking effect after the next wholesale price control review if material). We requested further data as part of company representations in order to confirm whether or not a shortfall should be applied as part of our final determinations.
As part of our draft determinations, we proposed adjustments to the RCV totalling £359.0 million where we did not consider the eight companies concerned to have met their commitments to deliver stable serviceability. This comprised £149.0 million for the water service and £211.2 million for the wastewater service.

A4.8.3 Issues raised by representations

All the companies that were affected by serviceability shortfalls, except Severn Trent Water, made representations about our process and the level of the proposed shortfalls. The most significant representations were as follows.

- **The shortfalling approach was not consistent with our published methodology.** Seven companies stated that at PR09 we had proposed to measure serviceability with reference to performance across a basket of indicators. On this basis, these companies therefore considered that our approach of using single indicators when determining shortfalls was inconsistent with our published methodology.

- **Scale of the shortfalls was disproportionate.** Companies also stated that the scale of the shortfalls applied by Ofwat was disproportionate. These companies have proposed a variety of factors that should be recognised in shortfall calculations including changing environmental obligations over the price control period, comparative performance, GMEAV valuations of failing assets, the number of indicators in the sub-service and the use of willingness to pay analysis to compare the size of the shortfall with the level of detriment suffered by customers.

- **Some indicators were more volatile than others.** Five companies also considered that some of the serviceability indicators were more volatile than others and that due regard of this volatility should be taken account of within the scaling of shortfalls.

A4.8.4 Our final determinations

We are making a number of changes to the shortfalls for serviceability for performance between 2010 and 2015 following our consultation at draft determinations.
We have considered all representations carefully and have taken several additional steps to ensure that our approach to serviceability is proportionate. These have included the following.

- Reviewing the previous historical serviceability documentation that has been put into the public domain and issued to companies.
- An independent consultant reviewing the assessments we made for our final determinations, including our assessments of exclusions from performance assessment.
- Enhancing the framework we used to test persistency, given different forms of variation in measured performance over different years.
- Sense checking our final decisions against newly gathered information from companies across the sector (those both affected and unaffected by shortfalling at draft determinations) on the costs of delivering PR09 outputs.
- Reviewing the way in which we calculate shortfalls.
- Considering the application of additional specific factors as part of our assessment of proportionality and altering the calculation to take account of greater variability in three indicators compared to all other indicators.

A4.8.4.1 Historical serviceability documentation

It is important to understand what was established in the PR09 final determinations, for the 2010-15 period, as this represents the most formal communication on serviceability and the basis on which each company should have organised its business over that period having accepted those determinations. Accordingly, we have carried out a detailed review of the key documentation published and provided to companies at the time of our final determinations in 2009. These were:

- ‘Future water and sewerage charges 2010-15: final determinations’ (the national document) published in November 2009;
- company-specific supplementary reports, which were sent to companies on 25 November 2009; and
Some representations highlighted an inconsistency between the national document, in which we reference the measurement of serviceability performance through a basket of indicators and the company-specific supplementary reports and PR09/38 where we state the company is required to demonstrate stability in all indicators.

In the national document, we said:

“…we will monitor and regulate serviceability by measuring a basket of serviceability indicators for all assets, which include asset performance indicators, water quality indicators, environmental compliance and consumer service indicators.”

And in each company’s PR09 final determination letter of 25 November 2009 and, in particular annex B, we stated:

“We will assess you against the delivery of the output requirements, not on how much you spend. You must... maintain all your assets systems so that they can sustain (or achieve) stable serviceability – fitness for purpose – throughout the period and beyond....

In addition, we expect you to deliver the defined maintenance activity outputs as set out in our determination.”

In parallel with this letter, each company was sent a detailed supplementary report at PR09. Each company’s supplementary report stipulated the detail relating to it and this created the company-specific standards by which its performance was to be judged. The relevant indicators are set out in the supplementary report, and we are clear about expecting each company to monitor its performance against the indicators and to manage and maintain assets such that all indicator values remain well within the control limits and that they exhibit a stable or improving trend year on year. In particular, we said:

“Should you fail to demonstrate a stable or improving trend in any indicator in 2014 our starting point will be a shortfall in output.”

No company queried or challenged the AMP5 serviceability methodology or process set out in the 2009 final determination documentation and PR09/38, until PR14 was well advanced. Challenges to reference levels and control limits set at PR09 were received during the 2012 review of serviceability and thereafter as part of the PR14 process. In our PR09 technical summary document, PR09/38, we set out the serviceability framework with more detail and provided a timeline for delivery of
serviceability outputs. PR09/38 contained an important phrase, echoing the wording of the supplementary reports:

“We expect the companies to monitor each indicator and to manage and maintain assets so that all indicator values remain well within the control limits.”

We therefore consider it was clear that each company was aware, by virtue of this communication and from the specific supplementary reports of the indicators stipulated or agreed with us; that it was under an obligation to ensure stability with respect to the stipulated indicators (as defined); and that it would expect shortfalling consequences as our starting point if by 2014 instability was present in respect of any of them.

Over the regulatory period, companies were then obliged to report regularly on indicator performance (albeit at the basket level) and to take steps to ensure that performance was indeed stable ahead of the full periodic review of performance achieved for each indicator. Some companies also provided additional information related to performance of individual indicators and actively engaged with Ofwat to discuss performance of these indicators. Some companies have therefore worked to their supplementary report which stipulated the detail relating to each company and this established the standards by which that company’s performance was to be judged.

**A4.8.4.2 Independent serviceability assessment review**

Following draft determinations, we appointed an external engineering consultant, Strategic Management Consultants (SMC), to assess the logic and reasoning for the shortfalls being considered for the PR14 final determinations. SMC was further asked to comment on the appropriateness of shortfalls and the consistency of approach between companies. SMC reviewed raw data on serviceability, PR09 performance parameters, the Ofwat draft decisions, company responses and supporting evidence in order to form an independent view of company evidence and appropriate actions.

SMC confirmed that the shortfall assessments appeared appropriate when compared to our criteria and methodology, and to have been identified in a consistent manner across companies. SMC agreed with our conclusions for all companies where we were considering applying a shortfall. The SMC report is published as an annex alongside these final determinations.
A4.8.4.3 Framework for assessing the persistency of shortfalls

In order to test the appropriateness and consistency of our shortfalling decisions, we have developed and applied a persistency framework for these final determinations. Serviceability is classified into one of four performance categories, which are graded by order of severity, where “improving” is the best assessment, followed by “stable”, then “marginal”, with “deteriorating” the worst. The companies are required to maintain at least stable serviceability.

We apply these categories at indicator and sub-service level. At indicator level it is a judgement based on the trend of the performance and proximity to the reference level and control limits. For the sub-service assessment it is based on a judgement of the overall performance of the sub-service. For performance in 2010-15, shortfalls are applied at the indicator level. We said at final determinations in PR09 that companies are at risk of being shortfalled if we assess the indicator as less than stable (marginal or deteriorating) in any year beyond 2011-12. Where a company is not stable in 2013-14 it should assume that it will be shortfalled. There are many different scenarios associated with these statements. As a result, we have developed a persistency framework to test the appropriateness and consistency of our draft determinations shortfall conclusions.

The framework considers persistency in terms of upper control limit breaches to determine if a shortfall should be applied. There are 16 possible scenarios, all of which have the outcome of ‘no shortfall to be applied’ or ‘shortfall to be applied’. The application of this framework is not entirely mechanistic: there are some scenarios where a judgement may need to be taken, for example in cases 10 and 13 (see table A4.14). Single year failures also require a judgement of performance, for example, there may only be one upper control limit breach, but performance may be persistent just below or on the upper control limit in all other years, in which case a shortfall may still be applied. We present the 16 possible scenarios in table A4.14 and match them to the number of indicator profiles across all companies’ serviceability performance and show how many are resulting in a shortfall at final determinations.
Table A4.14 Serviceability persistency framework, company performance and the number of resulting shortfalls

<table>
<thead>
<tr>
<th>ID</th>
<th>2011-12</th>
<th>2012-13</th>
<th>2013-14</th>
<th>2014-15</th>
<th>Colour key</th>
<th>Number of indicators</th>
<th>Number of FD shortfalls²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No shortfall – no failings</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>No shortfall – single year failure</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>No shortfall – single year failure</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>Shortfall</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>No shortfall – single year failure</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>Shortfall</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>Shortfall</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Shortfall</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>No shortfall – single year failure</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>No shortfall if there is no discernible trend</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>Shortfall</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Shortfall</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>No shortfall if there is a company action plan</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Shortfall</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Shortfall</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Shortfall</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Notes:**
An X denotes an upper control limit breach.

1. The number of indicators represents the number of indicator profiles across all companies’ serviceability performance that match each scenario.
2. The number of FD shortfalls represents the number of indicator profiles that have subsequently resulted in a shortfall.

Applying the persistency framework to our shortfall decisions at final determinations has confirmed that the shortfalls applied are appropriate and coherent with our stated serviceability methodology and process. It should be noted that the serviceability assessments, using expert judgement where required, that we
discussed in section A4.8.4.2 above and that was externally assured by SMC, are the primary means of determining if a shortfall should be applied; the persistency framework has only been used as a further cross-check to test the consistency and coherence of these assessments.

**A4.8.4.4 Sense check of shortfall values**

In addition to cross-checking our shortfalling decisions, we have also investigated whether our approach to establishing the value of shortfalls was appropriate. Towards this end we sent a query to all companies to request 2010-15 actual capital maintenance expenditure by serviceability indicator. We wanted to use the data from this query to determine the industry average percentage of expenditure for each indicator. The results of the query request are shown in the table A4.15 below. We tested this data in the serviceability shortfall calculation in place of the equal unscaled shortfall values. This effectively placed a weighting on each indicator proportionate to the level of average expenditure.
Table A4.15 Percentage average capital maintenance expenditure (2010-15) by serviceability indicator

<table>
<thead>
<tr>
<th>Water infrastructure indicators</th>
<th>%age of total sub-service</th>
<th>Water non-infrastructure indicators</th>
<th>%age of total sub-service</th>
<th>Sewerage infrastructure indicators</th>
<th>%age of total sub-service</th>
<th>Sewerage non-infrastructure indicators</th>
<th>%age of total sub-service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bursts</td>
<td>28.2%</td>
<td>WTW Coliforms(^4)</td>
<td>16.4%</td>
<td>Sewer collapses</td>
<td>40.7%</td>
<td>STW Non-Compliance</td>
<td>18.6%</td>
</tr>
<tr>
<td>Interruptions &gt;12h</td>
<td>12.6%</td>
<td>SR Coliforms</td>
<td>6.2%</td>
<td>Pollution Incidents (Cat 1, 2 &amp; 3)</td>
<td>11.7%</td>
<td>STW PE Non-Compliance</td>
<td>17.7%</td>
</tr>
<tr>
<td>Iron MZC</td>
<td>4.3%</td>
<td>Turbidity</td>
<td>6.5%</td>
<td>Flooding Other Causes</td>
<td>11.8%</td>
<td>Unplanned Maintenance</td>
<td>13.6%</td>
</tr>
<tr>
<td>Low pressure</td>
<td>1.9%</td>
<td>Enforcement Actions</td>
<td>4.8%</td>
<td>Flooding Overloaded Sewers</td>
<td>5.3%</td>
<td>SNI – Other</td>
<td>50.1%</td>
</tr>
<tr>
<td>Discolouration</td>
<td>8.2%</td>
<td>Unplanned Maintenance</td>
<td>10.8%</td>
<td>Sewer blockages</td>
<td>15.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution index TIM</td>
<td>4.2%</td>
<td>WNI – Other</td>
<td>55.3%</td>
<td>Equipment failures</td>
<td>3.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WI – Other</td>
<td>40.7%</td>
<td></td>
<td></td>
<td>SI – Other</td>
<td>11.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WI – Total</td>
<td>100%</td>
<td>WNI – Total</td>
<td>100%</td>
<td>SI – Total</td>
<td>100%</td>
<td>SNI – Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

\(^4\) Dŵr Cymru has been removed from this analysis as an outlier.
We can draw the following conclusions from the data received.

- For three out of four sub-services the 50% cap on serviceability shortfalls seems appropriate (approximately 50% of the overall expenditure in the sub-service is associated with serviceability indicators). The exception is water non-infrastructure, where even more expenditure – around 88% – is associated with the serviceability indicators).

- There is one indicator in each sub-service which has a larger proportion of the expenditure except for sewerage non-infrastructure, where it seems it is more difficult to clearly split the expenditure between the three indicators (for example, bursts in WI, WTW coliforms in WNI and sewer collapses in SI).

We note, however, that the data provided by the companies and hence the analysis carried out had some material limitations.

- Not all companies responded, although most provided some information. Three companies were not able to provide any data (Anglian Water, Thames Water and Sutton & East Surrey Water), a further five provided data which was considered to be inconsistent (Northumbrian Water, Dee Valley Water, Portsmouth Water, Sembcorp Bournemouth Water and South East Water), while the remaining ten companies provided consistent data.

- Companies used different methods to allocate expenditure, there was little evidence that the data represented efficient levels of expenditure, and the data had not been assured by either the company or by us (given the limited time available).

Applying these average percentages to the shortfall calculation results in substantial changes to the shortfall values, particularly where companies have failing indicators with the larger proportions of expenditure associated with them. Compared with the shortfalls applied at draft determinations, all shortfall values would increase and those in the water non-infrastructure sub-service would increase the most. Moving away from our draft determination approach, in this way, would therefore have increased the size of the applied shortfalls.

**A4.8.4.5 Approach to calculating shortfalls**

As a result of this and due to the representations we have received that the levels of shortfalls using our approach at draft determinations was disproportionate, we have looked again at our approach to calculating shortfalls. In PR09/06 in November 2007 we said that the maximum scale of any shortfall would be 50% of the sub-service
expenditure. We also confirmed this statement in our final determination documents in 2009. This reflected a judgement on the level of expenditure suitable for clawing back underspend.

As described above, our shortfall calculations at draft determinations used an even split of expenditure for each indicator. To do this we divided 50% of the allowed sub-service expenditure by the number of indicators assigned to that sub-service. This was called the unscaled shortfall. This value was then multiplied by a linear scaling factor to reflect the performance of that indicator (the worse the performance above the upper control limit, the higher the scaling factor), with the maximum scaling factor being capped at a factor of 2.

We have used the additional evidence obtained through our query to consider whether we could have adopted an alternative approach to the scaling factor. In particular, we have found that applying a x1 cap to our scaling factor and using the average expenditure percentages in the shortfall calculation results in shortfall values that are below the level at draft determinations, but above those that moving to a x1 scaling factor applied to equally weighted sub-service indicators would generate. We note however, that the quality of the data we obtained from our query response was not sufficiently robust, as it had not been audited or assured, to use in the serviceability calculations in the final determinations. We are therefore unable to move to an approach of weighting shortfalls by average subservice expenditure per indicator as part of our final determinations.

Even so, this exercise has demonstrated that our approach to shortfalling in the draft determinations might result in disproportionately large values. We have therefore decided to remove the x2 cap on our scaling factor but retain our even split of expenditure for each indicator. The result of this change is to reduce the scale of shortfalls and aligns them more closely with the stated desire that the shortfall should be a recovery of cost which has been allowed for the purpose of maintaining serviceability and is not a penalty. We also note that with this approach the maximum shortfall for any sub-service is automatically set at 50% of the allowed sub-service expenditure. This is in line with our approach to capping the value of shortfalls at 50% of the allowed sub-service expenditure.

A4.8.4.6 Further adjustments to shortfalls for proportionality

In addition to the changes above, we have also investigated whether there are alternative approaches to determine a further adjustment for proportionality. We issued a follow-up query on 14 November inviting all companies and key stakeholders to provide views on the mitigating factors they consider would be relevant to any potential moderation of the serviceability shortfall calculations for our
final determinations. In the query, we provided three examples of mitigating factors and two aggravating factors that, if sufficient data were available, we considered could be used to adjust our serviceability shortfall calculations. We invited respondents to comment on these factors and suggest their own.

We received 21 responses. Most respondents showed support for the use of a proportionality step and the application of mitigating factors. Only one respondent considered such an approach could encourage regressive asset management strategies and behaviours. In addition, many respondents also suggested mitigating factors of their own for our consideration. We reviewed each factor that a respondent suggested but, in most cases, either concluded:

- that we did not agree with the use of the suggested factor; or
- that it was already part of our analysis; or
- that the factor might have merit but required additional information to be of use to the analysis, which the companies had not included.

One company suggested a mitigating factor that we considered was worthy of further analysis. This company suggested that in considering serviceability failures, it is important to reflect the underlying nature of the indicator in question, including the degree of natural volatility relative to the allowed variation in the monitoring regime.

We agree that the underlying volatility of an indicator could be used as a mitigating or attenuating factor in the calculation of serviceability shortfalls, but only if there was strong evidence of a heightened level of volatility for relevant indicators. We consider this to be particularly important to consider given that when control limits were originally set at FD09 companies could have considered that volatility of any one indicator could have been managed across a basket of indicators.

We have analysed the volatility of the serviceability data for each indicator that would otherwise result in a shortfall in our final determinations. To measure volatility we have looked at the normalised standard deviations using a five- and ten-year data sample\(^5\). We have also taken a simple average across these two measures of volatility. We present the results of this analysis in the table A4.16 below.

The table demonstrates that two indicators stand out as having substantially higher volatility than the other five. These indicators are Interruptions > 12 hours (DG3) and sewage treatment population equivalent. Water treatment works coliforms has lower

\(^5\) Before calculating the standard deviation, we have normalised the data using the mean value of the sample.
volatility than the two most volatile indicators, but higher volatility than the other four indicators.

Table A4.16 Five- and ten-year volatility for indicators associated with shortfalls at final determinations – normalised standard deviations (SD)

<table>
<thead>
<tr>
<th>Indicators resulting in final determination shortfalls</th>
<th>10-year SD</th>
<th>5-year SD</th>
<th>Average across measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage treatment population equivalent*</td>
<td>1.54</td>
<td>1.71</td>
<td>1.63</td>
</tr>
<tr>
<td>Interruptions&gt;12hr (DG3)</td>
<td>1.64</td>
<td>1.14</td>
<td>1.39</td>
</tr>
<tr>
<td>Water treatment works coliforms</td>
<td>0.77</td>
<td>0.74</td>
<td>0.76</td>
</tr>
<tr>
<td>Discolouration contacts</td>
<td>0.32</td>
<td>0.17</td>
<td>0.25</td>
</tr>
<tr>
<td>Pollution events</td>
<td>0.26</td>
<td>0.22</td>
<td>0.24</td>
</tr>
<tr>
<td>Flooding other causes</td>
<td>0.23</td>
<td>0.19</td>
<td>0.21</td>
</tr>
<tr>
<td>Sewer blockages*</td>
<td>0.13</td>
<td>0.1</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Note:
*For sewage treatment population equivalent and sewer blockages we only have nine years of annual data in our datasets.

Our query, and the subsequent volatility analysis, indicates that separate indicator volatility could have been a consideration at PR09 in setting upper control limits (UCLs). While we are not amending the reference levels and control limits for these final determinations (as this would be both retrospective and that companies were given an opportunity to raise such issues with us in 2012), we have applied a volatility factor to reduce the scale of the shortfall where indicators are prone to significant variation reducing the impact on the magnitude of the shortfall for these indicators. Furthermore, given the late stage of introducing a step on volatility, it would not be appropriate for the factor to have a major impact on the total value of shortfalls. We have chosen to differentiate the factor to reflect the difference in volatility between the two most volatile indicators: DG3 interruptions indicator and the sewage treatment population equivalent compliance indicator.

As a result, we have applied a volatility factor of 0.75 to the shortfalls associated with failures of the DG3 and sewage treatment population equivalent indicators. To reflect the lower volatility of the water treatment works coliforms, we have applied a marginally higher volatility factor or 0.875.
A4.8.4.7 Our final determinations – shortfalls

We have gathered additional information from the companies on how expenditure is allocated to the serviceability indicators. This lends support to the application of the 50% cap, in that around 50% of sub-service expenditure appears identified to sustaining serviceability in each sub-service, as measured by these indicators. However, given the constraints of this data, we have not used it to directly adjust our approach to shortfalling.

At draft determinations, we limited the contribution that an individual indicator could make to the shortfall to two times the share of the evenly apportioned expenditure. As a result of our query to companies and the subsequent analysis undertaken, we are persuaded by arguments that this is disproportionate. We have therefore adjusted our approach to limit the contribution to a shortfall of each indicator to \( x1 \) of the evenly apportioned expenditure. All things being equal, this halves the shortfalls.

Furthermore, as stated above, we have chosen to apply a volatility factor to reduce the scale of our shortfalls. We have chosen two volatility factors to apply to three indicators. They will reduce the size of the shortfalls for companies with failing unstable indicators for DG3 interruptions, sewage treatment population equivalent compliance and treatment works coliforms.

Our final adjustments for serviceability, for each company, in the relevant company-specific appendix: wholesale water adjustments are provided in section A2.3.4 and wholesale wastewater adjustments in section A3.3.4. In light of our further analysis done and the adjustments to the assessment approach described above we are reducing in the final determinations almost all the shortfalls that were applied in the draft determinations. We consider that these shortfalls appropriately protect customers’ interests by ensuring that companies return funding they received where stable serviceability was not delivered.
Table A4.17 Serviceability shortfalls applied as part of final determinations

<table>
<thead>
<tr>
<th>Company</th>
<th>Indicator</th>
<th>Draft determinations (£m)</th>
<th>Final determinations (£m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dŵr Cymru</td>
<td>Interruptions&gt;12hr (DG3)</td>
<td>32.3</td>
<td>12.6</td>
</tr>
<tr>
<td>Northumbrian Water</td>
<td>Flooding other causes</td>
<td>1.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Southern Water</td>
<td>Interruptions&gt;12hr (DG3)</td>
<td>12.2</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Flooding other causes</td>
<td>3.2</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment population equivalent</td>
<td>137.7</td>
<td>51.6</td>
</tr>
<tr>
<td>Severn Trent Water</td>
<td>Interruptions&gt;12hr (DG3)</td>
<td>11.1</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Water treatment works coliforms</td>
<td>45.0</td>
<td>24.9</td>
</tr>
<tr>
<td></td>
<td>Sewer blockages</td>
<td>15.2</td>
<td>9.8</td>
</tr>
<tr>
<td></td>
<td>Pollution incidents (enhanced standard)</td>
<td>13.6</td>
<td>13.6</td>
</tr>
<tr>
<td>Thames Water</td>
<td>Interruptions&gt;12hr (DG3)</td>
<td>18.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Pollution incidents</td>
<td>24.4</td>
<td>13.5</td>
</tr>
<tr>
<td></td>
<td>Flooding other causes</td>
<td>10.1</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>Sewer blockages (enhanced standard)</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Yorkshire Water</td>
<td>Sewer blockages</td>
<td>2.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Bristol Water</td>
<td>Interruptions&gt;12hr (DG3)</td>
<td>6.3</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>Iron compliance (water)</td>
<td>5.6</td>
<td>0.0</td>
</tr>
<tr>
<td>South East Water</td>
<td>Interruptions&gt;12hr (DG3)</td>
<td>17.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Dee Valley Water</td>
<td>Discolouration contacts</td>
<td>0.0</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Total (£m)</strong></td>
<td></td>
<td><strong>359.0</strong></td>
<td><strong>149.0</strong></td>
</tr>
</tbody>
</table>

**Note:**
Both Severn Trent Water and Thames Water received shortfalls at our draft determinations for indicators with enhanced standards. The calculation of these shortfalls lies outside our formal methodology and so their values have not been affected by our revised methodology.
A4.8.5 2015 review of serviceability

We do not presently have data for actual performance in the final year of the current price control (2014-15). But as noted in ‘Setting price controls for 2015-20 – further information on reconciling 2010-15 performance’ in April 2014, we propose to reconcile serviceability and the change protocol in the summer of 2015. In carrying out this reconciliation we will take a proportionate approach to making adjustments (for example, applying materiality thresholds where appropriate) and implement these changes at the next wholesale price control review in 2019.

The current regulatory serviceability measures are replaced in the 2015-20 period by performance commitments and outcome delivery incentives including those relating to asset health which will be reconciled as part of the 2019 wholesale price control(s).
A4.9. The 2009 agreed overlap programme

We introduced the 2009 agreed overlap programme mechanism at PR09 to allow companies to put forward projects in their business plans that we expected to start in the current price control period, but did not expect to finish until the next price control period (2015-20). This investment mechanism was designed to promote better management of such investment projects and encourage companies to take a long-term approach to planning investment. The mechanism helps companies to avoid the uncertainty arising from the periodic review process when the project was committed and ongoing, and should ensure that the costs to customers are lower overall.

Projects that qualified for this programme needed to have a primary objective of delivering an enhancement in service for customers. They also required measurable outputs, milestones and specified delivery dates. Certain thresholds also had to be met, which were set out in section B9 of the 2009 final business plan reporting requirements.

A4.9.1 Methodology and process

When we introduced the overlap mechanism, we said that we would ask companies to confirm in their business plans, the capital expenditure they required to complete the project for the coming price control period 2015-20. If this expenditure was more than we had assumed when we originally set price limits for 2010-15, we explained that we would carry out a financial reconciliation to reflect the changed expenditure profile for the current and future price control periods. The reconciliation is primarily in relation to the rewards/penalties awarded through the CIS and the consequential revenue and RCV adjustments, discussed in section A4.6 above.

We have now completed our work in PR14 for the 11 overlap projects considered at PR09. The process we have followed is a scheme-by-scheme review of delivery progress and the associated costs in both price control periods. We have taken account of factors such as whether a company has achieved genuine outperformance, whether the company has suffered delays or whether a company has been able to accelerate completion of the scheme. These factors have influenced our decisions of whether to make two-sided logging up or logging down adjustments to the CIS baseline in 2010-15, or to allow a company the benefit from any outperformance in the CIS reconciliation.
A4.9.2 Our draft determinations

In their revised business plans, the six affected companies provided us with updated forecast expenditure for the 11 projects concerned for the 2010-15 period and the 2015-20 period.

We did not include in our draft determination assessments for this mechanism three other projects proposed in the companies’ business plans, on the basis that these projects did not form part of the overlap programme agreed at PR09. The 11 schemes considered are detailed below.

Table A4.18 Overlap schemes reconciled in the 2014 price review

<table>
<thead>
<tr>
<th>Company</th>
<th>Service</th>
<th>Scheme/project name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglian Water</td>
<td>Water</td>
<td>Grafham water treatment works resilience</td>
</tr>
<tr>
<td>Thames Water</td>
<td>Wastewater</td>
<td>Deephams sewage treatment works upgrade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Swindon network</td>
</tr>
<tr>
<td>United Utilities</td>
<td>Water</td>
<td>Vyrnwy large diameter trunk main cleaning</td>
</tr>
<tr>
<td></td>
<td>Wastewater</td>
<td>Davyhulme wastewater treatment works (Freshwater Fish Directive)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sandon Dock (Urban Waste Water Treatment Directive)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unsatisfactory intermittent discharge schemes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stockport wastewater treatment works nitrate vulnerable zone designation</td>
</tr>
<tr>
<td>Wessex Water</td>
<td>Water</td>
<td>Integrated grid</td>
</tr>
<tr>
<td>Affinity Water</td>
<td>Water</td>
<td>Combined operational security</td>
</tr>
<tr>
<td>South East Water</td>
<td>Water</td>
<td>Security and Emergency Measures Direction</td>
</tr>
</tbody>
</table>

A4.9.3 Issues raised by representations

There were no policy-related representations on the overlap programme.
A4.9.4 Our final determinations

We have reflected our final adjustments for the overlap programme for each company in annex 3 of the relevant company-specific appendix.

**Table A4.19 PR09 agreed overlap programme adjustments and assumptions (£ million)**

<table>
<thead>
<tr>
<th></th>
<th>2010-15</th>
<th>2015-20</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capex</td>
<td>Opex</td>
</tr>
<tr>
<td><strong>Two-sided adjustments for inclusion in the CIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Companies’ view</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Ofwat view</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Wastewater service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Companies’ view</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Ofwat view</td>
<td>38.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Expenditure forecasts to complete the projects</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The overlap programme will be closed as an ongoing mechanism for future control periods. It will not require any future reconciliation in the period 2015-20.
A4.10. The 2014-15 transition mechanism

We introduced the 2014-15 transition mechanism for PR14 to give companies the facility to plan more effectively, make better use of resources and the supply chain and ease the transition between price control periods. This was in response to one of twelve key recommendations identified in HM Treasury report on ‘Smoothing investment cycles in the water sector’ (published in July 2012). This study formed part of the Government’s Infrastructure Cost Review programme to understand the impacts and causes of cyclical investment in the water sector.

The mechanism allows capital investment which will deliver outcomes in 2015-20, to be brought forward into 2014-15 financed by the companies. The capital investment is then funded by customers through price controls after 2015.

A4.10.1 Methodology and process

We stated in our final methodology statement that companies will bear the additional costs of financing this dedicated ‘transition investment’, but we will exclude the associated capex when determining incentive rewards and penalties under the CIS. Instead, we will take account of this transition expenditure in setting allowances and incentives for the next control period. We did not place any restrictions on the types of investment companies could propose in their business plans.

As transition investment is a company choice, we have not intervened in the choices and decisions made by the companies. We have taken account of this transition expenditure within our cost assessment decisions for 2015-20.

A4.10.2 Our draft determinations

In our draft determinations, we accepted, without intervention, all the transition investment proposed by companies in their revised business plans.

A4.10.3 Issues raised by representations

No policy-related representations were raised by respondents.
A4.10.4 Our final determinations

We have accepted all the company proposals. The allowed expenditure associated with these proposals will be funded from 2015, via the wholesale price controls. These are set out for each company, in annex 3 of the relevant company-specific appendix.

Table A4.20 Transition programme in 2014-15

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water service</td>
<td>117.6</td>
<td>6.4%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Wastewater service</td>
<td>244.9</td>
<td>9.3%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

At an industry level, transition investment proposed by companies for 2014-15 totalled £363 million with £118 million in the water service and £245 million in the wastewater service. This represents 8% of the total expenditure forecast in 2014-15 and 1.5% of the overall total expenditure forecast for the 2015-20 period.
A4.11. RCV midnight adjustment

RCVs are a measure of investment in a regulated business. It is used by investors as a valuation for the regulated business, allowing them to assess the level of borrowings and profitability. The ‘RCV midnight adjustment’ is a generic term which covers all of the necessary adjustments we make to the starting RCV for the next control period to account for differences between the RCV projections we made in 2009 and companies’ outturn positions.

The most significant ‘midnight adjustment’ is that generated by the CIS RCV adjustment (section A4.6) which includes the impacts under the change protocol (section A4.7). The impact of serviceability shortfalls (section A4.8) and Thames Tideway logging up is also included.

A4.11.1 Methodology and process

We set out and explained the process of RCV midnight adjustment when we published the midnight adjustment feeder model. Adjustments to the RCV which have not been covered elsewhere in this document are for land sales, 2009-10 capex outperformance, and other adjustments proposed by companies.

For land sales, we have continued the approach first used at PR94 where we deduct 50% of the net proceeds of qualifying land sales from the RCV.

The adjustment for the 2009-10 capex outperformance is necessary to deal with the ‘blind year’ effect where we did not know what the actual capex was for 2009-10 at the last price review and used the companies’ best estimates at the time. We therefore need to adjust for this at PR14. To deal with this year we have duplicated the calculations from the PR09 financial model in the PR14 feeder model to ensure consistency.

We discuss the other adjustments proposed by companies in the company-specific appendices.
A4.11.2 Our draft determinations

In our draft determinations, we adjusted the closing RCV at 31 March 2015, assumed at PR09, to give an opening value at 1 April 2015. These opening adjustments were:

- for logging up, logging down and shortfalls (excluding serviceability shortfalls and Thames Tideway) – discussed in section A4.7 above;
- for serviceability shortfalls – discussed in section A4.8 above;
- for the difference between actual and projected capex, part of the CIS reconciliation – discussed in section A4.6. above; and
- for land sales in the period 2010-15.

For water and sewerage companies, we adopted the splits of water and wastewater RCV proposed in their revised business plans.

A4.11.3 Issues raised by representations

A4.11.3.1 Land sales adjustments

We received one representation from Severn Trent Water on land sales adjustment to the opening RCV which is potentially applicable across all companies. The adjustment we used in the draft determinations applied a nominal discount rate to calculate a net present value of sales proceeds. The response asserted that this use of a nominal interest rate is out of line with other adjustments, which are calculated using real rates. The representation also assumed we had applied a discount rate relevant to the 2015-20 control period and contended that we should have used one relevant to the 2010-15 period instead.

A4.11.3.2 Adjustment for 2009-10 capex outperformance

Severn Trent Water also made a representation on our general approach to deriving the Infrastructure Renewals Expenditure (expenditure on underground assets, known as IRE) element of this calculation. It argued that the indexation of IRE was out of line with other capex items, in particular with regard to the use of COPI.

For some companies we did not take into account the grants and contributions data for 2009-10 correctly when making our calculations.
A4.11.4 Our final determinations

We have reviewed the draft determination representations carefully and as part of this review, commissioned an independent report by PwC on the issues raised. The report findings have informed our final determination decisions, which we set out below.

A4.11.4.1 Land sales adjustments

PwC’s report noted that the discounting methodology used for the land sales adjustment was inconsistent with the indexation approach used throughout the rest of the models, and that there was no prescriptive guidance in the policy saying how land sales will be rebased.

We have considered the view of Severn Trent Water but have decided not to change our draft determination approach to calculating the present value of the land sales proceeds. We use a nominal discount rate for this purpose, as we are discounting proceeds which are in outturn prices. Our calculations are consistent with the approach that we used since the inception of the RCV calculations and so it would not be consistent retrospectively to change the adjustment calculation. The change would also be immaterial in any event.

A4.11.4.2 Adjustment for 2009-10 outperformance

PwC’s report concluded that our policy did not set out how the IRE would be calculated, but noted that our approach was consistent with what we had done at PR09.

We have considered the view of Severn Trent Water but have decided not to change our approach at draft determinations to indexation of IRE in relation to the 2009-10 adjustment to the RCV. Our calculations are consistent with the approach we used at PR09, so it would not be consistent to retrospectively change the adjustment calculation at this point in the price control process. The change would be immaterial in any event.

We have ensured that grants and contributions data for 2009-10 have been recognised in the calculations. In some cases this has reduced the level of ‘net capex’ spend for 2009-10, which is used in the calculations for the final determinations.
Although not the subject of any representation, PwC’s report noted that 2009-10 discretionary spend is doubled-counted in the calculation of the capex cap. We accept that this is an error in the model. There is, however, no discretionary spend recorded in any of the RCV models. The double counting makes no difference as it is applied to zero spend, so we have not modified the model for final determinations.

A4.11.4.3 Summary of the final determinations

For the final determinations our RCV midnight adjustments are shown in table A4.21 below.

Table A4.21 Wholesale water and wastewater RCV midnight adjustments (£ million)

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
<th>Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closing RCV 31 March 2015</td>
<td>26,176.1</td>
<td>35,442.2</td>
</tr>
<tr>
<td>Land sales¹</td>
<td>-44.4</td>
<td>-43.1</td>
</tr>
<tr>
<td>Adjustment for actual expenditure 2009-10²</td>
<td>130.6</td>
<td>-70.4</td>
</tr>
<tr>
<td>Adjustment for actual expenditure 2010-15³</td>
<td>-414.0</td>
<td>-696.2</td>
</tr>
<tr>
<td>Net adjustment from logging up and logging down³,⁴</td>
<td>-73.8</td>
<td>25.3</td>
</tr>
<tr>
<td>Adjustment for shortfalls³,⁴</td>
<td>-39.7</td>
<td>-94.9</td>
</tr>
<tr>
<td>Adjustment for serviceability shortfalls⁵</td>
<td>-47.1</td>
<td>-101.8</td>
</tr>
<tr>
<td>Enhanced reward⁶</td>
<td>9.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Other adjustments⁷</td>
<td>19.6</td>
<td>457.5</td>
</tr>
<tr>
<td>Opening RCV 1 April 2015</td>
<td>25,716.5</td>
<td>34,923.8</td>
</tr>
</tbody>
</table>

Notes:
1. For land sales, we have continued the approach first used at PR94 where we deduct 50% of the net proceeds of qualifying land sales from the RCV.
2. The adjustment for the 2009-10 capex outperformance is necessary to deal with the ‘blind year’ effect where we did not know what the actual capex was for 2009-10 at the last price review.
3. A component of the CIS adjustment
4. The net adjustment from the change protocol.
5. The serviceability shortfall adjustment.
6. RCV reward for enhanced status, applied to South West Water and Affinity Water
7. Other RCV adjustments not listed above. We have included the adjustments in respect of Thames Water’s Thames Tideway Tunnel price control which amount to £314 million above what was anticipated at PR09.
Our final adjustments are reflected, for each company, in the relevant company-specific appendix: wholesale water adjustments are provided in section A2.3.4 and wholesale wastewater adjustments in section A3.3.4.

We do not presently have data for actual performance in the final year of the current price control (2014-15), so the RCV midnight adjustments include our forecast of relevant 2014-15 capital expenditure. In the same information notice, we proposed to reconcile the CIS to take account of actual 2014-15 expenditure in the summer of 2016. This remains our intention.

The CIS reconciliation will examine differences between outputs and costs against our PR09 assumptions, taking into account relevant final construction output price indexation (COPI) adjustments and will determine the associated final rewards and penalties for the CIS, with final revenue and RCV adjustments being determined in consequence. In carrying out this reconciliation we will take a proportionate approach to making adjustments (for example, applying materiality thresholds where appropriate) and implement these changes at the next wholesale price control review in 2019.
Ofwat (The Water Services Regulation Authority) is a non-ministerial
government department. We are responsible for making sure that the
water sector in England and Wales provides customers with a good
quality and efficient service at a fair price.