December 2014

Setting price controls for 2015-20

Final price control determination notice: policy chapter A7 – risk and reward

Contents

Overview

At this price review (PR14), we have sought to ensure that companies face appropriate risks, rewards and penalties. Effective rewards and penalties benefit customers by providing meaningful incentives to deliver the best service and by ensuring risks are allocated to companies where they are best placed to manage them. The overall level of return (based on companies' expected performance) directly impacts customer bills.

This policy chapter sets out our approach to assessing risk and reward in setting final determinations for the five years from 1 April 2015 and summarises the results of our review of representations received following publication of the draft determinations. It provides our final position for the appropriate level of risk and reward. These are summarised below.

Our final determinations

- We have only allowed specific additional uncertainty mechanisms for water business rates (applicable to all companies) and particular risks in relation to the Thames Tideway Tunnel (Thames Water – Thames Tideway price control only).

- Based on company estimates of potential variance in returns under high and low scenarios, the average notional return on regulated equity (RoRE) ranges from 1.3% to 8.6%, which is broadly unchanged from the range set out in our draft determinations.

- We have considered the appropriate level of reward for companies given the risks that they will face and have determined the following.
  - For the two enhanced companies (South West Water and Affinity Water) we have continued to set the weighted average cost of captital (WACC) (real vanilla[1]), applicable to the regulatory capital value (RCV) in the wholesale water and wastewater controls at 3.70% due to the protection that they have through the 'do no harm' rule.

[2] 'Modification of the conditions of appointment (licences) of all water only and water and sewerage companies'.

  - An allowed WACC of 3.60%, applicable to the RCV of water and wastewater controls all other companies except Portsmouth Water and Sembcorp Bournemouth Water. This reduction reflects a fall in our expected cost of capital following a reduction in the forward looking cost of new debt since we published 'Setting price controls for 2015-20 – risk and reward guidance' (our 'risk and reward guidance') in January 2014 .
  - A company-specific uplift of 0.15% to the 3.60% WACC , applicable to Portsmouth Water and Sembcorp Bournemouth Water, where the benefits of providing the uplift to current and future customers exceed the incremental costs. This results in a WACC of 3.75% for both of these companies
  - A net margin for retail services of 1%, applicable to households in England and both households and non-households (consuming below 50 Ml a year) in Wales.
  - A net margin for retail services of 2.5%, applicable to English non-households, who will face competition from 1 April 2017.

- Our final determinations on the WACC and retail margins will save customers in excess of £2 billion over the period 2015-20, relative to companies' proposals in their December business plans. The reduction in the WACC since draft determination will save customers around £300 million over the period 2015-20.

- We have incentivised companies to manage demand risks through the wholesale revenue forecasting incentive mechanism (WRFIM).

Our approach

Our approach to risk and reward was set out in 'Setting price controls for 2015-20: final methodology and expectations for companies' business plans' (our 'final methodology statement') published in July 2013 and our risk and reward guidance, published in January 2014, and has the following key features.

- **Balanced risk and reward package:** effective rewards and penalties benefit customers by providing meaningful incentives to provide the best service at the lowest possible cost and by ensuring that risks are allocated to companies where they are best placed to manage them. We have considered the overall balance of risks facing companies in setting allowed wholesale returns, retail margins, incentives, scope for out and under-performance and specific uncertainty mechanisms.

- **Scenario modelling approach to risk:** we have applied a scenario modelling approach to analyse the overall balance of risks as calculated in relation to the RoRE.

- **Additional uncertainty mechanisms:** we have allowed additional specific uncertainty mechanisms that transfer risk to customers to be put in place only where companies are unable to influence the impact of risks on their business.

- **Return on RCV for wholesale controls:** we have applied a return on RCV to the wholesale price controls through determination of an appropriate weighted average cost of capital (WACC) and notional capital structure.

- **Net margin approach for retail controls:** we have adopted a net margin approach for setting allowed returns in retail businesses, with different margins appropriate for the household and non-household retail controls of English and Welsh companies given differences in competition risk.

- **Wholesale revenue forecasting incentive mechanism (WRFIM):** supporting our shift from setting price limits to setting revenue limits, we have adopted this new incentive mechanism to encourage companies to accurately forecast revenue and manage demand risks more effectively within the control period.

Key changes since draft determinations

The key changes we have made since the draft determinations are to:

- reduce the wholesale WACC from 3.70% to 3.60% for all non-enhanced companies based on the latest market evidence, enhanced companies will retain a WACC of 3.70% through the do no harm principle;
- update and expand our assessment of the company-specific uplift, although this does not affect the companies where we have allowed an uplift;
- update the company views of their risk range around the RoRE to reflect company representations;
- allow the gain share mechanism proposed by Sembcorp Bournemouth Water given the improvements made to the proposed arrangement by the company, and consequently allow the company a 80/20 sharing rate for the water business rates uncertainty mechanism; and

- amend the scope of the Thames Tideway Tunnel (TTT) price control (‘TTT Control’) uncertainty mechanism to allow the risk sharing with customers of specific costs if the procurement process for the Infrastructure Provider is not successful for a reason outside Thames Water’s prudent management control.

A7.1. Introduction

In this policy chapter, we set out and explain our approach to risk and reward in setting the final determinations for the five years from 1 April 2015. 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.

This introduction:

- sets out the structure of this policy chapter; and
- describes our approach to risk and reward.

A7.1.1 Document structure

In section A7.1.2 below we describe the development and refinement of our approach to risk and reward.

In the remainder of this policy chapter, we then explain our final approach to risk and reward.

- Section A7.2 considers risk, setting out the companies' views of the impact of risks, and our view of the impact of our interventions, in terms of the range in expected RoRE.

- Section A7.3 discusses uncertainty mechanisms, including our assessment of whether companies require additional specific mechanisms to manage risks associated with their business plans.

- Section A7.4 considers returns to remunerate these risks – that is, the allowed wholesale WACC and retail net margins, including our assessment of the evidence for a change in the cost of capital since our risk and reward guidance and company claims for uplifts on the wholesale cost of capital.

- Section A7.5 sets out the WRFIM, which will adjust companies' allowed revenues at the 2019 price review (PR19) to take account of differences between actual and projected demand in the forthcoming regulatory period.

Within each section, we outline:

- 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.

There are three annexes to this document (the last three are in separate documents).

- Annex 1: Updated evidence on the WACC for PR14: a report prepared for Ofwat.

- Annex 2: Company specific adjustments to the WACC. Review of company representations: a report prepared for Ofwat.

- Annex 3: benefits assessment of an uplift on the cost of capital.

Consistent with the final policy position set out in this chapter, we set out our company-specific decisions on risk and reward in the relevant company-specific appendices.

We also provide further detailed information on our assessment of risk and reward to support these company-specific conclusions in the company-specific uplift assessment models and individual company risk assessment tool models published alongside our final determinations.

We explain how we have arrived at the outcomes and the associated outcome delivery incentives (ODIs) we are requiring from companies in the period from 2015-20 in 'Policy chapter A2 – outcomes'. These ODIs and the limits that we have placed on companies' financial exposure to them form a key component of the total risks that companies face.

We discuss our approach to financeability and affordability in 'Policy chapter A8 – financeability and affordability' (the 'financeability and affordability policy chapter').

A7.1.2 Our approach

In July 2013, we modified companies' licences[2] to allow separate binding price controls for wholesale water and wastewater services and household and non-household retail services. One reason for these changes was to facilitate the retail market reforms that form part of the wider industry reforms set out in the Water Act 2014. This marked a move away from the single price control framework in place at previous price reviews. However, where there were advantages in doing so for customers, we retained the core features of the previous approach to setting price controls, including the use of RCVs, designed to encourage the provision of flexible, low-cost financing to support investment programmes.

We set out the key features of our proposed approach to risk and reward in July 2013 in 'Setting price controls for 2015-20: final methodology and expectations for companies' business plans' (our 'final methodology statement'). These included:

- continuing to apply a return on RCV to the wholesale price controls through determination of an appropriate notional capital structure and WACC;
- adopting a net margin approach for setting allowed returns in the retail businesses which are less asset intensive, with different margins appropriate for the household and non-household retail controls of English and Welsh companies given differences in competition risk;
- applying a scenario modelling approach to analyse the overall balance of risks to the return on regulatory equity (RoRE);
- moving from a cap on average prices to total revenues and replacing the existing revenue correction mechanism (RCM) with a new incentive mechanism (which we later defined as the wholesale revenue forecasting incentive mechanism – 'WRFIM') to encourage companies to manage demand risks more effectively within the control period;
- moving to company owned ODIs to provide financial incentives to companies to deliver the outcomes required by customers; and
- encouraging companies to come up with their own approaches to managing uncertainty and developing proposals for dealing with change that reflect their customer priorities and their own particular circumstances.

Companies first submitted their business plan proposals to us in December 2013. Following our initial testing of companies' views on risk and reward, it was clear that these were not in alignment with market evidence. Therefore, we issued IB 28/13,

[2] 'Modification of the conditions of appointment (licences) of all water only and water and sewerage companies'.

'Change to Ofwat's price review process', in which we stated that we would provide a further opportunity for companies pre-qualifying for enhanced status to amend their proposals on risk and reward. In January 2014, we published 'Setting price controls for 2015-20 – risk and reward guidance' (our 'risk and reward guidance') which provided our view on the industry cost of capital and other key financial parameters based on market evidence at the time. It also set out our view that to justify a company-specific uplift in the WACC, companies would need to demonstrate both higher financing costs and offsetting benefits to customers.

Since we published our risk and reward guidance, we have issued a number of additional policy documents relevant to our risk and reward approach as shown in the table below.

Table A7.1 Additional policy documents published relevant to risk and reward

Document name	Publication date	Description/policy content
'IN 14/09: 2014 price review – Ofwat's approach to the assessment of risk'	May 2014	Further information for companies on how to address risk as part of their business plan submissions in June.
'IN 14/10: 2014 price review – Ofwat's approach to the assessment of a company-specific uplift on the cost of capital'	May 2014	Further information for companies intending to submit proposals on a company-specific uplift to the cost of capital as part of their business plan submissions in June.
'Setting price controls for 2015-20, Draft price control determination notice: technical appendix A6 – risk and reward' (the 'risk and reward technical appendix to our August draft determinations')	August 2014	Our approach to risk and reward for the August draft determinations, consistent with our risk and reward guidance. It also provided: • drafting for the proposed notified item for water business rates; and • a summary of consultation responses and our decisions on the WRFIM. The detail on the TTT Control uncertainty mechanism was included in the Thames Water company specific appendix.

Document name	Publication date	Description/policy content
'Annex to technical appendix A6 – benefits assessment from a company-specific uplift on the cost of capital'	August 2014	Refined approach to assessing whether a company-specific uplift to the cost of capital was justified.

We provided details of company-specific interventions on risk and reward in our draft determinations in the relevant company-specific appendices to our draft determinations published in April, May and August.

A7.2. Risk

As set out in our final methodology statement, companies should own and be accountable for their business plans. Prudent and efficient risk management reduces future bill uncertainty for customers and incentives companies to manage risk in best interest of customers. We asked companies to adopt a robust and quantitative approach to risk analysis. This involved:

- scenario modelling to assess the impact of risks as calculated by the movement in the RoRE; and
- the allocation of risks between investors and customers.

We asked companies to express the risk range on a P10/P90 basis such that there was a 10% probability of an outturn occurring below the identified range, and an equal 10% likelihood of achieving a return above the identified range.

A7.2.1 Our draft determinations

We summarised the approach that we had adopted in assessing risk for the draft determinations in the relevant draft determination documents, including in section A6.2 of the risk and reward technical appendix to our August draft determinations. The appendix discussed the introduction of limits to ODI impacts for non-enhanced companies and signalled our intention to review the allowed cost of capital for non-enhanced companies in the light of recent market evidence.

The RoRE ranges set out in the draft determinations reflected company estimates of variations in total expenditure (totex) performance, finance and the service incentive mechanism (SIM) performance, together with our calculations of the impact of our interventions on performance commitments and ODIs. We asked companies to take account of the interventions set out in our draft determinations and provide information on the expected impact on their RoRE range in their representations on the draft determinations.

A7.2.2 Issues raised by representations

All companies had the opportunity to submit updated risk analysis following our draft determinations as part of their representations.

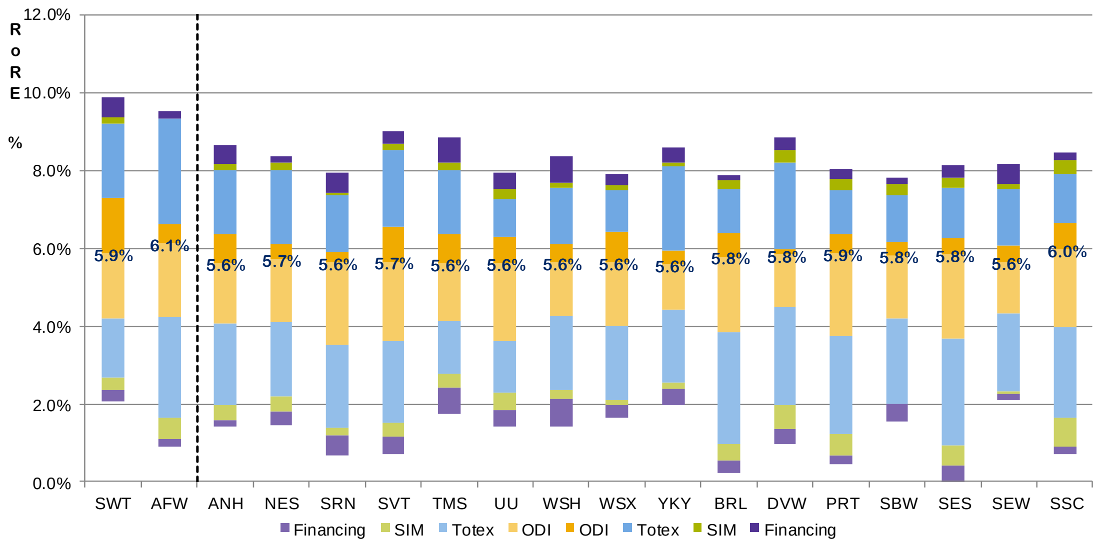
Thirteen companies proposed changes to ODI risk ranges in their representations. The changes reflected companies' views of our draft determination interventions to ODI specifications and company representations on specific ODIs. The majority of companies made no change or small adjustments to their totex risk ranges. Bristol Water, Wessex Water and United Utilities submitted more substantive changes which reflected their assessment of the impact of the gap between proposed and allowed totex. Wessex Water reduced its central estimate for RoRE below the return implied by the cost of capital. Bristol Water and United Utilities proposed revised totex outperformance ranges that were lower than the return implied by the allowed cost of capital in both the upside and downside scenarios. The responses from these three companies were inconsistent with our proposed approach and reflected their concern that the level of allowed totex would restrict their ability to achieve a return consistent with the allowed cost of capital. Of the remaining companies, Thames Water made the most significant adjustments responding to changes to the assumptions for the separate TTT control and the treatment of associated uncertainty mechanisms.

All companies other than Bristol Water maintained their original underlying assumptions for financing and SIM risk ranges. Bristol Water amended its SIM range to state that it expected to incur the maximum SIM penalty in both the upside and downside scenarios due to the reduction in allowed totex in the draft determination.

A7.2.3 Our final determinations

Figure 7.1 sets out the revised RoRE ranges based on the companies' representations and our subsequent interventions. The chart shows the contribution from each component of the risk range, totex performance, ODI, financing and SIM which are explained in more detail in the following paragraphs. The RoRE range is based on company representations and reflects expected variations for an efficient, notionally structured company. In practice, companies' actual returns may vary due to differences between notional and actual company gearing, notional and actual cost of debt, and cost efficiency relative to allowed totex. In many cases, companies have drawn on RoRE variations on returns against previous price controls in order to forecast variance over the period 2015-20, however, changes in PR14 methodology such as the move to a totex and outcomes approach provide new scope for outperformance for well managed companies.

Figure A7.1 Revised RoRE ranges



Source: Our calculations based on information from companies.

Note: Numbers presented based on calibration of the ODIs against an assumed menu choice of a 50% sharing factor

The RoRE range excludes the premium on margins for non-household retail. These amount to between an additional on base returns of 0.08% to 0.16% for WaSCs and 0.12% to 0.24% for WoCs. These additional returns were included in RoRE ranges that we published at draft determination.

The overall RoRE ranges for the two enhanced companies, South West Water and Affinity Water, have been shifted upwards by 0.3 percentage points reflecting the fact that they are allowed a wholesale cost of capital of 3.7% associated with enhanced status, while we have set a lower notional cost of debt for non-enhanced companies.

The average RoRE range for all companies is from 1.2% to 8.5%, comprising average variances of -4.6 percentage points to +2.7 percentage points around an average base return of 5.8%. These ranges reflect the companies' assumptions about risk in individual areas. This is unchanged from the draft determination range of -4.6 percentage point to +2.7 percentage points.

The average totex performance range is from -2.1 percentage points to +1.6 percentage points of RoRE, which is similar to the draft determination range of -2.2 percentage points to +1.6 percentage points. We have adopted the ranges that 16 companies set out in their representations. For two companies, Bristol Water and United Utilities, we have intervened in the estimation of totex RoRE ranges as we consider that the companies' representations on draft determination overstate the impact of reduced totex allowances by proposing totex ranges that were lower than the base return in both the upside and downside scenarios. We continue to consider that the base case RoRE should reflect an efficient notionally structured company and so should reflect our view of efficient totex. We note that the differences between the Ofwat view and the company view of allowed totex have narrowed significantly since draft determination (for Bristol from 56% to 32% of totex and for United Utilities from 20% to 3% of combined wholesale water and wastewater totex). We therefore continued to use the totex ranges proposed by the companies in their revised business plans.

The totex contribution to RoRE ranges assumes a 50% sharing rate from the totex menu[3]. The downside skew in part reflects the view of some companies that they would invest totex outperformance in further projects. Some companies also stated that the range did not reflect the benefits of the new totex approach, which may increase the potential totex upside.

The companies' average SIM range is from -0.4 percentage points to +0.2 percentage points (draft determinations: -0.4% to 0.2%), which is slightly narrower than the maximum possible based on the proposed maximum penalty of 1% of revenue and maximum reward of 0.5% of total appointee revenue. This reflects a range of company views about the extent to which, on a P10/P90 basis, they could achieve top and bottom rankings. We have not intervened in the ranges provided by companies in their representations, apart from Bristol Water where we consider that its revised assumption – that it will incur the maximum SIM penalty under all scenarios – lacks credibility. So, we have reverted to its draft determination range. We note that Bristol Water was ranked 5th in 2013-14 and we have allowed a SIM reward for above-average performance over the current period in our final determination, consistent with its past performance.

The average financing risk across companies is -0.4 percentage points to +0.4 percentage points, identical to the draft determination position. All companies, apart from Bristol Water, retained their original assumptions in respect of financing scenarios. There were a variety of views on whether the risks were biased to the upside or the downside, with the consensus being symmetrical around our expected allowed cost of debt. While we have reduced the allowed cost of debt reflecting

[3] The assumption of 50% sharing rate is a simplification of companies' sharing factors which will reflect their menu choices following final determination. It is also consistent with taking a notionally efficient company approach to our RoRE analysis, where we assume that P50 company outturn will reflect allowed totex in final determination. We have tested the sensitivity of the RoRE range to variations in menu choice and have found that variations in sharing factors have little impact on the RoRE range.

market evidence for final determination, we consider that companies' view of variance in returns still provides reasonable estimate of variance around the notional cost of debt.

The average ODI risk range is -1.7 percentage points to +0.6 percentage points, which is the same as the range we quoted in our draft determinations. The final determination range is based on:

- company assessments of our draft determination interventions;
- the impact of company representations on ODI specifications; and
- our assessment of the adjustments made in the final determinations.

Seven non-enhanced companies reach the aggregate 2% ODI penalty cap in their P10 downside scenario: Anglian Water, Northumbrian Water, Dŵr Cymru, Bristol Water, Portsmouth Water and South Staffordshire Water all reach the cap for water. Southern Water reaches the cap for both water and wastewater in its downside scenario. A further two non-enhanced companies are close to reaching the penalty cap: Severn Trent Water (both water and wastewater) and United Utilities (wastewater).

No non-enhanced companies are close to the reward cap. Pursuant to the 'do no harm' rule, there is no reward cap for enhanced companies.

Figure A7.1 above shows the ODI range following our interventions to non-enhanced companies.

A7.3. Uncertainty mechanisms

In our risk and reward guidance, we acknowledged that all companies face uncertainty about future costs and revenues. We consider that appropriate risk sharing mechanisms provide companies with incentives to manage risk and cost and provide better services.

Companies already have access to a range of uncertainty mechanisms, including the licence provisions to cover a relevant change of circumstances (RCC) and substantial favourable/adverse effects (SFE/SFA) that share risks between companies and customers. These remain unchanged since PR09.

In our final methodology statement, we noted that risk should only be fully transferred to customers when companies are unable to influence the impact on their business. When a company is able materially influence the probability or magnitude of impacts, or mitigate the effect efficiently, then the risk should remain with the company, at least in part. We also noted that companies should not assume that the PR09 arrangements for logging up/down and shortfalling are retained.

In the rest of this section, we consider:

- uncertainty mechanisms for water business rates;
- other uncertainty mechanisms; and
- gain sharing mechanisms.

A7.3.1 Water business rates

In our risk and reward guidance, we stated that we would allow companies to include an uncertainty mechanism for the revaluation of business rates in 2017, although we considered that companies should retain a residual incentive to make a case for reasonable treatment in the rating review on behalf of customers.

A7.3.1.1 Our draft determinations

We summarised our approach to uncertainty mechanisms for water business rates for all companies in the relevant draft determination documents, including in section A6.3.1 of the risk and reward technical appendix to our August draft determinations.

In our draft determinations we stated that we considered that the risks associated with water business rates were likely to be material and would apply across companies. We therefore considered that a water business rates uncertainty mechanism should apply across all companies (including Southern Water and Wessex Water, which did not specifically propose a mechanism in their revised business plans following our risk and reward guidance). We considered it would be in the best interests of customers if the sharing rate was 75%:25% customer: company, apart from South West Water where we accepted its proposal for an 80%:20% sharing rate, as its customers would also benefit from South West's inclusion of an appropriate company-specific gain sharing mechanism (WaterShare).

We proposed that the uncertainty mechanism for water business rates should be a 'notified item' for PR14 and, as such, could qualify for an interim determination of K (IDoK), which allows price controls to be adjusted between periodic reviews. The formal interim determination mechanism is set out in each company's licence. It can only be triggered by relevant items, the value of which, in aggregate, must exceed 10% of an appointee's turnover[4].

A7.3.1.2 Issues raised by representations

Thames Water was the only company to raise concerns about the water business rates mechanism. The company considered that the threshold for an IDoK meant that a notified item for water business rates was unlikely to be triggered. It proposed that we should consider a lower, bespoke threshold for water business rates rather use the standard IDoK threshold.

The Consumer Council for Water (CCWater) questioned whether we were too generous to companies in our approach to water business rates. It suggested that increases in water business rates should be offset by changes in the Retail Prices Index (RPI) that go beyond HM Treasury assumptions used by Ofwat in its price setting and so an uncertainty mechanism was not required.

A7.3.1.3 Our final determinations

Table A7.2 summarises the sharing rates adopted in our final determination on the uncertainty mechanism for water business rates. All companies have been allowed a sharing rate of 75%:25%, except for South West Water and Sembcorp Bournemouth Water, which both have a sharing rate of 80%:20%.

[4] Thames has different provisions specific Thames Tideway Tunnel control.

Table A7.2 Final determination sharing rates

75:25 sharing rate		80:20 sharing rate
Anglian Water	Affinity Water	South West Water
Dŵr Cymru	Bristol Water	Sembcorp Bournemouth Water
Northumbrian Water	Dee Valley Water	
Severn Trent Water	Portsmouth Water	
Southern Water	South East Water	
Thames Water	South Staffordshire Water	
United Utilities	Sutton & East Surrey Water	
Wessex Water		
Yorkshire Water		

This represents a change since our draft determination for Sembcorp Bournemouth Water. We have increased the sharing rate for Sembcorp Bournemouth Water as they have included an appropriate gain sharing mechanism. In particular, in its representations, Sembcorp Bournemouth Water provided more detail on:

- how the gain sharing proposal works;
- the role of the customer forum; and
- that it will not involve pain sharing to customers.

We discuss the scheme further in section 7.3.3 below.

We have not changed our draft determination position in respect of the existing materiality threshold for water business rates set out in the company licences. We consider that companies already have a number of risk protections such as totex menu sharing, and the water business rates uncertainty mechanism is designed to provide additional protection where companies face material cost risks beyond their control. We do not consider that water business rate costs should be subject to a different materiality threshold than other costs included in an IDoK.

We have not changed our draft determination approach to allow an uncertainty mechanism for wholesale water service business rates. We do not consider that it would be reasonable to assume cost outperformance related to RPI would be sufficient to offset this risk. We note that short term inflation expectations have fallen rather than increased since our risk and reward guidance (see section 7.4.1.3 below and Annex 1: Updated evidence on the WACC for PR14: a report prepared for

Ofwat). Protection was provided for this risk because of its materiality, controllability and variation across companies when compared to other risks

We provide a full specification of the water business rates uncertainty mechanism in the final determination letters to companies.

A7.3.2 Other uncertainty mechanisms

A7.3.2.1 Our draft determinations

We summarised the approach to other uncertainty mechanisms for the draft determinations in the relevant draft determination documents, and provided an overview in section A6.3.2 of the risk and reward technical appendix to our August draft determinations.

Following our risk and reward guidance, companies withdrew a number of the additional uncertainty mechanisms that they proposed in their December business plans. However, some companies continued to propose mechanisms (beyond those provided for in their licences) in their revised business plans to cover a variety of potential risks. Given the other protections available and consistent with the risk and reward guidance, our draft determinations set out our view that additional uncertainty mechanisms were only appropriate if they satisfied the following criteria.

- The company has limited or no control over the cost risk, and where possible, has taken appropriate steps to mitigate the risk.
- The company requires specific protection from the risk.
- The risk that the mechanism is proposed to cover is material.
- Such an approach would be consistent with protecting the interests of customers.

On this basis, our draft determinations only included one proposed additional uncertainty mechanism which was for the TTT Control. This allows for the relevant PR14 price control potentially to be re-opened, or adjusted in the next price review (PR19), in the event of certain changes in scope to be passed between Thames Water and the infrastructure provider (IP) carrying out the TTT project.

We intervened in nine companies' plans at draft determinations to remove their proposed uncertainty mechanisms, applying the assessment framework summarised above.

A7.3.2.2 Issues raised by representations

Four companies responded to our draft proposals for other uncertainty mechanisms and these representations are summarised in table A7.3 below along with representations from the Anglian Water's CCG, Environment Agency, Natural England and CCWater.

Table A7.3 Representations on other uncertainty mechanisms

Company	Name of uncertainty mechanism	Draft determination intervention	Company representations
Thames Water	TTT Control package	Part allowed	Thames Water proposed a broad uncertainty mechanism in relation to its activities on the Thames Tideway Tunnel.
Bristol Water	Introduction of competition	Removed	Bristol Water considered that an uncertainty mechanism was required, unless the non-household price control is switched to a two-year basis, as it considers that the risks are likely to be material.
Sutton & East Surrey Water	Water Framework Directive	Removed	Sutton & East Surrey Water requested a true-up mechanism to allow the cost of any material project from the Water Framework Directive to be taken into account at the next review so that it is fully protected from the cost of any new material requirement. To facilitate this, the company proposed that the cost of any such new project should be agreed with the Environment Agency and Ofwat before commencement.

Company	Name of uncertainty mechanism	Draft determination intervention	Company representations
Southern Water	Wastewater business rates	Not applicable - new proposal post draft determination	Southern Water proposed a new mechanism for wastewater business rates as it considers that the risks associated with rates variations in wastewater are similar to water where a mechanism has been allowed.
Environment Agency	New statutory requirements	Not applicable – new request post draft determination	The Environment Agency considers that company mechanisms for managing change should be robust enough to manage present and future statutory obligations and asked Ofwat to respond positively to companies' proposals in this area.
Anglian Water's CCG	National Environment Programme	We rejected Anglian Water's proposed logging up mechanism for National Environment Programme requirements	The Anglian Customer Engagement Forum (Anglian Water's CCG) considered a logging up mechanism for the National Environment Programme should be retained to avoid an impact on compliance with the Water Framework Directive and reduce the chance that companies would seek an IDoK, which would lead to greater uncertainty for customers.
Anglian Water's CCG	Household growth	We rejected Anglian Water's proposed logging up mechanism for household growth in the wholesale water and wastewater controls.	Anglian Water's CCG requested a logging up mechanism for household growth to prevent water or wastewater infrastructure becoming a 'brake on growth'.

Company	Name of uncertainty mechanism	Draft determination intervention	Company representations
Natural England	New statutory requirements	Not applicable	Natural England requested a mechanism for managing change to avoid companies prioritising the delivery of particular environmental outcomes over others.
CCWater	Household growth	We rejected Anglian Water's proposed logging up mechanism for household growth in the wholesale water and wastewater controls.	CCWater requested a mechanism to deal with household growth as it could be a significant driver of costs.

A7.3.2.3 Our final determinations

We have not allowed for any other sector-wide uncertainty mechanisms.

Third party representations have raised concerns about the delivery of new statutory requirements. While we have not allowed an uncertainty mechanism for new statutory requirements this does not affect the company's responsibility to meet all statutory obligations. The final determination provides funding for the company for the 2015-20 period, and it is the company's responsibility to manage any uncertainty. We note that there are a range of existing mechanisms available to companies to manage uncertainty, including:

- totex sharing menu;
- IDoK's substantial favourable effects; and
- substantial adverse effects clauses in condition B of the licence.

We consider that the third party representations have not provided sufficient evidence why customers should bear the full risk of future cost variances when companies:

- are able to exercise control over the delivery costs of additional schemes; and

- should be incentivised to deliver these schemes in a cost efficient manner by sharing this risk with customers through the totex menus.

We note that menu cost sharing means that risks around cost variances are shared with customers following our next price review at the end of the 2015-20 control period.

At the draft determination we included an uncertainty mechanism for reallocation of scope between the Infrastructure Provider and Thames Water. This mechanism would allow the timetable for the overall Thames Tideway Tunnel (TTT) programme to be kept on track in delay scenarios in a manner that is cost neutral to customers. Thames Water accepted this mechanism, which allows costs to be included in an interim determination, or to be logged up at the next price review, and we have retained the mechanism for the final determination.

In recognition of the uncertainties associated with the TTT project, we applied a £20.5 million uplift to our cost assessment to allow for a central view of cost and introduced an uncertainty mechanism to compensate the company for certain, narrowly defined and high impact, low probability events that are beyond the company's control and which cause the current procurement process for an Infrastructure Provider to be unsuccessful. As such we have not accepted the broad uncertainty mechanism proposed by Thames Water. The uncertainty mechanism will allow Thames Water to include items that meet the notified item criteria to be considered in an interim determination or to be logged up (on an NPV neutral basis) at the next price review subject to a 75:25 (customer:Thames) cost sharing rate. This mechanism provides Thames Water with a strong incentive to manage costs efficiently. In specifying the criteria for this notified item, we have applied the criteria for assessing uncertainty mechanisms – that is, that the risks identified are specific, are outside Thames Water's control, material and in customers' interests. The company-specific appendix for Thames Water sets out further detail, including the assessment of the notified item against these tests.

No other company-specific uncertainty mechanisms have been included in our final determinations. We do not consider that any of the company representations have provided sufficient evidence to justify why additional uncertainty mechanisms meet our criteria, in particular that an individual company requires specific protection for the identified risks or that the proposed mechanism protects the interests of customers. Table A7.4 summarises our assessment of each of these uncertainty mechanisms against our criteria. The rationale for these decisions is set out in the company-specific appendices.

Table A7.4 Assessment summary of company-specific uncertainty mechanisms

Company	Uncertainty mechanism	Company control over risk	Company-specific protection required	Materiality	Customer interests
Bristol Water	Introduction of competition	×	×	×	×
Sutton & East Surrey Water	Water Framework Directive	×	×	×	×
Southern Water	Business rates for wastewater	✓	×	×	×
Thames Water	IP procurement process	✓	✓	✓	✓

A7.3.3 Gain sharing mechanisms

A7.3.3.1 Our draft determinations

We summarised the approach to gain sharing mechanisms for our draft determinations in the relevant draft determination documents, including in section A6.3.3 of the risk and reward technical appendix to our August draft determinations.

Six companies proposed gain sharing mechanisms as part of their revised business plans. We accepted South West Water's 'Water Share' gain share mechanism as part of its draft determination. We intervened to remove the proposed gain share mechanisms in Sembcorp Bournemouth Water's and South East Water's revised business plans, as we did not consider that these proposals allocated risks appropriately and so were not in customers' interests.

We did not intervene in relation to the other gain sharing mechanisms proposed. However, we raised concerns about the potential impact on incentives to seek efficiency gains in the 2015-20 period, which could be detrimental to customers in the longer term. We also asked companies to consider the interaction with other regulatory incentive mechanisms we were proposing ourselves, such as:

- the WRFIM;
- menu regulation; and
- incentives to improve performance within the period.

A7.3.3.2 Issues raised by representations

Table A7.5 below summarises company representations on our draft determinations and in particular reflects their consideration of the interaction of the gain share mechanism with other regulatory mechanisms.

Table A7.5 Representations on gain share mechanisms

Company	Gain sharing mechanism proposed by company in revised business plan	Draft determination intervention	Company representations
South West Water	WaterShare, independently monitored performance tracking and financial gains compared to business plan typically shared 50:50 with customers.	None	None
Bristol Water	Share gains from outperformance above real RoRE of 11% 50:50 with customers.	None	Bristol Water revised the proposed mechanism to exclude totex outperformance. An 'adjusted RoRE' threshold of 9% is proposed, still with a 50% sharing rate.
Portsmouth Water	Share gains from outperformance above 6% return on RCV 50:50 with customers.	None	Portsmouth Water removed this proposed mechanism as it would largely duplicate cost sharing through the totex menus.

Company	Gain sharing mechanism proposed by company in revised business plan	Draft determination intervention	Company representations
Sembcorp Bournemouth Water	Gain and pain sharing mechanism with details to be decided in period.	Removed	Sembcorp Bournemouth Water submitted a revised version of its proposed mechanism containing greater detail than the original revised business plan submission. Its revised proposal in its representation is similar to South West Water's 'WaterShare' scheme with an anticipated sharing rate of 50% and will only have the potential for gain sharing with customers.
Sutton & East Surrey Water	Dividends over 10% shared 50/50 with customers.	None	Sutton & East Surrey Water does not consider that there is any overlap between its proposed gain sharing mechanism and other regulatory tools introduced for PR14 (eg, totex menus and WRIFM) so retained its revised business plan proposal.
South East Water	Pain/gain sharing mechanism to share interest cost variances on new bond issuance.	Removed	None

A7.3.3.3 Our final determinations

Table A7.6 summarises our final decisions given the representations on gain sharing mechanisms discussed above.

Table A7.6 Our assessment of gain share mechanisms

Company	Latest company gain share mechanism proposals	Decision
South West Water	'WaterShare' scheme.	Accept scheme - no change to draft determination position.
Bristol Water	Share gains from outperformance above 'totex adjusted RoRE' of 9%, 50:50 with customers.	No intervention - while the company has responded to our concerns at draft determination about the potential overlap with totex menus by creating a totex adjusted RoRE measure, it is not clear that commitment to RoRE based sharing of out-performance is in the long term interest of customers given the potential to impact on company incentives to deliver outperformance in a control period. However, as noted in our draft determination, as this proposal does not form part of our final determination and does not expose customers to the risk of higher bills, we do not propose to intervene.
Portsmouth Water	Gain share scheme withdrawn.	We have accepted Portsmouth Water's removal of the scheme as it would largely duplicate cost sharing through the totex menu.
Sembcorp Bournemouth Water	Gain sharing mechanism which is anticipated to share 50% of outperformance against business plan across a range of financial measures.	We have accepted the revised scheme but note that Sembcorp Bournemouth Water should agree an implementation plan with its CCG. The scheme has the potential to share outperformance with customers across a range of measures during 2015-20 subject to agreement with its CCG which will be provided with financial and operational reporting on an annual basis. We have adopted 80:20 sharing rates for water business rates in line with South West Water.

Company	Latest company gain share mechanism proposals	Decision
Sutton & East Surrey Water	Gain share of 50:50 for dividends in excess of 10%.	No intervention - while the company has responded to our concerns at draft determination about the potential overlap with other regulatory mechanisms, it is not clear that commitment to dividend based sharing of outperformance is in the long term interest of customers given the potential to impact on company incentives to deliver outperformance in a control period and to distort dividend payment decisions. However, as noted in our draft determination, as this proposal does not form part of our final determination and does not expose customers to the risk of higher bills, we do not propose to intervene.

Our final determinations therefore allow for two comprehensive gain sharing mechanisms:

- South West Water – 'WaterShare'; and
- Sembcorp Bournemouth Water – gain share scheme.

Two further formal gain sharing schemes, based on total company performance, have not been removed as there is insufficient evidence to suggest that they are contrary to customers' interests:

- Bristol Water: sharing of 'totex adjusted RoRE' in excess of 9%; and
- Sutton & East Surrey Water: sharing of dividends in excess of 10%.

A7.4. Returns

In our risk and reward guidance, we set out our expectation of an appropriate industry cost of capital. We stated that the appropriate wholesale cost of capital should be 3.70% (real vanilla) and that retail net margins should be 1% for households (and non-households without choice in Wales) and 2.5% for non-households with choice in England and Wales. In our guidance, we stated that at an industry level these returns amounted to a cost of capital at an appointee level of around 3.85%.

Pre-qualified companies that accepted our risk and reward guidance were able to become enhanced and benefit from a fast tracked approval process. Both South West Water and Affinity Water pre-qualified and accepted our risk and reward guidance and so became enhanced companies.

In the revised business plans of the non-enhanced companies:

- all water and sewerage companies (WaSCs) accepted the guidance on the cost of capital and retail margins[5];
- all WoCs, except Dee Valley Water, accepted the guidance on retail margins; and
- all non-enhanced WoCs asked for a company-specific uplift on the cost of capital for the wholesale water control.

In the rest of this section, we consider:

- the industry cost of capital; and
- company proposals for a company-specific uplift to the WACC; and
- retail margins.

[5] Thames Water noted that its acceptance of risk and reward guidance was in the round of its business plan, including expected outperformance for our risk-based review (RBR) wholesale cost thresholds.

A7.4.1 Industry cost of capital

A7.4.1.1 Our draft determinations

One of the benefits from being an enhanced company is protection under the do no harm rule. This means that both South West Water and Affinity Water are protected against any subsequent reductions in the WACC (although they would benefit from any subsequent increases). This benefit from enhancement provides an incentive for companies to submit challenging business plans that deliver in customers' interests, in both the current and future control periods.

Non enhanced companies (including the early draft determination companies Northumbrian Water and Dŵr Cymru) are not covered by the do no harm rule and so are subject to any downward revisions in the WACC.

We considered allowed returns for the draft determinations in the relevant draft determination documents and provided an overview in section A6.4 and annex 1 of the risk and reward technical appendix to our August draft determinations.

In our draft determinations, we estimated that the reduction in the WACC from companies' December business plans, consistent with our risk and reward guidance, provided customer benefits in excess of £2 billion over the period 2015-20.

Our August draft determinations set out our view on market developments and regulatory decisions since our risk and reward guidance, which was published in January 2014. In particular, we noted that, since we published our risk and reward guidance:

- market evidence on the cost of debt suggested that the cost of capital had fallen; and
- two regulatory determinations had been published on the cost of equity that also suggested a decrease in the cost of equity.

We stated that, for the final determinations, we would consider whether there were changes in capital markets or regulatory determinations which would impact on our estimate of the cost of capital. We did not propose to amend the methodology we used in the risk and reward guidance to calculate the allowed return.

A7.4.1.2 Issues raised by representations

CCWater stated that the appointee WACC should be reduced, based on a study it commissioned from Economic Consulting Associates (ECA) which concluded that a reasonable range for the WACC was between 3.0% and 3.75% with a point estimate of 3.5% rather than the average of around 3.85% applied in our draft determinations.

Eight companies commented on our proposed inclusion of the latest market evidence in setting the allowed cost of capital in our final determinations. All eight companies expressed concern about the potential implications of such a reduction for their financeability with six providing evidence against a reduction in the WACC.

None of the CCGs explicitly commented on whether the cost of capital should change.

Table A7.7 Company representations on the cost of capital

Company	Comment
ANH, NES, SVT, TMS, WSH, WSX, UU, SEW	A reduction in the WACC would strain financeability and could require an adjustment to PAYG ratios.
ANH, NES, TMS, WSH, UU	Ofwat should take a long term perspective and not place weight on short term movements in markets.
ANH, NES	Interest rates are still expected to rise over the 2015-20 period as signalled by the Bank of England and market expectations and this has not changed since January 2014.
TMS	The uplift applied to obtain forward rates of the cost of new debt is too low.
ANH, SVT, NES	Changes to the estimate and methodology on the WACC would lead to higher regulatory risk.
TMS	The total market return and risk-free rate assumptions are based on a low-growth environment – growth is expected to return to normal and therefore higher expected returns can be expected.
SVT, WSH (and TMS on RPI)	Falls in the corporate bond index have been offset by falls in current and forecast RPI, leaving the real cost of debt unchanged.

Company	Comment
TMS, SVT, CC Water	The asset beta of 0.3 is too low, and lower than the recent Competition Commission estimate for Northern Ireland Electricity (NIE). CC Water suggested beta is too high.
TMS, NES	Companies propose a number of changes to the calculation of the retail margin adjustment to the appointee WACC.

Key:

ANH = Anglian Water; WSH = Dŵr Cymru; NES = Northumbrian Water; SVT = Severn Trent Water; SEW = South East Water; TMS = Thames Water; UU = United Utilities; WSX = Wessex Water.

Note:

WoCs other than South East Water did not comment on the potential reduction in the cost of capital, although all WoCs apart from Affinity Water asked for a company-specific uplift.

A7.4.1.3 Our final determinations

We have considered whether the wholesale cost of capital of 3.70% should change based on the latest market evidence and taking into account representations on our draft determinations. We commissioned PwC to review company representations and consider up to date market information to advise Ofwat on whether the wholesale cost of capital has changed since January 2014. PwC's report is included in annex 1.

Table A7.8 sets out our response to the points raised in representations.

Table A7.8 Our response to representations on the cost of capital

Issue	Response
Impact on financeability	We have considered the impact of the WACC reduction as part of our assessment of financeability.
Short term versus long term rates	Our assessment takes account of the mix of embedded and new debt and both of those are based on the cost of long term corporate debt.
Interest rate expectations	The cost of capital calculations already take into account an average increase in interest rates of 0.6% during the 2015-20 period. There is not sufficient evidence for us to change this assumption (see below).

Issue	Response
Regulatory risk	We are not changing the methodology for the calculation of the WACC. The change to the estimate of the WACC is based on market movements and has been well signalled and is, to some extent, expected by investors and rating agencies.
Total market return	There is some academic and regulatory evidence that the total market (required) return has fallen (see below).
Inflation	While implied RPI inflation rates have fallen, they are still consistent with a long term RPI assumption of 2.8%. Short term RPI forecasts are around or above this level (see below).
Corporate bonds	PwC's review of the movement in long-term corporate bonds suggests a substantial decrease since January 2014.
Asset beta	The average of the recent daily and monthly beta estimates continues to be around 0.3 and this is consistent with the analysis undertaken by the Competition Commission (see below).
Retail margin deduction	We provide an updated retail margin deduction calculation taking account of company representations and information on industry revenue requirements and RCVs taken from company FDs.

The following sections set out the evidence on changes in key components of the derivation of the wholesale cost of capital:

(i) cost of equity; and
(ii) cost of debt.

We also discuss inflation and the retail margin allowance.

Cost of equity

The key components of the cost of equity are the total market returns and equity beta.

Total market returns (TMR)

We used a TMR figure of 6.75% in our risk and reward guidance. This was at the top end of the proposed 6.25% to 6.75% range and was based upon a review of historical and forward-looking evidence.

- **Market/academic evidence update:** both long-term historical measures of equity returns and forward looking approaches, such as dividend growth models, have not changed significantly since the January risk and reward guidance. As PwC discuss, there has been recently published survey evidence on Equity Market Risk Premium from Fernandez et.al (2014), which indicates a slight fall in practitioners' views of the EMRP between 2013 and 2014, from an average of 5.5% to 5.1% for the UK.

- **Regulatory decisions on TMR:** there have been some developments regarding TMR both before and after the publication of the risk and reward guidance. The Competition Commission maintained their TMR range of between 5.0% to 6.5% between NIE's draft and final determination, but moved from the middle to the top of their range (6.5%). Ofgem, following a consultation on TMR, revised down their estimate of the cost of equity from 6.3% to 6.0% for ED1 draft determinations – holding beta constant, a TMR of 6.5% could be inferred. The ED1 final determinations maintained a 6.0% cost of equity.

Overall we have decided not to change the 6.75% assumption for the TMR. We do however recognise that this remains at the upper end of any estimate based on the recent regulatory precedents.

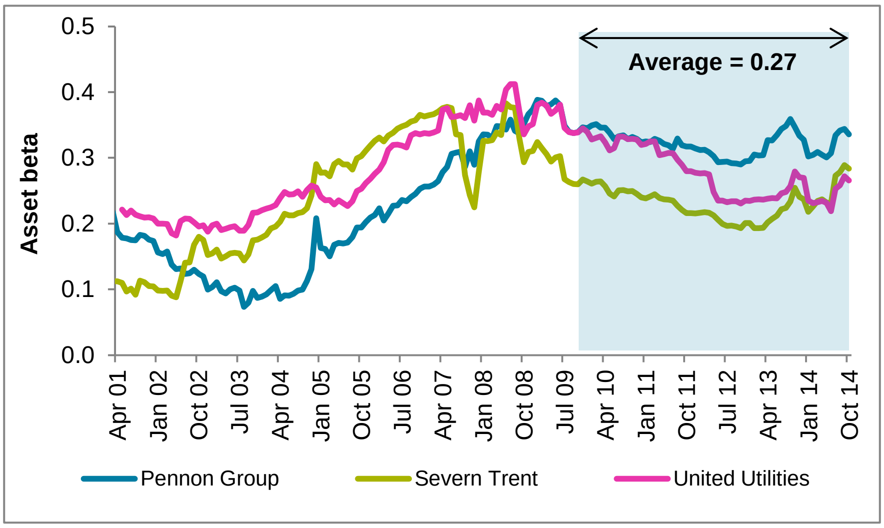
Estimate of asset beta

In the January risk and reward guidance we used an asset beta estimate for the appointed business, of 0.3, based on other regulatory determinations and market evidence for the three listed WaSCs: Pennon (South West is part of Pennon Group, which also includes Viridor, a waste management business), Severn Trent Water and United Utilities.

- **Updated empirical beta evidence:** monthly beta estimates still suggest an asset beta of 0.3 or lower is appropriate. Although daily beta estimates have recently risen above 0.3, these estimates have peaked in recent months (and changes since January could be influenced by the PR14 regulatory process). We therefore place greater weight on the daily betas for Severn Trent Water and United Utilities over the 2009 to 2013 period which have tracked 0.30

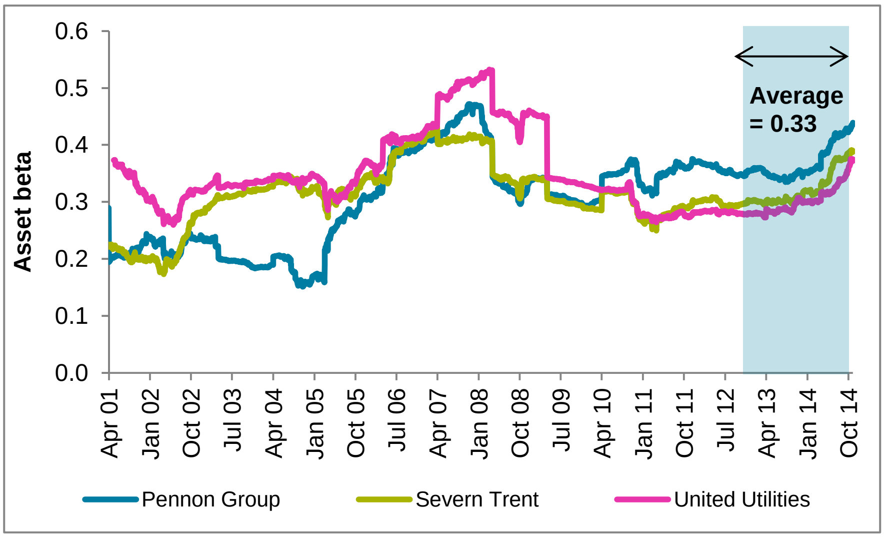
closely. Updated beta estimates range from 0.27 (based on monthly data over five years) and 0.33 (based on daily estimates over two years).

Figure A7.2 Average monthly estimate of beta over five years



Source: PwC analysis of Datastream, Capital IQ.

Figure A7.3 Average daily estimate of beta over two years



Source: PwC analysis of Datastream, Capital IQ.

The Competition Commission in the Bristol Water reference in 2010 selected an asset beta range for the water sector of 0.21 to 0.31 assuming a zero debt beta. In the more recent final determination for NIE the Competition Commission's empirical estimates for the beta for Pennon, Severn Trent Water and United Utilities ranged from 0.25 to 0.30 using 2-year daily regressions. This range represented a reduction from their draft NIE determinations where their 2-year daily estimates ranged from 0.27 to 0.33.

Overall, we consider that there is insufficient evidence to change the asset beta estimate from 0.3.

Cost of debt

There are two elements of the cost of debt: embedded and new debt. In our risk and reward guidance, we set the cost of debt based on 75% embedded and 25% new debt. First we consider inflation assumptions which can affect both the cost of embedded and new debt before considering the cost of embedded debt and the cost of new debt in turn.

Inflation

The assumed level of inflation is used to convert nominal debt yields into real debt yields. Therefore, changes to the inflation assumption have a direct impact on the real cost of debt. Our risk and reward guidance assumed RPI inflation of 2.8%. This was a long-term RPI figure consistent with long-term financing. The RPI assumption was not matched to specific projections for RPI over the 2015-20 period, and was lower than market-implied inflation expectations at the time.

The long-run historical average implied inflation from 10-year government bonds is 2.8% (2000 to September 2014). Current evidence is more mixed. RPI in Q2 2014 was 2.5%, however short-term consensus forecasts and the Office for Budget Responsibility (OBR) suggest that RPI could be higher than 2.8%. From 2015 onwards estimates from these sources are consistently over 3.0%. For example OBR forecasts average 3.7% over 2015-18, although this is unchanged since December 2013.

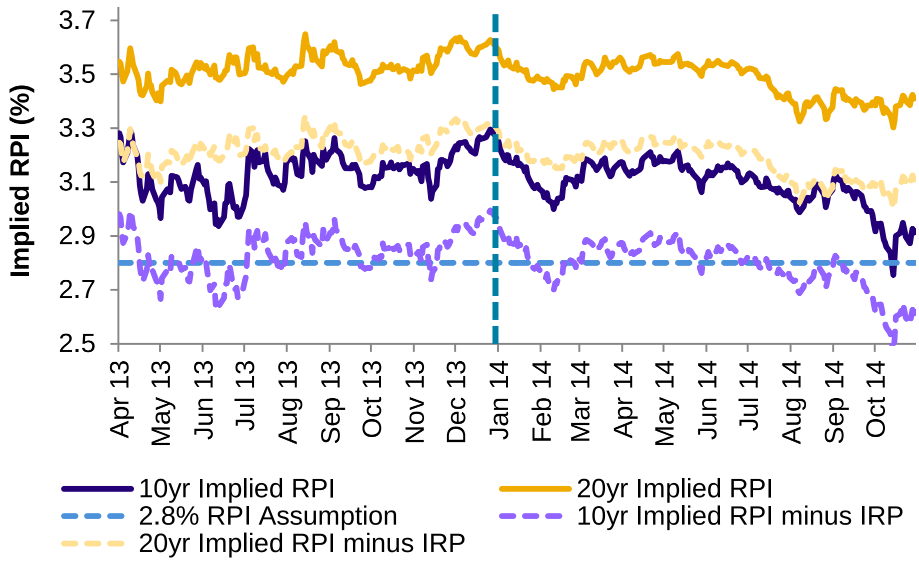
Long-term expectations of future RPI inflation can be inferred from the difference in yields between nominal and index-linked government bonds. Currently the implied RPI inflation from 10 year gilts is 2.9% (see figure A7.4); subtracting an inflation risk premium of 0.3%[6] this implies RPI of 2.6%. Implied RPI inflation from 20 year gilts is currently 3.4%, which translates into 3.1% long-term inflation after subtracting an

[6] The difference in yields between nominal and real gilts captures both expected inflation as well as the inflation risk investors bear by not having their cash flows linked to RPI. The average premium on 10 year gilts between 1997 and 2007, as calculated by the Bank of England, was 0.3%. Bank of England, Quarterly Bulletin, 2012 Q3, Volume 52, no. 3.

inflation risk premium. Implied inflation figures have been relatively stable at these levels since January 2014, with a dip very recently.

Based on the above we consider that there is insufficient evidence to change the RPI inflation assumption of 2.8%.

Figure A7.4 Implied inflation from gilt yields



Source: PwC analysis of Bank of England data.

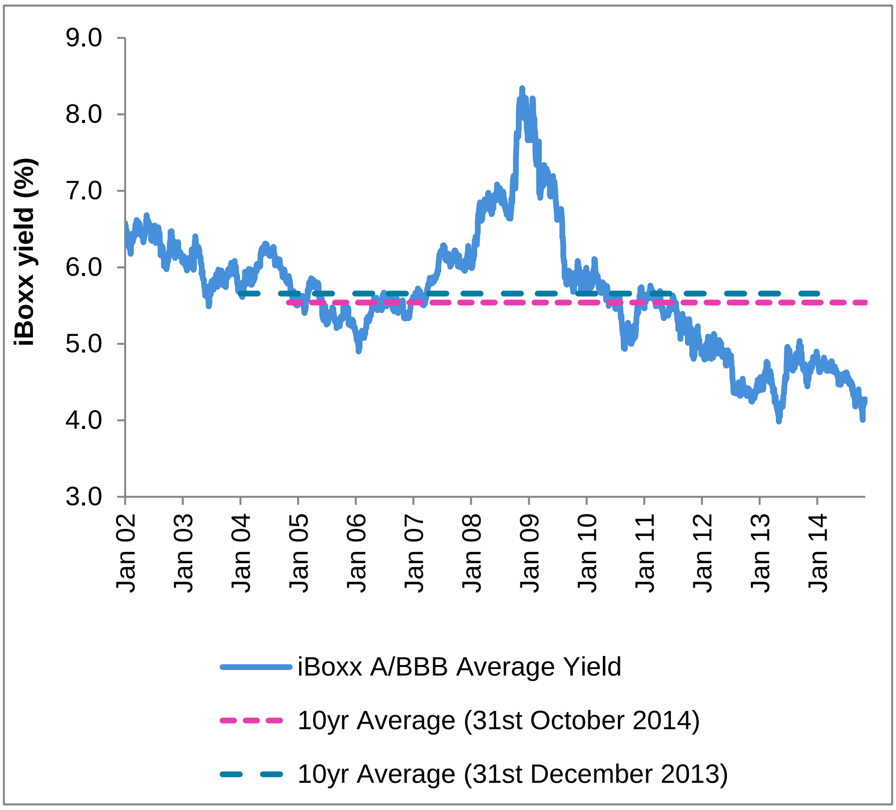
Cost of embedded debt

In January 2014, we calculated the upper end of the embedded cost of debt using the 10-year average of the real A and BBB rated iBoxx corporate bond yields (2.8%). Real yields at issue on water company bonds produced the lower end of the embedded cost of debt range (an average of 2.2%). We determined the point estimate of 2.65% by taking 15 basis points outperformance[7] from the upper end of the range (based on the real A and BBB benchmark).

- **iBoxx corporate bond evidence:** the ten-year average of the A and BBB iBoxx indices is 5.54%, or 2.7% in real terms. Consequently, there has been a small change of 12 basis points since the January risk and reward guidance , as shown in figure A7.5.

[7] This is calculated by comparing the yield at issue for water company bond issues compared to the average of the iBoxx A and BBB index at the time.

Figure A7.5 Ten-year average of corporate bonds rated A and BBB (iBoxx)



Source: PwC analysis of Datastream.

- **Water company bond evidence since January 2014:** the stock of water company embedded debt has only marginally changed January. This was due to the addition of Thames Water's 2025 bond issued in June 2014 - which had a fixed nominal coupon of 4.0%. However, as the bond has a call option, it is not directly comparable to the rest of the bond sample.

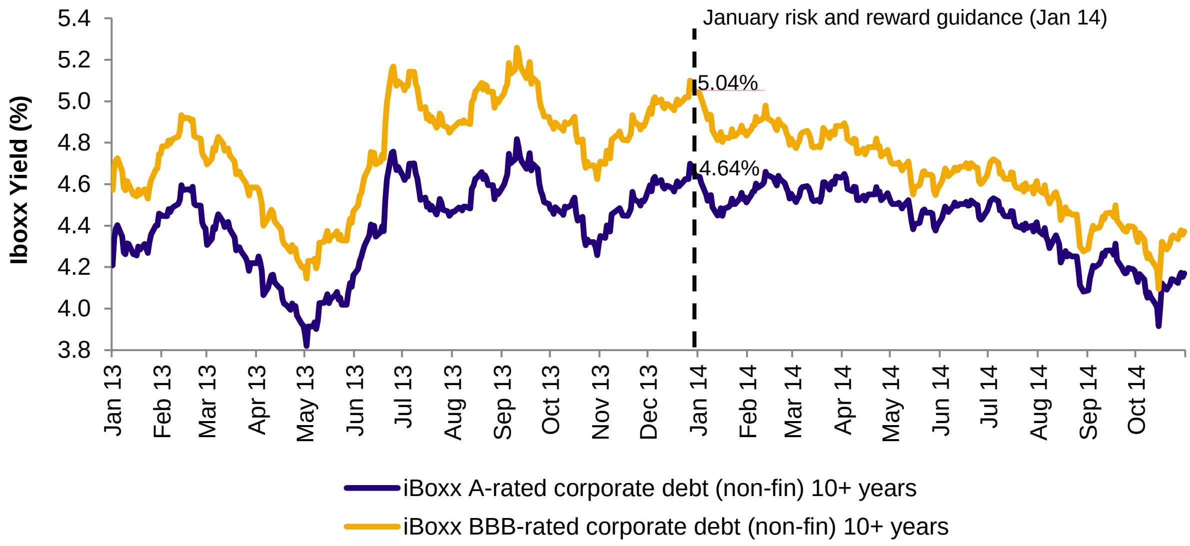
Overall, while there has been a small change in long term rates we have decided not to change our embedded debt assumption of 2.65% for the final determinations (excluding issuance costs).

Cost of new debt

In January 2014 we set the cost of new debt estimate based on the market information available at the time. On 31 December 2013 nominal yields on A and BBB rated benchmark corporate debt indices were 4.6% and 5.0% respectively. Applying an inflation assumption of 2.8%, we calculated a range for the real cost of new debt of 1.8% to 2.2%, and used a mid-point of 2.0%.

As shown in figure A7.6, since the publication of the risk and reward guidance in January 2014, iBoxx corporate bond yields have fallen from 4.64% and 5.04% to 4.17% and 4.37% (for A and BBB rates respectively). This is a 67 basis point reduction in BBB rated yields and a 47 basis point reduction in A rated yields.

Figure A7.6 iBoxx corporate bonds yields



Source: PwC analysis of Datastream.

Because of the estimation uncertainties, we assess equity returns, betas and inflation using data over a longer-term period. However, debt capital markets data provides a more direct evidence of the new debt financing costs companies are likely to face in AMP6. For this reason our methodology more closely tracks movements in debt capital markets.

We consider this downward movement in corporate bond yields represents a significant shift in capital markets.

In the risk and reward guidance we applied a 60 basis point forward looking uplift to current market rates. While interest rate expectations have fallen since January 2014[8] we do not consider that there is sufficient evidence to change the 60 basis point uplift. Applying this to current real market yields of 1.35% to 1.55%, gives a range of 1.95% to 2.15%. Deducting 15 basis points from the upper end of range to reflect a degree of outperformance, consistent with our risk and reward guidance, gives a point estimate of 2.0%.

[8] See Bank of England inflation report.

Overall we consider that there is compelling evidence that the cost of new debt should be reduced from 2.65% to 2.0% (excluding issuance costs).

Retail margin adjustment

In the January risk and reward guidance we used a 15 basis point retail margin adjustment to convert from an appointee to wholesale cost of capital.

- **Post-tax retail margin:** a number of companies in their representations stated that the retail margin of 1.0% was a pre-tax figure, so the WACC equivalent needs to be expressed post-tax. We accept that this change would better align the retail adjustment and WACC. We have used the average effective tax rate for water companies over the 2015-20 period to make this deduction.

- **RCV and revenue requirement:** these parameters have been updated using information from final determinations.

Table A7.9 Retail margin adjustment

Component		Point estimate	Comment
Retail net margin (after tax)	A	0.90%	1% margin net of 10% effective tax rate (average effective 2015-20 tax rate for all companies).
Revenue requirement (2015-20) (£m) - Average	B	£10,812	Updated for final determinations.
RCV (2015-20) (£m) – Average	C	£63,072	Updated for final determinations.
Retail return (£m)	D = A*B	£97	
Return on replaced retail assets not added to RCV (£m)	E	£7	Assumes that new retail assets replace depreciated assets, with no retail assets in wholesale RCV by 2020.

Component		Point estimate	Comment
Retail return deduction from appointee return (£m)	F= D-E	£90	
Retail return deduction as % of Wholesale RCV	**G = F/C**	**0.14%**	

Overall change in the cost of capital

Overall, based on the reduction in the cost of new debt and the adjustment to the retail margin deduction, we consider that the estimated appointee WACC should be reduced to 3.74%, and the allowed wholesale WACC to 3.6%.This will affect all companies apart from Affinity Water and South West Water, which as enhanced companies are protected from reductions in the WACC consistent with our ‘do no harm’ principle for enhanced companies.

Table A7.10 Comparison of components of the cost of capital between risk and reward guidance (January 2014) and final determination

WACC components	Risk and reward guidance	Final determinations
Gearing	62.5%	62.5%
Total Market Returns	6.75%	6.75%
Equity Risk Premium	5.50%	5.50%
Risk-free Rate	1.25%	1.25%
Asset Beta	0.30	0.30
Equity Beta	0.80	0.80
Cost of equity (post-tax)	5.65%	5.65%
Cost of New Debt	2.65%	**2.00%**

WACC components	Risk and reward guidance	Final determinations
Cost of Embedded Debt	2.65%	2.65%
Embedded debt ratio	75:25	75:25
Allowance for debt fees	0.10%	0.10%
Overall cost of debt	2.75%	**2.59%**
Appointee WACC (vanilla)	3.85%	**3.74%**
Retail margin	0.15%	**0.14%**
Wholesale WACC (vanilla)	3.7%	**3.6%**

Note:

Enhanced companies, South West and Affinity received a wholesale allowed return of 3.70%, consistent with the 'do no harm' rule.

A7.4.2 Company-specific uplift

In our methodology statement we set the expectation that there would be a single industry cost of capital based on single notional capital structure.

We set out our proposed approach to providing a company-specific uplift in the risk and reward guidance:

> **"…to justify a company-specific uplift in the WACC, companies will need to demonstrate both that they face a higher cost to raising finance and that there is an offsetting benefit to customers."**

With regard to a company-specific uplift, as an enhanced company Affinity Water accepted the single notional cost of capital, although reserving its position for future price review periods.

In May 2014, we published an information notice (IN 14/10) which provided additional guidance for companies wishing to submit proposals on a company-specific uplift to the cost of capital, as part of their revised business plan submissions in June.

A7.4.2.1 Our draft determinations

We considered the issue of a company-specific uplift to the WACC in our August draft determinations as all WoCs apart from Affinity Water submitted revised business plans in June. In section A6.4 of the risk and reward technical appendix to our August draft determinations, we set out our consideration of companies' revised business plan proposals for a company-specific uplift.

The key conclusions of our draft determinations were as follows.

- There was insufficient evidence that South East Water and Affinity Water, as larger WoCs, face higher financing costs in terms of debt or equity compared with the WaSCs. We therefore considered that the industry wholesale WACC should apply to South East Water without an uplift. (Affinity Water did not request an uplift in its risk and reward submission after pre-qualifying as an enhanced company.)

- While the six smaller WoCs (Bristol Water, Dee Valley Water, Portsmouth Water, Sembcorp Bournemouth Water, Sutton & East Surrey Water, and South Staffordshire Water) did not face higher equity costs, they did face higher debt costs equivalent to 15 basis points on the WACC.

- We considered that there was sufficient evidence that two of these smaller WoCs, Portsmouth Water and Sembcorp Bournemouth Water, provided benefits to customers as efficient wholesale cost comparators that more than offset their higher incremental financing costs, and so should be allowed to recover such a company-specific uplift of 15 basis points from their customers in the next price control period. We did not consider that the other four small WoCs provided benefits in excess of costs and so should not be allowed to recover their higher notional financing costs from customers.

- We did not consider that a company-specific uplift should be provided to the allowed net retail margin for Dee Valley Water's retail business, as the risks involved in providing the retail services concerned were substantially the same as other companies' retail businesses (taking into account the market for non-household customers in England is opening to competition in 2017, but the market is not opening to competition in Wales (over 50Ml a year customers are already open to competition).

A7.4.2.2 Issues raised by representations

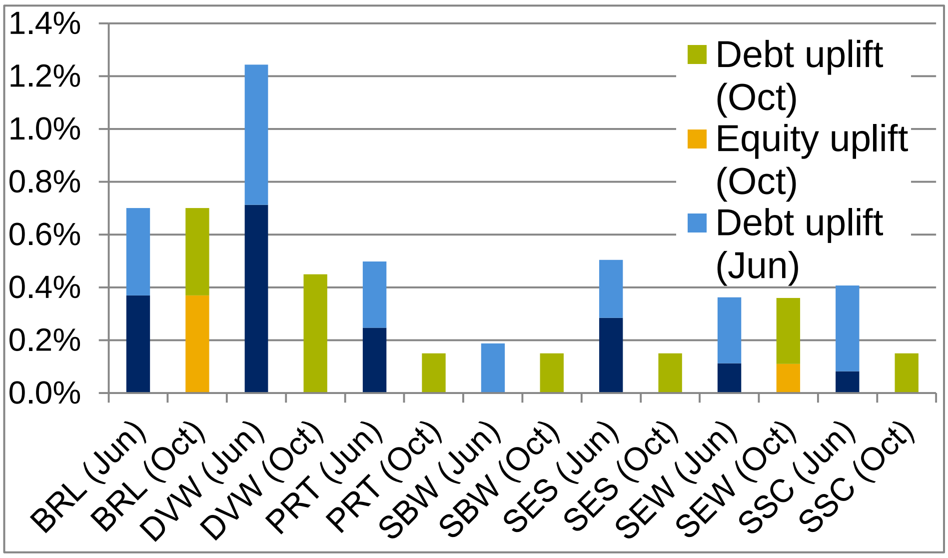
Table A7.11 summarises company representations on the company-specific uplift. CCWater supported our approach to the company-specific uplift.

Table A7.11 Summary of representations on the company specific uplift

Stakeholder	Representation
Bristol Water, Dee Valley Water, South East Water, Sutton & East Surrey Water and South Staffordshire Water	**The benefits test is not valid** as it is not consistent with Ofwat's statutory duties.
Bristol Water, Dee Valley Water and Sutton & East Surrey Water	**There should be an uplift to the cost of equity**, for example to reflect the impact of operational gearing. Dee Valley Water and Sutton & East Surrey Water did not ask for an equity uplift in their representations, although South East Water did (but did not provide further evidence to that provided in the revised business plan).
Bristol Water, Dee Valley Water and South East Water	**There should be an additional uplift to the cost of debt** to that allowed in the draft determinations (15 basis points for small WoCs, zero for South East Water).
Bristol Water, Dee Valley Water, South East Water, Sutton & East Surrey Water and South Staffordshire Water	**Proposed changes to our assessment of benefits** including: • wholesale cost modelling; • the SIM; • ODIs; and • other customer impacts.
Portsmouth Water and Sembcorp Bournemouth Water	**Provided additional evidence on customer willingness to pay for an uplift that we had requested** (both companies had received an uplift in the draft determinations).
CCWater	**Supported our approach on company specific uplift**
CCGs for Dee Valley Water and Sutton & East Surrey	**Would not object if the companies were awarded a company specific uplift**

Overall, the requested company specific uplift fell between the June and October submissions (shown in figure A7.7), with only two companies (South East Water and Bristol Water) requesting an equity uplift and three companies (South East Water, Bristol Water and Dee Valley Water) requesting a debt uplift greater than 15 basis points incremental costs identified in our draft determinations (noting that we did not consider that South East Water had incremental notional financing costs).

Figure A7.7 Requested company specific uplift (June and October)



A7.4.2.3 Our final determinations

We continue to consider that the application of the benefits test is appropriate, in that companies should only receive an uplift to the cost of capital if there are offsetting benefits to customers. We continue to consider that the application of the benefits test is an appropriate exercise of our duties under the Water Industry Act 1991. This is because we consider that all efficient companies will be financeable on a notional basis irrespective of whether the uplift is provided, and it is consistent with our statutory duties that customers should only bear the incremental financing costs of small WoCs if there are offsetting customer benefits. We do consider that there can be offsetting customer benefits – which is why we are retaining our position to provide an uplift for two WoCs.

We have considered the representations against our two tests; test one: incremental financing costs and test 2: offsetting customer benefits.

Test 1: incremental financing costs

We commissioned PwC to update its analysis on the incremental financing costs for WoCs. Our consideration of each of the representations based on PwC's advice is shown in table A7.12.

Table A7.12 Assessment of key issues raised in representations on the incremental cost of financing

Representation	Response
WOCs have higher operational gearing, for example as operating costs are high in relation to assets.	**No change.** We maintain our view that there is insufficient conceptual validity to show that WoCs face a higher cost of equity than WaSCs. This is supported by the empirical analysis of water company betas. Any residual differences can be managed through water company calibration of ODIs and totex menu choices.
WoCs have higher historic RoRE ranges than WaSCs which demonstrates their higher risks	**No change.** Under PR14 companies have new tools such as menus and totex sharing (which affect the level of risk borne by companies); and can choose PAYG and run-off rates (which affects the level of equity bearing this risk). This is reflected in the forecast RoRE range for 2015-20 where the WaSC and WoC ranges are similar.
Embedded debt costs are company specific.	**No change.** A single notional cost of debt preserves strong efficiency incentives.
WOCs issue bonds more infrequently.	**No change.** WoC debt costs take account of the different types of debt used by WoCs and costs are offset by the low cost of bank finance in the period 2015-20.
PwC had used the wrong period and wrongly included the Thames Water bond in benchmarking	**No change.** Even if the range is extended and the Thames Water bond excluded, large WoC bond costs are still within the range for WaSC bond costs.

Based on this we do not consider that our draft determination conclusions on test 1 financing costs should change, namely that:

- there is insufficient evidence that the WoCs face higher costs of equity;
- there is insufficient evidence that the larger WoCs (Affinity Water and South East Water) face higher costs of debt; and
- the smaller WoCs face a higher notional cost of debt due to the small size and difficulty accessing bond markets, which is equivalent to 25 basis points on the efficient notional cost of debt, but that this cost is only efficient if it is more than offset by customer benefits.

The overall incremental financing costs for small WoCs is equivalent to 15 basis points on the WACC. As the incremental costs of financing are based on differences to the industry WACC they do not change with the reduction in the industry WACC. PwC's advice is set out in annex 3.

Test 2: offsetting customer benefits

We continue to consider that the most important benefits of comparators are in wholesale cost modelling, as this is the most material part of the value chain (accounting for around 90% of revenues) and it is harder to draw on comparisons from other sectors to generate views on efficient costs. However, as a regulator we currently make use of comparative analysis on other areas of the value chain (retail) and for our analysis of standard outcomes across the sector. We have considered the potential benefits in these areas, however we do not consider that the importance of water company comparators is as important to safeguard customer interests. Our assessment of representations is summarised in table A7.13 and is set out in detail in annex 3.

Table A7.13 Assessment of key issues raised in representations on the benefits from a company specific uplift

Issue	Representation	Our response	Change
Historic and future rankings	The wholesale costs loss of comparator analysis is sensitive to the way the historic and forecast rankings are combined.	The draft determinations sensitivity analysis shows that the results are robust to different combinations of historic and future rankings.	We have updated the wholesale cost analysis to reflect the latest analysis and altered the way in which historic and forecast rankings are combined to reduce the sensitivity to the results.

Issue	Representation	Our response	Change
Loss of Precision	The loss of a comparator will lead to a loss of precision, as our panel data models rely heavily on cross-sectional variation.	Even if a small number of WoCs are dropped, our models continue to be fit for purpose, meaning that there is no impact on customers through setting robust efficiency challenges for providing water services.	No change to draft determinations
SIM	Some WoCs will continue to outperform WaSCs on SIM, as they did on OPA.	Delivering excellent retail service is very important to customers. There are however alternative ways to benchmark water retailers' performance – for example by looking across retailers or trusted service providers from other sectors. Nonetheless, we estimate offsetting benefits for each WoC, assuming that the SIM based approach to retail quality incentives continues.	We have quantified the impact on customers, however, these benefits do not change our assessment of which companies should be allowed an uplift.
ODIs	The loss of a comparator will impact on comparison across ODIs.	Some WoCs (most notably SBW, PRT and SES) are in the upper quartile for ODI performance and so contribute to our benchmark. However our approach to outcomes is new, companies are not required to have comparable ODIs and the future approach to ODIs is uncertain and so we have not quantified these benefits.	We have taken account of benefits in the round when deciding whether to allow an uplift.

Overall assessment

Based on the updated analysis we have identified the following benefits and costs of providing a company-specific uplift.

Table A7.14 Assessment of the net benefits

Impact (£m, 30-yr NPV)		BRL	DVW	PRT	SBW	SES	SSC
Wholesale Costs		-£19m to -£10m	-£11m to -£6m	£7m to £15m	£4m to £8m	-£7m to -£4m	-£4m to -£2m
SIM		£1m to £3m	-£2m to -£1m	-£0m to -£0m	£2m to £4m	£1m to £1m	£2m to £4m
ODIs	WQC	✗	✗	✓	✓	✓	✗
	MZC	✓	✗	✗	✓	✓	✗
	WSI	✗	✓	✓	✓	✗	✗
Comparator benefits		-£18m to -£7m	-£13m to -£7m	£7m to £15m	£6m to £12m	-£6m to -£3m	£0m to £0m
Increased financing cost		-£13m	-£2m	-£4m	-£4m	-£6m	-£9m
Net benefits		**-£29m to -£21m**	**-£16m to -£9m**	**£4m to £11m**	**£2m to £8m**	**-£12m to -£9m**	**-£9m to -£9m**

Key:

BRL = Bristol Water; DVW = Dee Valley Water; PRT = Portsmouth Water; SBW = Sembcorp Bournemouth Water; SES = Sutton & East Surrey Water; SSC = South Staffordshire Water.

Note:

WQC stands for negative water quality contacts, MZC stands for mean zonal compliance, and WSI stands for water supply interruptions.
Figures may not add due to rounding.

Based on this updated analysis, two companies: Portsmouth Water and Sembcorp Bournemouth Water provide customer benefits that exceed the incremental financing costs of a small WoC. The other four small WoCs do not provide net benefits from being a comparator. We therefore confirm our draft determination conclusion that only Portsmouth Water and Sembcorp Bournemouth Water provide benefits to customers that more than offset their higher incremental financing costs and so should be provided with an uplift to the cost of capital of 15 basis points. No other WoCs should not be allowed an uplift on their financing costs.

A7.4.3 Household and non-household retail margins

A7.4.3.1 Issues raised by representations

Household retail margins

We did not receive representations on the level of the household retail margin. The household retail margins used in the draft determinations were set out in the risk and reward guidance. Household retail margins were based on evidence from recent regulatory determinations. No evidence has been submitted that these proposed margins should change.

Non household retail margins

We did not receive representations on the level of the non-household retail margin. The non-household retail margins used in the draft determinations were set out in the risk and reward guidance. Non-household margins were based on company financial performance in benchmark competitive sectors. No evidence has been submitted that these proposed margins should change.

A7.4.3.2 Our final determinations

We therefore confirm our draft determinations that the following retail margins will apply:

- a net margin for retail services of 1%, applicable to households in England and both households and non-households (consuming below 50 Ml a year) in Wales; and
- a net margin for retail services of 2.5%, applicable to English non-households, who will face competition from 1 April 2017 and non-household customers in Wales with consumption over 50ML per year.

A7.5. Wholesale revenue forecasting incentive mechanism (WRFIM)

In our final methodology statement, we confirmed that we would use different mechanisms from the existing RCM to adjust companies' allowed revenues at PR19 to take account of differences between actual and projected revenue in the 2015-20 period.

To support this, we published a 'Consultation on the revenue forecasting incentive mechanism' in April 2014. We summarised the responses and our conclusions in annex 3 of the risk and reward technical appendix to our August draft determinations.

A7.5.1 Our draft determinations

In section A6.4.1 of the risk and reward technical appendix to our August draft determinations, we set out our proposed WRFIM mechanism and associated reporting process, which we set out below.

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

- For the purpose of deriving incentive adjustments to be applied at PR19, the differences between projected allowed revenues and actual revenues in a given year (t) would be reflected in adjusted notional allowed revenues in the second subsequent year (t+2) to derive the basis of the WRFIM incentive.

- If a company's actual wholesale revenues were to fall outside a pre-determined band around its forecasted levels in a given year, a penalty would apply unless the company was able to demonstrate to us, in its annual reporting, with convincing evidence why it should not. This uncertainty band would be of similar character to the 'deadbands' most companies have proposed for relevant ODIs in their business plans.

- Above a threshold of +/-3%, a penalty of 3% applies to the full revenue over- or under-recovery. Between +/-2% and +/-3%, a linear sliding scale of penalty ranging from zero to 3% applies. This penalty would be uplifted by two years' wholesale WACC and RPI to account for the two-year lag in reflecting variations in later years' allowed wholesale revenue adjustments.

- In addition, if a company's revenue forecasting deviation exceeded +/-6% in a given year it would also be required to submit more detailed variance analyses alongside the standard information required as part of its normal annual regulatory reporting. We would use this in deciding whether to initiate further investigation. Historic evidence suggests such large annual variations are rare in the sector.

We noted that allowed revenues, set by the RPI+/-K factor in the licences, would be unaffected by the WRFIM and other PR14 incentives, which the existing licences only allow us instead to apply to allowed revenues set at the next period review, in the same way as existing and other proposed PR14 industry incentive mechanisms. To derive any PR19 adjustment arising from the WFRIM, the under- or over-recovery of revenue in charge year (t-2) will be reflected in charge year (t) through a 'notional' annual allowed revenue used as the WRFIM incentive baseline, which is designed purely for the purpose of deriving the WRFIM incentive adjustments at PR19.

We also explained that the value of the allowed revenue in these final determinations would still also be trued up in PR19 in the same way as under the existing RCM and in line with other PR14 incentives (such as delivery and cost performance incentives), subject to any application of this forecasting incentive and other PR14 cost and delivery incentives. So, for example, if demand grew unexpectedly strongly over the course of the period 2015-20, future customers would still potentially benefit from lower prices (as with the existing RCM) as companies could spread their fixed costs over greater demand.

In addition, we stated that we would not apply a WRFIM-type mechanism to companies' 2014-15 revenue projections that have been provided in their business plans during the PR14 process. But we will complete the existing RCM reconciliation process for the 2014-15 'blind year' after final determinations, and then consistently reflect this in adjustments to the WRFIM baseline for 2016-17, an approach that respondents to our consultation supported.

A7.5.2 Issues raised by representations

We received representations from five companies regarding the WRFIM[9]. Some of them were responses to our draft determinations, and some of them were follow-up queries following the charging workshop held in September 2014.

Anglian Water, Thames Water and Northumbrian Water raised clarification questions regarding whether over- or under-recovery of allowed revenue in any year will be applied within the period from 2015-20, by adjustments to the K factor, or through a true up in PR19.

Two companies (Portsmouth Water and Severn Trent Water) considered that a licence modification was not necessary for in-period bill variations. Portsmouth Water stated that the cost and complexity of modifications would not be justified by the likely impact on customers' bills of the rewards.

A7.5.3 Our final determinations

Having considered the above representations and queries, we have decided that our WRFIM proposals will remain unchanged from those set out in the draft determinations and are therefore as outlined in the section above.

On this basis, we confirm the WRFIM formula, which will be added to allowed revenue in year t to calculate adjusted allowed revenue of the year, for the period from 2015-20 will be as set out in the following equation.

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

Where:

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

AR_{t-2} the **allowed revenue in charging year t-2**, with the first year subject to the adjustment beginning in 1 April 2015, and with the allowed revenue from the charging years beginning 1 April 2017 being adjusted by the RFIM for that year.

[9] Anglian Water, Northumbrian Water, Portsmouth Water, Seven Trent Water, and Thames Water.

I The **specified discount rate**, which enters the above formula as an integer. In line with our decision at section A.7.4.1 above, the parameter for the period, 2015-20 will be 3.6.

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

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

RPI_t the **Retail Prices Index** used for wholesale price controls for year t as specified in Condition B in the licence, which is a percentage (for example, 3.5%).

t the year of WRFIM adjustment.

We note that allowed revenues in the final determination will be set in 2012-13 prices. The comparisons between projected allowed revenues in the final determinations and actual revenues in each year will be in the prices of the year concerned.

For the sector-wide WRFIM framework given existing licences, we confirm that the over or under recovery of allowed revenue will be applied through a true up mechanism at PR19, as with the current RCM. As such, operation of the WRFIM during the period from 2015-20 will affect customers' bills in the period from 2020.

Anglian Water Services, Severn Trent Water and South West Water asked to take the rewards and penalties for some of the performance commitments that each of them was proposing in-period (that is, ahead of the next price review). We have provided both companies with the same 'generic' draft licence text to allow for the in-period changes which the companies are seeking. We are now consulting on the text of the licence modifications which has been agreed in principle with the companies concerned. When any such licence changes have been agreed we will discuss with the affected companies any consequential need to modify the terms of WRFIM as appropriate.

As explained above, the revenue adjustment from any applicable penalty is derived with a two year lag. The true up will therefore be relevant to the last two years of the 2015-20 period (2018-19 and 2019-20). Specifically, there will be a true-up in year 2020-21 calculated with the WRFIM formula, based on the actual 2018-19 collected and adjusted allowed revenue figures. However, the actual collected revenue of 2019-20 will be unknown at the time of PR19 determination, and the true-up of these 'blind year' revenues relies on later information under existing company licence conditions (as with RCM for the current 2014-15 year in the current control period).

There are two scenarios to apply the WRFIM revenue adjustment to companies' allowed revenue for actual performance in 2019-20.

If the licence in place at PR19 does not allow changes to pre-determined allowed revenues during the 2020-25 period, then a true-up of allowed revenue would take place in the following periodic review (with relevant inflation adjustments).

However if a company's licence allowed it at the time, the alternative would instead be to reflect the results of the true up of 2019-20 revenues in bills earlier, in the year 2021-22. We illustrated the operation of such a true up in the regulatory period from 2020-25 in section A6.1.3 of our April 2014 consultation on the WRFIM.

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.

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