November 2013

Water today, water tomorrow

Final determination of Thames Water's IDoK application

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About this document

We have decided to reject the proposed additional increase in prices by Thames Water for its customers in 2014-15. This document sets out our final determination including the reasons for this decision.

In making our decisions, we want to be as transparent as we can with all stakeholders about how we have reached them. This document sets out the vast majority of the information on which we based our decision. But, in a small number of instances information directly relevant to our final determination may be commercially sensitive for Thames Water or for other water companies. In these instances we have excluded the information from the public version of this document.

On 25 October, we published an informal consultation about whether Thames Water has also benefited from wider economic circumstances beyond its control, and whether we can share these gains with consumers through an established regulatory process called the ‘substantial favourable effect’ mechanism, which is a separate provision in the licence framework. That consultation has now closed and we are considering the responses.

Unless otherwise stated, all figures in the summary of this document are based on a September 2013 price base that is consistent with the projected price base used in Thames Water’s application. Figures in the remainder of the document are in outturn prices to 2012-13, then September 2013 prices, unless otherwise stated. As the actual September 2013 price base was not published in time for our draft determination, we have updated figures for the actual September 2013 price base in this final determination.

Contents

1. Summary

1.1 Thames Water Utilities Limited application and our draft determination

On 9 August this year, Thames Water Utilities Limited ('Thames Water') asked us to increase the limits on its prices in the last 12 months of the current five-year price control period, which runs from April 2014. Under the terms of its licence, Thames Water can ask us to increase price limits where it can demonstrate that it has experienced changes in costs to specific items, which in aggregate are material, which we did not take account when price limits were set at the 2009 price review (PR09) for the period 2010-15. The thresholds for considering the materiality are defined in the licence as only allowing a licensee to apply for a price increase if costs can be shown to have increased by an amount equivalent to more than 10% of appointed business turnover.

Thames Water told us that it wished to increase charges to customers to recover costs related to:

- increases in bad debt costs– specifically, additional bad debt as a result of the economic downturn above what was allowed at PR09;
- the impact of the transfer of private sewers after price limits were set;
- land purchase costs for the Thames Tideway scheme that are above the level that was allowed at PR09; and
- increases in Environment Agency charges above the amounts that were allowed at PR09.

The company also took into account two offsetting changes that it had identified as reducing its costs in the same period:

- changes to the delivery of its sewer flooding work programme; and
- proceeds from disposals of land.

Under the licence, Ofwat is normally expected to review IDoK claims and make a determination within three months of receiving the application. On 16 October, we made our draft determination on Thames Water's application. Based on the evidence available to us at that time we judged that:

- Thames Water had not demonstrated that the costs claimed in its application fully met the criteria for inclusion in an IDoK;
- the trigger set out by Thames Water as the relevant change of circumstances for the sewer flooding item was inappropriate, so we disallowed it and included the costs through a Notice; and
- two additional items should also be taken into account (costs related to a specific project that was delayed and performance on the sewer network that was below the level set in PR09).

Overall we judged that the net value of the claim in the round, taking into account our notice, was less than 10% of the appointed business turnover. This meant that although we had identified that the company had seen a net increase in costs that were eligible for the IDoK process, the amount of this net increase (equivalent to around £7 on bills) was not sufficient within the rules of the licence to require an increase to price limits.

We invited interested parties, including Thames Water, to comment on our draft determination. The consultation period was necessarily short because we needed sufficient time to collect and examine carefully the relevant information and scrutinise Thames Water's proposals while adhering to the three-month limit set out in companies' licences.

1.2 Our approach to the final determination of the claim

We have made our final determination in accordance with our statutory duties, which, among other things, state that we must consider how best to:

- protect the interests of consumers;
- secure that a company is able to finance the proper carrying out of its functions as a water and sewerage undertaker; and
- promote economy and efficiency.

Our decisions are made on the balance of probabilities, and in cases such as this where a price increase is initiated by a company, and where there are material consequences for customers, the burden of proof falls on the company to establish its case and we expect it to provide strong evidence.

We expect the company to provide all relevant evidence that its claims are legitimate and that the costs they are claiming are efficient. In demonstrating this to us, the company should be expected to provide credible evidence in a timely manner and in sufficient detail to enable us to make our decisions.

Only where a company is able to do this can we conclude that costs should be included for consideration in the IDoK. This is particularly the case for a monopoly service provider whose customers are not able to choose their supplier. If too much uncertainty remains, it can be better to ask a company to think more carefully about the timing and levels of expenditure required, and how current and future customers should fund this through price limits.

Our final determination considers the long-term interests of customers and strikes a balance between the efficient expenditures that current and future customers should fund in price limits. But Ofwat is mindful of the fact that, in this respect, Thames Water's customers currently face a challenging financial environment – with many pressures on household income – and have already experienced increases in their water bills. Consistent with this, we follow an approach that ensures that we only allow those increases in costs that are justified. We do not consider it to be in the best interests of current or future customers to allow costs that are not justified or that we think may not be efficiently incurred.

In accordance with our duties, we therefore challenged Thames Water's application where appropriate to ensure that the costs claimed were legitimate and represented efficient costs that we might expect a prudently managed company to incur.

In addition to this overall approach we have followed the rules set out in Condition B of Thames Water's licence. This means that we:

- considered whether additional items not in the company's application should be included where our view was that they qualified under the rules of Condition B;
- assessed the extent to which costs from the company qualified under the rules of Condition B which means that the value of each item must be equivalent to at least 2% of relevant service turnover;
- assessed whether the costs were incremental to those already funded in price limits, and required Thames Water to provide credible supporting evidence to demonstrate that they could not have been avoided by prudent management; and

- ensured that the relevant incremental costs were incurred in an efficient manner. By 'efficient' we have needed to consider not just unit cost comparisons where these are available, but also whether the overall programme of work was or will be delivered in an effective and efficient manner.

In making our final determination we considered all the evidence available to us – that is, the information submitted before the draft determination was made and the information we have received since then.

We received feedback from a number of stakeholders, including Thames Water, to our draft determination, which we took into account alongside the substantial number of comments received in response to the announcement of Thames Water's application. We considered all the responses in making this final determination and we have published all the responses on our website today.

In its representations to our draft determination, Thames Water explained it did not agree with our draft determination and set out a number of issues which it thought supported its view that its price limits should be increased. We consider such issues in the relevant chapters for each item and, where appropriate, in appendix 1.

We also sought clarification from Thames Water on its consultation response to try and ensure we understood the basis of the statements it made. As we did for the draft determination, we used information from other water and sewerage and water only companies (either submitted for the 2014 price review (PR14) or supplementary information we requested) to help us review whether the components of the net costs that Thames Water submitted were appropriate and efficiently incurred. We have published these comparative data where we have made use of them in our draft and final determinations.

1.3 Our view of items to be included in the final determination

Our view on the scope of items to be included in the final determination has altered since the draft determination.

Thames Water argued that we were not entitled to take the items in both Thames Water's application and Ofwat's Notice together for the purposes of assessing materiality under the licence. We strongly disagree.

On 13 September, we notified Thames Water of our view on the sewer flooding item discussed above and on two other areas where we considered the company had not delivered the outputs for which customers had paid. The Notice including Ofwat's claims was made in accordance with Thames Water's licence, which allows us to take into account on behalf of customers items which are no longer required or will not be delivered but which were funded at the price review. These three areas related to:

- the **underspend on sewer flooding** discussed above;
- a significant slippage in the planned programme of works **at Deephams sewage treatment works**, which forms part of Thames Water's investment programme for sewage treatment and which customers funded at the last price review; and
- the company not adequately maintaining parts of its wastewater network in previous years to deliver the **serviceability** outputs (that is, the specified level of performance across the network) it was funded for at the last price review.

Our view is that two of these (underspend on sewer flooding and Deephams) should be included in our final determination, so funded expenditure on these items which we do not now expect to be efficiently incurred is returned to customers as part of determining prices within the existing control period. But, in both of these areas, we remain committed that outputs will be delivered in 2015-20 and the company will be able to recover efficiently incurred expenditure from its customers over this time period.

We have, however, decided that an adjustment in relation to **serviceability** should not be taken forward in our final determination of this IDoK. This is because Thames Water was unable to report the actual expenditure in the specific areas of performance failure and disagreed with us as to the impact of this failure on customers. Thames must now consider whether to put forward an adjustment on serviceability as part of its business plan for PR14. If Thames does not put forward an adjustment, as is the case with other companies where serviceability standards are not met, Ofwat will intervene to ensure that money is returned to customers. In our risk-based review of business plans we will take into account any need to intervene in setting price limits because the company has not properly reflected the impact on customers of performance failure in its business plan proposals following customer engagement.

1.4 The allowable costs

Our view is that it cannot be in customers' best interests to allow costs to be recovered if we are not convinced they were incurred either prudently or efficiently – the burden of proof to justify increased costs leading to changes in existing price limits must lie with the company.

We closely scrutinised Thames Water's application and its response to our draft determination with this in mind. We considered each item on its own merits, using the information available to us at the time, including evidence from third parties. We have allowed for costs for relevant items where the company has provided sufficient credible evidence to demonstrate that costs result from prudent actions and are being, or planned to be, incurred in an efficient way.

Overall, as for the draft determination, our view is that the allowable costs are substantially different from those that the company put forward in its application and in its responses to our requests for further information.

Our view is that the costs for **Thames Tideway land acquisition** should be £268.2 million, slightly higher than at draft determination but, still somewhat lower than in Thames Water's application.

We include a slightly larger downwards adjustment (£40.9 million) to take account of **proceeds from land sales** than in Thames Water's application. We do not consider the company's application included all the relevant income, but have made a smaller adjustment than in our draft determination following the consideration of further evidence from the company.

For **costs related to increases in bad debt**, we remain of the view that the econometric modelling that forms the basis of Thames Water's claim is not sufficiently robust to demonstrate the strength of link between deprivation and increases in bad debt since 2010 that the company has claimed. Thames Water is the only company to have raised an IDoK claim with respect to bad debt despite the recession affecting the operating areas of a range of water companies, some dealing with significant challenges to customers arising from the recession. Some companies have stated that they have maintained stable levels of bad debt despite economic conditions.

In addition, our view remains that Thames Water has over-estimated the increase in bad debt write off (that is, relevant costs actually incurred) over the period. Also, we think that the company is not achieving best practice in debt management and is not keeping its bad debt costs as low as they can be. Taken with evidence of the scope for improvement that exists in the company's wider customer relations and customer-facing policies relevant to effective bad debt management, this suggests that the bad debt costs the company has and expects to incur have not been as efficiently managed as they could have been.

Even if we rely on the data used for the company's latest statistical analysis, when we adjust the incremental costs to reflect our view of the appropriate amount of bad debt written off and Thames Water's efficiency in managing bad debt, the efficient incremental bad debt costs which we have confidence in attributing to changes in economic deprivation over the period fall below 2% of relevant turnover. As a consequence, under the rules of Condition B of Thames Water's licence, costs for this item are not considered within the IDoK.

For **increases in Environment Agency charges**, we have reduced the costs allowed for in the IDoK compared with the assessment in our draft determination. This is because, in response to our draft determination, the Environment Agency has stated that it "currently does not anticipate charging water companies for EIUC for quarter 4 of 2013-14 or for 2014-15"[1]. Excluding from the application the relevant 2013-14 and 2014-15 costs that the Environment Agency's latest advice indicates will not be incurred by Thames Water means that the remaining net relevant costs for this item are £13.6 million. This means the costs for this item falls below 2% of relevant turnover. As a consequence, under the rules of Condition B of Thames Water's licence, the costs for this item are not considered within the IDoK.

For **costs related to the impact of the transfer of private sewers**, the company has not provided evidence that has convinced us that the claimed additional costs it expects to incur are likely to be attributable to the new obligations, or have been and will be incurred efficiently or prudently. In our view, the company's response to our draft determination and additional evidence supports our earlier findings. We have increased slightly our view of efficient expenditure compared with the draft determination, but in our final determination have still reduced the costs compared with Thames Water's application to £22.1 million capital expenditure and £28.1 million operating expenditure, from £26.6 million and £40.8 million respectively.

[1] See appendix 2.

For **costs related to changes in the delivery of the sewer flooding work programme**, our view of the amount to be returned to customers remains the same as it was at the draft determination – that is, £150.4 million capital expenditure and £1.5 million operating expenditure. This is higher than the amount Thames Water included in its application for avoided sewer flooding expenditure. The difference reflects our view of the extent of efficient costs that could be avoided for each scheme, on average, and an adjustment to what we currently consider can reasonably now be efficiently delivered in the remainder of the period, taking into account the reduced levels of activity that Thames Water has carried out to date.

Although, in responding to our draft determination, Thames Water argued that it had committed to the delivery of the significant 2014-15 programme of activity set out in its application, and had sufficient resource to deliver it, we were not convinced that the evidence it provided in response to our requests for clarification supported the company's arguments.

For the scheme at **Deephams sewage treatment works**, we remain unconvinced that the company has demonstrated that the expenditure for this scheme can now be delivered to the new profile assumed by Thames Water in an efficient and prudent manner.

In its response to our draft determination Thames Water accepted that the delayed start to the scheme meant that 2010-15 expenditure would be lower than assumed at PR09, but said it had now agreed contractual arrangements that would enable it to still deliver by the original date of March 2017, and that these new arrangements meant that the variance in expenditure in period from the levels assumed for 2010-15 in setting price limits would be trivial. We disagree, as there appears to be a large amount of expenditure planned for 2014-15 with limited evidence available to us at this stage on how it will support the efficient delivery of the scheme. For the final determination we continue to assume that £41.6 million capital expenditure should be returned to customers in the current control period.

We and Thames Water remain committed to the efficient delivery of this scheme. So, we expect the company will include the re-profiled costs associated with the delayed delivery of this scheme in its business plan for PR14, in relation to funding by future customers. This is in line with the regulatory framework applied to all companies, including transitional arrangements in place to ensure the five-yearly price setting and cost assessment process continues to deliver efficient investment.

Our decision means that some £47 million of costs for this scheme continue to be allowed in 2010-15 and, based on the additional evidence that Thames Water provided, we consider this will be sufficient to fund efficient expenditures, comprising the expected costs the company identified on its critical path for the delivery of the project.

For **serviceability**, we reviewed all the information provided in response to the draft determination. We disagree with the company that the shortfall identified in our draft determination was disproportionate, although we welcome its acceptance that some customer detriment has occurred from the output delivery failures concerned, of the form which should be, in principle, reflected in customers' bills. The company's view of the size of an appropriate shortfall adjustment was based on the adjustments and policies in place at the last price review. These do not reflect the change in the regulatory framework in relation to output delivery implemented for 2010-15 performance.

But, as we explained in section 1.3, we did not include this item in our final determination for 2014-15 price limits, as there are already mechanisms in place for companies to set out proposed adjustments to future price limits as a result of 2010-15 performance in the business plans for the forthcoming price review.

The table below summarises our final determination on the costs to be allowed within the IDoK.

The table below sets out the contribution to materiality of each relevant item for our draft determination. We discuss the licence provisions associated with triviality and materiality further in section 2.3.

Thames Water Utilities Limited IDoK – summary			
Description		**Company's assessment (August 2013)**	**Our assessment (November 2013)**
Item 1: Thames Tideway Tunnel land acquisition – Thames Water's claim			
1.1	Estimated net change in capital expenditure over the period 2010-15	£273.4m	£268.2m
1.2	Estimated net change in operating expenditure over the period 2010-15	£0.0m	£0.0m
1.3	Materiality amount (NPV of total net change in costs)	£273.0m	£269.8m
1.4	Contribution towards materiality threshold	15.5%	15.3%
Item 2: Proceeds from land disposals – Thames Water's claim			
2.1	Estimated net change in capital expenditure over the period 2010-15	(£39.7m)	(£40.9m)
2.2	Estimated net change in operating expenditure over the period 2010-15	£0.0m	£0.0m
2.3	Materiality amount (NPV of total net change in costs)	(£43.8m)	(£45.1m)
2.4	Contribution towards materiality threshold	(2.5%)	(2.6%)
Item 3: Bad debt and debt management costs – Thames Water's claim			
3.1	Estimated net change in capital expenditure over the period 2010-15	£0.0m	£0.0m
3.2	Estimated net change in operating expenditure over the period 2010-15	£75.1m	£10.6m
3.3	Materiality amount (NPV of total net change in costs)	£164.6m	£23.9m
3.4	Contribution towards materiality threshold	9.4%	0.0%

Item 4: Increases in the Environmental Improvement Unit Charge component of the Environment Agency's abstraction charges – Thames Water's claim			
4.1	Estimated net change in capital expenditure over the period 2010-15	£0.0m	£0.0m
4.2	Estimated net change in operating expenditure over the period 2010-15	£18.5m	£13.6m
4.3	Materiality amount (NPV of total net change in costs)	£49.2m	£14.8m
4.4	Contribution towards materiality threshold	2.8%	0.0%
Item 5: Transfer of private sewers, lateral drains and pumping stations – Thames Water's claim			
5.1	Estimated net change in capital expenditure over the period 2010-15	£26.6m	£22.1m
5.2	Estimated net change in operating expenditure over the period 2010-15	£40.8m	£28.1m
5.3	Materiality amount (NPV of total net change in costs)	£149.3m	£106.0m
5.4	Contribution towards materiality threshold	8.5%	6.0%
Item 6: Sewer flooding – Thames Water's claim			
6.1	Estimated net change in capital expenditure over the period 2010-15	(£101.4m)	
6.2	Estimated net change in operating expenditure over the period 2010-15	£0.0m	
6.3	Materiality amount (NPV of total net change in costs)	(£100.6m)	
6.4	Contribution towards materiality threshold	(5.7%)	
Item 7: Sewer flooding – Ofwat claim			
7.1	Estimated net change in capital expenditure over the period 2010-15		(£150.4m)
7.2	Estimated net change in operating expenditure over the period 2010-15		(£1.5m)
7.3	Materiality amount (NPV of total net change in costs)		(£163.6m)

7.4	Contribution towards materiality threshold		(9.3%)
Item 8: Deephams – Ofwat claim			
8.1	Estimated net change in capital expenditure over the period 2010-15		(£41.6m)
8.2	Estimated net change in operating expenditure over the period 2010-15		£0.0m
8.3	Materiality amount (NPV of total net change in costs)		(£40.3m)
8.4	Contribution towards materiality threshold		(2.3%)
Overall assessment			
	Materiality amount (NPV of total net change in costs)	£491.7m	£126.8m
	Thames Water turnover for 2012-13 used in materiality test	£1758.9m	£1758.9m
	Materiality test	**28.0%**	**7.2%**

Notes:
1. Additional costs are positive; savings and revenue gains are negative.
2. The discount rate used is 6.26%.
3. Materiality test – result must be greater than ±10% to trigger a change in price limits. Item 3 and item 4 fails the test within condition so is represented as 0% in table.
4. All monetary values are stated in September 2013 price base assumed in Thames Water's IDoK application. Totals may not add due to rounding.
5. Thames Water made representations on the draft determination which altered its view on the detail of some items. These changes are discussed in the relevant section of the document.

1.5 Conclusions of our final determination, implications for price limits and bills

In making our final determination we followed the rules set out in Condition B of Thames Water's licence. This means that we:

- considered whether additional items not in the company's application should be included where our view was that they qualified under the rules of Condition B;
- assessed the extent to which costs from the company qualified under the rules of Condition B;
- assessed whether the costs were incremental to those already funded in price limits, and required Thames Water to provide credible supporting evidence to demonstrate that they could not have been avoided by prudent management; and
- ensured that the relevant incremental costs were incurred in an efficient manner. By 'efficient' we have needed to consider not just unit cost comparisons where these are available, but also whether the overall programme of work was or will be delivered in an effective and efficient manner.

Having taken these steps to scrutinising Thames Water's application and its supporting information, and having adjusted allowable costs as a result of our assessments, we assess that the company's claims and items in our Notice provide a net materiality position of 7.2%. This reflects both the impact of our Notice in relation to other relevant expenditures that could have been efficiently avoided, and the fact that the incremental costs we assessed for bad debt and Environment Agency charges were each less than 2% of relevant turnover, and so under the rules of Condition B had to be excluded from the materiality calculation.

As a consequence, the application as a whole does not pass the materiality threshold defined in Condition B of Thames Water's licence, which is to say that the total value of allowable costs does not exceed 10% of appointed business turnover.

So, we conclude there is no case to adjust the allowed bill increases that were already set in the price review for 2014-15. Therefore, the price limit for Thames Water will remain unchanged, as an increase of 1.4% before inflation for 2014-15. This real term increase represents a limit on the extent to which Thames Water may increase prices for its customers in 2014-15. Like all companies Thames Water can choose not to raise prices up to this limit.

Having made our final determination of Thames Water's application, the company can ask us to refer it to the Competition Commission. Thames Water has two months in which to decide whether it wishes to do so. If a reference is made, the Competition Commission normally has up to six months to reach its decision.

We recognise that aspects of this final determination will have implications for the overall costs and adjustments that Thames Water will be putting forward for the period 2015-20. We expect the company to manage this process and reflect any changes necessary in its business plan submission on 2 December 2013.

2. Background

2.1 Structure of this document

This document explains the detailed thinking behind our final determination on Thames Water's application for an IDoK. It sets out:

- **the background to the IDoK process** – covering the key issues within the process and the items that we considered in reaching our final determination;
- **our assessment of the items relevant to the IDoK** – we set out in separate chapters our assessment of each item, describing what the application included, additional evidence presented to us in response to our draft determination, our assessment of all the available evidence, and the conclusions we have reached for our final determination. We also describe our approach to the items we identified for inclusion in the process; and
- **our overall conclusions** – we draw together our analysis of all the items and set out the implications of this for the materiality calculation and the subsequent proposed impact on the company's price limit for 2014-15.

2.2 What is a final determination?

A final determination of an IDoK represents our settled and final view of the claims that a company makes in respect of an IDoK application, including the determination of any notices we make in response. Our view is informed by the information available to us. This includes information that is provided to us by:

- the company in its IDoK application;
- the company in response to queries we have raised;
- the company in response to our draft determination;
- other companies to help inform any comparative assessments;
- stakeholders in responding to our draft determination; and
- other information we have available from other sources, including the final determination at the last price review.

Once we have made our final determination, the company may accept our determination or seek a referral of our decision to the Competition Commission.

2.3 What is an IDoK?

Condition B of Thames Water's licence allows it to apply to us for an adjustment to its price limit (an interim determination of 'K' – or 'IDoK') for changes to specific items that have a total net material impact on the company, in present value terms, of at least 10% of the company's appointed business turnover. Only non-trivial changes are taken into account for these purposes. Each individual item must be in present value terms equal to at least 2% of relevant service turnover or, if a change does not relate exclusively either to the water or the wastewater service, 2% of combined water and wastewater turnover.

The calculation of the 10% materiality threshold is set out in the licence. The triviality threshold was set out in a public letter to the water sector in England and Wales (RD 13/10, 'Interim determinations 2010-15') on 13 October 2010. Costs need to be considered in present value terms. For operating cost and revenue changes, this present value is calculated over a 15-year period. For capital expenditure, this present value is calculated over the five years of the review period.

The specific items that can be included are either items that are not allowed for in full, or at all, in price limits (notified items – or NI) or relevant changes of circumstance (RCCs), which are defined in the licence. In summary, the RCCs for all companies and hence applicable to Thames Water are:

- **RCC(1)** – a new or changed legal requirement (each of these is also defined);
- **RCC(2)** – differences in the proceeds of land disposals from those assumed when price limits were last set; and
- **RCC(3)** – failure to achieve some output, funding for which was provided at the last price review.

2.4 What was in Thames Water's application?

On 9 August this year, Thames Water asked us to increase the limits on its prices in the last 12 months of the current period, which run from April 2014. In its application, the company said that it has experienced changes in costs to NIs or RCCs which we did not take into account when price limits were set in 2009. It said that these related to:

- increases in bad debt costs above what was allowed in 2009 price limits – specifically, additional bad debt due to the economic downturn;
- the impact of the transfer of private sewers;

- Thames Tideway land purchase costs above what was allowed in 2009 price limits; and
- increases in Environment Agency charges related to the Environmental Improvement Charge above what was allowed in 2009 price limits.

Thames Water's application also took into account two offsetting changes that it had identified as reducing its costs:

- changes to the delivery of its sewer flooding work programme; and
- proceeds from disposals of land.

Thames Water indicated that this application would add around a further 8% – about £29 – to the average household bill. Some of the increase could also affect the bills for customers of other companies who bill for wastewater services on behalf of Thames Water.

2.5 Our approach to assessing Thames Water's application

We have made our final determination in accordance with our statutory duties, which, among other things, state that we must consider how best to:

- protect the interests of consumers;
- secure that a company is able to finance the proper carrying out of its functions as a water and sewerage undertaker; and
- promote economy and efficiency.

Our decisions are made on the balance of probabilities, and in cases such as this where a price increase is initiated by a company, and where there are material consequences for customers, the burden of proof falls on the company to establish its case and we expect it to provide strong evidence.

We expect the company to provide all relevant evidence that, its claims are legitimate and that the costs they are claiming are efficient. In demonstrating this to us, the company should be expected to provide credible evidence in a timely manner and in sufficient detail to enable us to make our decisions.

Only where a company is able to do this can we conclude that costs should be included for consideration in the IDoK. This is particularly the case for a monopoly service provider whose customers are not able to choose their supplier. If too much uncertainty remains, it can be better to ask a company to think more carefully about the timing and levels of expenditure required, and how current and future customers should fund this through price limits.

Our final determination considers the long-term interests of customers and strikes a balance between the efficient expenditures that current and future customers should fund in price limits. But Ofwat is mindful of the fact that, in this respect, Thames Water's customers currently face a challenging financial environment – with many pressures on household income – and have already experienced increases in their water bills. Consistent with this, we follow an approach that ensures that we only allow those increases in costs that are justified. We do not consider it to be in the best interests of current or future customers to allow costs that are not justified or that we think may not be efficiently incurred.

2.5.1 Are the items included in Thames Water's application consistent with the terms of its licence?

In accordance with our duties, we challenged Thames Water's application where appropriate to ensure that the costs claimed were legitimate and represented efficient costs that we might expect a prudently managed company to incur.

In addition to this overall approach we have followed the rules set out in Condition B of Thames Water's licence. This means that we:

- considered whether additional items not in the company's application should be included where our view was that they qualified under the rules of Condition B;
- assessed the extent to which costs from the company qualified under the rules of Condition B which means that the value of each item must be equivalent to at least 2% of relevant service turnover;

- assessed whether the costs were incremental to those already funded in price limits, and required Thames Water to provide credible supporting evidence to demonstrate that they could not have been avoided by prudent management; and
- ensured that the relevant incremental costs were incurred in an efficient manner. By 'efficient' we have needed to consider not just unit cost comparisons where these are available, but also whether the overall programme of work was or will be delivered in an effective and efficient manner.

In making our final determination we considered all the evidence available to us – that is, the information submitted before the draft determination was made and the information we have received since then.

2.5.2 Are there costs associated with other qualifying items not included by Thames Water that we should consider alongside the application?

As part of the process, Thames Water's licence allows us to recover for customers funding previously allowed for outputs that are no longer being delivered or are not being delivered to the original timetable. We can consider these changes in circumstance at the same time as we assess the company's application. On 13 September, issued a notice to Thames Water and explained that we had identified three such items that we wanted to consider in more detail as part of our IDoK determination. These related to:

- an underspend on sewer flooding;
- a significant slippage in the planned programme of works at Deephams sewage treatment works; and
- the company not adequately maintaining parts of its wastewater network in previous years to deliver the serviceability output it was funded for at the last price review.

Thames Water takes issue with the proposition that Ofwat is entitled to take the items in both Thames Water's application Notice and Ofwat's Notice together for the purposes of assessing materiality under the licence. Essentially, the company has argued that our Notice of 13 September 2013 cannot be treated as a valid counter-notice (although this term is not used in the licence) for the purposes of paragraph 15.1(2) of Condition B, because it was not issued within 14 days of Thames Water's IDoK application (that is, by 23 August 2013, as Thames Water's application was made on 9 August 2013). We disagree with the company's proposed interpretation, and we set out key points to note below.

First, the relevant deadline in paragraph 15.1(2) for any (counter) notice must be later than 15 September and 14 days from the company's application (which in this case is 23 August 2013). This was clearly not possible given the relevant dates, and so paragraph 15.1(2) was irrelevant in the circumstances of this particular case. Thames Water later noted that our Notice must have been made under paragraph 15.1(1), where the deadline was 15 September. As our Notice was issued on 13 September 2013, it was issued before that deadline.

Second, Thames Water essentially notes that paragraph 15.2 of Condition B says that where paragraph 15.1(2) applies Ofwat is required to take items in two Notices together 'as a whole' for materiality (and any adjustment to price limits). It argues that, in this case, we cannot take the items in both Thames Water's Notice and Ofwat's Notice together, as paragraph 15.2 does not cover our Notice because it "must be taken to have been issued under para 15.1(1)".

But although paragraph 15.2 expressly covers counter-notices where paragraph 15.1(2) applies, it does not restrain Ofwat from (in this case) taking items in two Notices into account for materiality (and any adjustment to price limits) where paragraph 15.1(1) applies. In making any adjustment to price limits in accordance with paragraph 14.2 of Condition B, we would clearly be entitled to consider the items in both Thames Water's Notice and Ofwat's own Notice together to arrive at a price limit determination, which supports the interpretation that we are entitled to consider the net position for the purposes of considering materiality in this case.

Also, the inconsistency in any interpretation which resulted in counter-notices issued under paragraph 15.1(2) being treated differently from counter-notices issued under paragraph 15.1(1) (when considering whether the two relevant Notices could be taken together when assessing materiality) would be artificial and unreasonable. For example, if a company issued a Notice in September and Ofwat issued a Notice within the 14-day deadline in paragraph 15.1(2), paragraph 15.2 of Condition B would apply and both Notices would be taken together when assessing materiality. But, if a company chose to issue its Notice before September (as Thames Water did in this case), under this narrow interpretation paragraph 15.2 would not apply (for the same reasons it does not apply in this case) and the Notices could not be taken together when assessing materiality and any adjustment to price limits.

Thames Water's interpretation would therefore allow the company to artificially frustrate the clear aim of the relevant text in Condition B, which is that the two Notices should be taken together when assessing materiality. Depending on the particular facts of the case, this interpretation could cause Ofwat to act in a manner inconsistent with its duty to protect the interests of consumers, as the company could chose to 'game' the process by deliberately submitting its Notice before September in order to ensure that no offsetting items could be considered in assessing the relevant materiality test, which could result in the company enjoying an excess return at the expense of customers.

In arriving at our draft determination, we subsequently requested and received further information from Thames Water on each of these issues, and from other companies in relation to the first of these issues. We raised further clarification questions with Thames Water to better understand its representation to our draft determination on these issues.

2.5.3 What is the appropriate net additional cost attributable to each item?

An important part of our determination is reaching a view on the costs in Thames Water's application. In particular, we must consider whether costs:

- have increased compared with the costs allowed when we set price limits in 2009; and
- could have been avoided by prudent management action and, linked to this, whether the costs were incurred efficiently.

Where we consider additional costs being included in an application to be inefficient or higher than we would expect, we challenge the costs concerned to assess efficient expenditures, as we do in setting price limits more generally.

In reaching a view, we make our decisions on the balance of probabilities. In cases such as this, where the request for the price increase is initiated by the company, and where there are material consequences for customers, the burden of proof falls with the company to establish the case and we expect it to provide stong evidence.

We also consider Thames Water's application in the context of performance in the sector across England and Wales as a whole. This is because other companies are also affected by some of the same factors that Thames Water cites as driving the increases in the costs contained within its own application.

As a consequence, we collected some selected information from other water companies to help assess the application in relation to:

- the costs of dealing with bad debt;
- the impact of the transfer of private sewers after price limits were set; and
- sewer flooding performance.

2.5.4 Are the costs for each item 'trivial'?

The licence requires that we disregard items where the costs are considered to be trivial and only consider costs for items that are 'non-trivial'. Changes are considered to be trivial if the net present value (NPV) of the change is less than 2% of the relevant service turnover (water or wastewater) to which it, in our view, relates exclusively. Where we consider that a change does not relate exclusively to either the water or the wastewater service, we will assess triviality with reference to 2% of the combined water and wastewater turnover.

When assessing the triviality amount for the purposes of an IDoK we use the same approach as for materiality, discussed below.

2.5.5 Do all 'non-trivial' items, when aggregated, exceed the materiality threshold set out in the licence?

Condition B of the licence sets a materiality threshold above which we must consider the implication of Thames Water's application on price limits. If the present value of the net additional costs and revenue losses (calculated up to the start of the next charging period for capital costs and over 15 years for operating costs and revenue losses) arising from the changes is greater than 10% of the turnover, then a revision of price limits is triggered. Turnover of the appointed business is referenced to the accounting statements for the last financial year before the application (in this case, 2012-13).

This final determination has been made on the basis of our understanding of the licence – that is, that items raised by Thames Water in its application and Ofwat in its Notice are considered together. Thames Water argued that the items it submitted in its application should be treated separately from those in Ofwat's Notice for the purpose of assessing whether its application meets the materiality threshold. We do not accept those arguments, and set out further detail in appendix 1.

3. Assumptions within our final determination

In reaching a final determination there are a number of other specific assumptions we must include within our calculations. We set these out below and explain our assumptions for each.

3.1 Discount rate

In order to determine the NPV of each item for the triviality and materiality tests described in the previous chapter, and make adjustments to price limits we need to apply a discount rate. Depending on the individual licence of the company, Condition B states that the rate should reflect either the cost of debt or the weighted average cost of capital (WACC). For Thames Water, we must use a WACC.

For the final determination, we have assumed the pre-tax cost of capital (6.26%) that is consistent with the cost of capital we assumed at PR09 and with the discount rate Thames Water assumed in its application.

On 25 October, we published an informal consultation that considered whether Thames Water has benefited from other circumstances that are beyond its control since price limits were set. This issue is being considered separately from the IDoK process. (The consultation on this issue has only just closed. So, we have not reviewed responses from it or reflected them in this document.) Any future substantial effect determination under Thames Water's licence might include different assumptions on the cost of capital if relevant to the changes of circumstances being considered for such a determination. But this has not affected our determination of Thames Water's existing application.

3.2 Appointed business turnover

Calculations for determining the triviality and materiality tests require that we use the last reported turnover for the appointed business. In this case, that means we use the 2012-13 reported turnover for service and overall appointed business turnover of £1,759 million.

3.3 Annual allowable amount and revised price limits

Condition B requires the determination of an annual allowable amount and prescribes the method of calculating the revised price limits. We calculate these items in accordance with Condition B using the discount rate and our judgements on the allowable costs and revenues we used in the materiality calculation.

3.4 Impact on the capital expenditure (capex) incentive scheme (CIS)

At PR09, we put in place the capital expenditure (capex) incentive scheme (CIS). This involved comparing the amount of capital expenditure we considered was needed to deliver a given set of outputs funded in the price limits we set with companies' actual costs of delivering those outputs, in order to determine the rewards and penalties that companies can then earn or pay in light of their performance. In RD 13/10, we said that any adjustments to costs through an IDoK would be reflected in the CIS adjustments we would be making for actual performance at PR14..

4. Tideway land

4.1 The application and our draft determination

In its application, Thames Water explained that it faced significant costs related to the Thames Tideway Tunnel scheme by the end of the current control period. It said that a significant component of these costs related to the acquisition of land for the scheme, where expected expenditures were materially above the amount provided for in price limits for 2010-15. Price limits for 2010-15 included £100 million for the acquisition of land for Thames Tideway Tunnel.

Given the uncertainties of future land acquisition costs, we allowed Thames Water a specific NI in its licence, to enable its price limits to be re-opened if required to compensate it for additional expenditure incurred on the efficient acquisition of relevant land for the Thames Tideway Tunnel. The NI reflected the fact that the cost of land acquisition in 2010-15 was likely to be substantial, but that the exact timing and cost was uncertain.

Thames Water submitted an application for a Development Consent Order (DCO) in February 2013. The application requests planning permission to build the Thames Tideway Tunnel and compulsory purchase powers where necessary, so that the company can acquire the necessary land interests to deliver the project. The Planning Inspectorate is currently examining Thames Water's DCO application and it expects that the Secretaries of State for Communities and Local Government, and for the Environment, Food and Rural Affairs will jointly issue a determination on its DCO application in September 2014. In the meantime, the company has been acquiring sites by negotiation.

In our draft determination, we said that the costs for Thames Tideway land acquisition should be slightly lower than Thames Water proposed at £265.9 million capital expenditure because some of the costs in the application did not match previously reported costs. We also re-profiled a small amount of expenditure which we did not think customers should pre-fund. But in most respects, the expenditures have already been reviewed as part of the separate arrangements put in place to progress the Tideway scheme.

4.2 Summary of new evidence and responses from stakeholders

In its response to our draft determination, Thames Water provided evidence to justify the land acquisition costs in 2010-11 and 2011-12, to which we had made a small adjustment at the draft determination. This evidence sets out more information on the additional costs included in those years, which had not been clear in the company's original application.

Thames Water also argued that our challenge to Tideway land costs was departing from a position that had been previously agreed with us.

4.3 Our final assessment and what we have allowed in our final determination

We have reviewed the information Thames Water provided in its representations and now accept its view of land acquisition costs in 2010-11 and 2011-12. This has resulted in a small uplift to unfunded costs for inclusion in the IDoK of £0.050 million.

We do not agree that our challenges to the Tideway land costs are a departure from what had previously been agreed. The challenges we applied were in line with what had previously been reported to us and were the basis of our letters sent to Thames Water (dated 19 October 2011 and 27 June 2012), which confirmed our view of cost in those years.

Following our review of Thames Water's application, our view of unfunded land costs is £265.9 million for inclusion in the IDoK.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	0.0	0.0	30.1	201.9	40.5	272.5
Our view	34.2	-44.7	40.0	195.1	41.3	265.9
Difference	34.2	-44.7	9.9	-6.8	0.8	-6.6

5. Land sales

5.1 The application and our draft determination

All water companies are required to share the proceeds of disposals of protected land (as defined in the Water industry Act 1991 – or 'WIA91') with customers. RCC(2) allows for any material variation in these proceeds of land disposal (relative to previous price limits assumptions) to be recovered through an IDoK.

Thames Water's application included £37.4 million of proceeds for 2010-15 to be passed back to customers (this represents half the total amount of proceeds and is in line with Condition B of the company's licence which requires that proceeds from land disposals are shared 50:50 between the company and customers). The proceeds came from a mixture of sales to independent third parties and sales to group companies, including income received in relation to claw back agreements for sale of land previously transferred to a group company.

In our draft determination, we included the full amount of rental income that Thames Water told us it had received in 2010-15 (£10.7 million) and passed half of this to customers rather than offsetting this amount against an implied allowance of the form suggested by the company.

We made this adjustment because Thames Water had told us that its application did not include this rental income. It said it did not consider such income fell within the definition of protected land (as defined in WIA91 and the licence). Our view was that rental income should be included. At the time of the draft determination, it was not clear that customers had benefited from the way that Thames Water had previously reported rental income. As a result, we included the full amount of rental income in our draft determination as an offset against any further increase in price limits.

5.2 Summary of new evidence and responses from stakeholders

In its response, Thames Water argued we were incorrect to include rental income within the land sales adjustment. The company repeated its view that land sales only related to the creation of interests or rights over land so ongoing rental income should not be included, and it set out evidence to support its view. It also argued that our approach meant that customers receive too much benefit from the income concerned, because they were already benefiting through lower operating expenditure allowances in existing price limits.

5.3 Our final assessment and what we have allowed in our final determination

We agree with Thames Water that the value of income to be recovered through an IDoK relates to the creation of rights or interests in land. But our view is that, when determining this value, the company should include on-going rental income across the length of any agreement. Not doing so would imply a substantial benefit is not shared with customers.

Thames Water refers to previous Ofwat guidance and PR09 reporting requirements, which it claims supports its view. But we disagree. The specification of business plan guidance does not preclude the same information being reported as land sales when we collect it for different purposes. Reporting the information within land sales allows us to ensure the regulatory capital value (RCV) is adjusted correctly, while reporting the information as other income in the regulatory accounts allows us to consider its impact on the return a company earns.

We also note that:

- the land sales table of the June return (now part of the business plan) is clear that the value of short- and long-term leases should be reported; and
- in 2008, when we set out our view on the treatment of renewable energy for PR09 (in PR09/14), we explicitly said that rental income from land should be assessed and reported as part of land sales.

Thames Water's response also argued that by taking all the rental income into account, the benefit to customers (given the fact it included this income as negative opex) would be double counted, with more than the appropriate actual value of rent in period going to customers.

By reporting rental income as negative opex, the overall operating expenditure allowed in existing price limits in PR09 was slightly lower than it might otherwise have been. But at PR09, marginal changes in assessed operating expenditure could lead to step changes in efficiency assumptions.

As a result, while Thames Water's approach meant customers may have seen some benefit (due to a lower allowed level of operating expenditure in existing price limits than would otherwise have been the case) we were not clear whether the company had also benefited through the associated efficiency assessments.

By reporting the relevant income as negative opex rather than land sales, it also meant that while customers benefit through lower operating expenditure in the short term, they did not benefit from a permanent reduction in the RCV. As a result, there was a risk that customers would not see the full benefit in the long term.

Because of these two factors, we took all the 2010-15 income into account in our draft determination, to ensure customers were protected.

We note that, in its response, Thames Water did not provide any evidence to support its historic approach of reporting rental income as negative opex, nor did it provide any specific information to demonstrate that it did not benefit through lower operating expenditure given the impacts on PR09 efficiency assumptions.

But, since the draft determination and following Thames Water's representations, we have been able to work through the PR09 efficiency assumptions. Our view is that the company has not appeared to have benefited from lower efficiency assumptions by reporting rental income as negative opex.

Our final determination takes this factor into account. We have taken the total rental income reported for 2010-15 by Thames Water and deducted an allowance for the amount of rental income reported as negative opex at PR09. We then added this to the land sales that the company reported in its application to remove the risk of historic double counting that it highlighted.

This means the total value of land sales within the final determination is now £38.6 million. In future, we expect Thames Water to report rental income in line with guidance, including within its business plan, which we will use for setting 2015-20 price controls.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	-17.9	-3.3	-3.2	-3.3	-9.6	-37.4
Our view	-18.2	-3.4	-3.7	-3.4	-9.9	-38.6
Difference	-0.3	-0.1	-0.5	-0.1	-0.3	-1.2

Note: Numbers may not add up due to rounding.

6. Bad debt

6.1 The application and our draft determination

When we set the existing price limits in 2009, we assumed that there would be no net increase in bad debt and debt management costs above the level that companies reported in 2008-09. But, given the economic uncertainty at that time, we provided an NI for price limits to be re-examined in the event of potential increases in household bad debt costs.

When putting this arrangement in place, we said that a company would need to provide evidence, to our reasonable satisfaction, that any net increase above the 2008-09 reported levels of bad debt and debt management costs were reasonably related to a significant deterioration in economic circumstances affecting the company's operating area relative to 2008-09. A company would also need to demonstrate to our reasonable satisfaction that it had proactively applied best practice within a coherent strategy on debt prevention and management to maximise cost-effective revenue collection.

In its application, Thames Water compared the additional household debt written off during 2010-13 to the bad debt allowed in its final determination at PR09. It forecast that over the entire AMP5 period (2010-15), it will have to write off an additional £162.3[2] million compared with the assumption at PR09. The company also claimed that a proportion of this higher level of debt written off (totalling £68.0 million, as described below), which it says is being managed efficiently, could be linked to changes in deprivation in its operating area. It used econometric modelling to seek to establish this link.

As a result of its econometric modelling, Thames Water's application sought to recover an additional £72.1 million from its customers (equivalent to an annual bill impact for 2014-15 for the company's household customers of just over £16), which it claimed it will incur over and above its PR09 allowance in 2010-15, as a result of a significant deterioration in economic circumstances within its operating area. It calculated these costs on the basis of:

[2] In outturn prices until 2013-14 and then 2013-14 prices in 2014-15.

- increased household debt written off for AMP5 (£68.0 million), comprising:
  - increased household debt written off for customers billed by Thames Water (£64.7 million); and
  - increased household debt written off for AMP5 for customers billed by water only companies (WoCs) on behalf of Thames Water (£3.3 million); and
- increased financing costs for AMP5 associated with carrying these additional outstanding unpaid revenues (£4.1 million).

In our draft determination, we concluded that the additional costs Thames Water is seeking to recover from its customers (£72.1 million) for the bad debt it says it will incur over the period 2010-15 due to an increase in economic deprivation were based on unreliable estimates. We identified:

- potential issues with the company's accounting data;
- areas where it could have been doing more to manage the impacts of the recession and changing patterns in its customer base on its bad debts; and
- issues with the econometric model that the company used.

At the time we published our draft determination, it was not possible to quantify the impact of the first two issues on bad costs Thames Water was seeking to recover as part of its IDoK claim. Instead, our draft determination focused on the third of these issues – the econometric model Thames Water used and quantifying the impact it had on the company's claim.

Our draft determination concluded that, based only on the econometric model the company used, the additional bad debt costs for Thames Water-billed customers had been over-estimated. We judged a reasonable alternative estimate, using the evidence available was £11.1 million[3] (compared with the £64.7 million in the application). Applying these updated estimates to Thames Water's approach also reduced:

- the additional bad debt costs associated with WoC-billed customers to around £0.5 million; and
- the additional financing costs associated with these outstanding revenues to £0.7 million.

[3] In 2013-14 prices.

Overall, we concluded that, taking into account (for the purposes of quantification) only those issues we identified with the econometric model that Thames Water used, we assessed a revised estimate of the additional bad debt costs the company has experienced as a result of the increase in deprivation was £12.3 million rather than £72.1 million. As a result, we concluded that there was insufficient statistical evidence to support the company's claim of a non-trivial increase in its bad debt due to increases in deprivation levels in its area.

6.2 Summary of new evidence and responses from stakeholders

Since publishing our draft determination, we received new evidence from Thames Water in support of its bad debt claim. We also received feedback from other stakeholders on the bad debt element of Thames Water's claim. We summarise this evidence and information below.

6.2.1 Responses from stakeholders

Three stakeholders made reference to bad debt in their responses. These were:

- the Consumer Council for Water (CCWater);
- the London Assembly Group; and
- Murad Quereshi, a London Assembly Member.

In summary, CCWater said that:

- Thames Water should have instigated an appropriate debt management strategy and upgraded its systems much earlier on, as a more effective debt management strategy may have helped to offset the growing bad debt problem;
- although Thames Water has provided evidence that it has incorporated all elements of Ofwat's debt recovery principles in its procedures, there is no assessment available on the practical application of these principles, the effectiveness of processes adopted, or the rigour that the company has been applying to its debt recovery activities. The cross-industry comparisons do not suggest that the company has adopted "best practice" in all areas;
- all the water companies operating in the region will have felt the effect of the economic downturn and growing levels of deprivation, but they have chosen to absorb/manage these costs; and
- the modelling initially submitted in support of this claim appears to have had fundamental and significant flaws which Ofwat had identified.

The London Assembly Group said it had met with Thames Water to discuss its IDoK application. It encouraged us to examine closely the case the company made and the economic facts, to ensure Londoners get the services and investment required without paying more than necessary to fund them. The Group also explained it would hope to see debt management and other practices that minimise the burden of debt on paying customers.

Murad Quereshi welcomed our challenge and considered it would be grossly inappropriate for Thames Water, as a monopoly service provider, to use its position to add extra strain on family finances at the current time. He did not feel the company had sufficiently explained the bad debt it claimed in contrast to our view.

In considering Thames Water's application we have also considered public statements from some companies which did not identify a link between bad debt and the recession.

6.2.2 Response from Thames Water

Thames Water raised a number of issues in response to our draft determination. These are set out below.

Thames Water's write-off data

In our draft determination, we concluded that Thames Water had over-estimated the total increase in write-offs over the period 2010-15 by approximately £60 million relative to its bad debt costs assumed at PR09[4]. We reached this conclusion on the basis of KPMG's agreed-upon procedures report for the June return 2011, which concluded that:

[4] Our draft determination concluded that the net increase in household write-offs that Thames Water experienced was £102.5 million rather than £162.3 million. This was derived on the basis of comparing actual write-offs (excluding atypicals) against the PR09 allowance for bad debt that the company reported in its IDoK submission to derive an estimated net increase in write-offs of £102.5 million. But we consider that Thames Water's reported PR09 allowance for bad debt is inconsistent with our approach and that it is the bad debt charge embedded in the PR09 determination that should be compared with actual write-offs to identify the incremental costs relevant for additional funding in increased price limits. Although this changes the scale of the net increase in household write-offs over the period, it does not alter the size of the difference (£60 million) between Thames Water's estimated net increase in write-offs and Ofwat's estimated net increase. As a result, it does not change our draft determination conclusion that Thames had over-estimated the net increase in write-offs over and above that provided for in PR09 by approximately £60 million on the basis of incorrectly including atypical write-offs.

- Thames Water's write-offs figures include an atypical write-off of £29.2 million in 2010-11 (about half of the total write-offs in that year); and
- this was confirmed as atypical as it related to a "one-off exercise carried out during the year to write off old uncollectable debt".

We concluded that, in the normal course of business, this 'old' debt would have been written off prior to 2010-11 and, as such, would be outside of the period being reviewed in this application and so not part of the incremental bad debt costs that we have to consider in the IDoK.

In its response to our draft determination, Thames Water disputed this. It said that it understood that this atypical write-off "was described by KPMG at the time as a 'recessionary write-off'"[5]. The company also stated that our draft determination provided no evidence relating to the age profile of this debt and that its subsequent analysis showed that the age profile of this debt is not materially different from the age profile of the other debt that was written off. It concluded that "it is clear, therefore, that this atypical write-off occurred as a result of the deterioration in economic circumstances" and "should be included in an assessment of the additional debt written-off as a result of the deterioration in economic circumstances in Thames Water's operating area"[6]. Thames Water provided a short report to elaborate upon these points and to support its assertion that these atypical write-offs should form part of its IDoK claim.

Thames Water's management practices

In developing our draft determination proposals, we asked our economic advisers, PwC, to review the evidence Thames Water presented to us in its application on the efficiency of its debt management practices – specifically, the extent to which it is proactively applying best practice within a coherent strategy on debt prevention and management. We also collected additional information from other companies for this purpose.

On the basis of PwC's review of the evidence we concluded that, although Thames Water appears to have made good progress in some areas of bad debt management and, indeed, compares well to its peers in some areas, there are a number of areas where it could have been doing more to manage the impacts of the recession and changing patterns in its customer base on its bad debts. Specifically, our draft

[5] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.8).
[6] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.11).

determination highlighted three areas in which we concluded that Thames Water has an opportunity to improve relative to its water sector peers.

- The first relates to **'decisive recovery action'**, which refers to the action water companies take to trace and pursue outstanding payments, for which we concluded that Thames Water could be doing more to trace and pursue absconded debtors.

- The second relates to the **consequences of non-payment for customers**, for which we concluded that Thames Water could share data with credit bureaux (which we understand from the evidence submitted the company only plans to introduce in the future, along with a new debt management system).

- The third relates to the fact that, by writing off debt too soon and not sharing data with credit bureaux, Thames Water **is sending out a message to its customers that 'there may be no consequences for non-payment'**.

In its response to our draft determination, Thames Water said that:

- on the first issue, its approach to the collection of absconded and gone-away debt is "robust and in line with peers"[7];
- on the second issue, its current processes (such as letters of escalating tone with the statement of intent clearly outlining the course of actions the company will follow in order to collect the debt) "do ensure that debtors are made well aware of the consequences of non-payment"[8]; and
- on the third issue, its write-off policy is "in line with the majority of industry peers"[9].

Overall, the company asserted that it is "operating a coherent strategy on debt prevention and management"[10].

Thames Water's econometric model

In our draft determination, we concluded that the econometric model on which Thames Water based its estimates of the additional bad debt costs due to increased

[7] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.32).
[8] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.33).
[9] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.34).
[10] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.27).

deprivation generated unreliable estimates. The model failed a number of relevant statistical tests, which we concluded rendered the resulting estimates unreliable. As a result of issues with the econometric model that the company used, we concluded that the additional bad debt costs attributed to increased deprivation it was seeking to recover through its IDoK (£72.1 million) had been over-estimated and that a reasonable alternative estimate was £12.3 million. This revised estimate resulted from a quantile regression approach to control for outliers in the data used to derive the estimate in Thames Water's application.

In its response to our draft determination, Thames Water said that it reviewed the econometric analysis we used to support our draft determination. The company submitted that it identified a number of issues with the econometric modelling methodology that our economic advisers, PwC, used. Specifically, Thames Water suggested that PwC's assertion that it applied the estimator to the company's econometric model was not correct and that PwC applied its estimation approach (a 'quantile regression') to a "simpler model specification that pooled data across Local Authorities and over time"[11]. Thames Water submitted that the econometric model it used to support its claim included 'fixed effects' to take account of the features of the panel data, but PwC did not include these fixed effects in its models.

Thames Water went on to say that "PwC's model does not correct for the very issue it identified in taking into account the heterogeneous feature of the panel dataset and that PwC's model does not use 'fixed effects-type' techniques to correct for heterogeneity and the quantile regression estimation, in itself, has little effect on the size of the coefficient or explanatory power of the model"[12]. The company concluded that "PwC's models cannot therefore be relied upon to determine whether there is a relationship between the significant deterioration in economic circumstances and increase in bad debt in Thames Water's area, nor to quantify this relationship"[13].

New evidence from Thames Water

In addition to the above representations, Thames Water also produced a new, alternative econometric model to that which it used as part of its original IDoK submission "to provide a new and independent analysis of the amount of additional bad debt that is attributable to the deterioration in economic circumstances"[14].

[11] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.17).
[12] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.20).
[13] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.22).
[14] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.3).

The table below compares the main elements of Thames Water's original econometric model (on which it based its original IDoK submission and on which we based our draft determination analysis) and its new, alternative econometric model.

	Thames Water's original econometric model	Thames Water's new econometric model
Type of model	Linear model with fixed effects	Linear model with fixed effects
Variables modelled	Deprivation and bad debt	Deprivation, bad debt and time dummies
Period covered	2007-08 to 2012-13	2008-09 to 2012-13
Time lag	One year	Two years
Data weighting	–	Data weighted analytically using as weights the minimum number of properties in a local authority from 2006-07 to 2012-13
Dataset scope	Household bad debt in 53 local authorities	Household bad debt (split by metered and unmetered customer) in 66 local authorities
Deprivation measure	Economic deprivation index based on the employment and income domains of the Index of Multiple Deprivation (IMD)	Employment domain only of the Index of Multiple Deprivation (IMD)

According to Thames Water[15], this new econometric model:

- used the largest dataset available from the company on debt written off;
- utilised a measure of deprivation that is representative of the population at risk of not paying their water bills;
- utilised a consistent measure of deprivation that does not suffer from measurement and forecasting errors;
- used a weighted regression to minimise the impact of outliers;
- used a panel data estimator to exploit as much information in the data as possible;

[15] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.25).

- accounted for time and Local Authority fixed effects to address heterogeneity; and
- corrected for autocorrelation caused by the model specification omitting a relevant explanatory variable on 'churn'.

The new model generated an alternative estimate of the increase in write-offs for Thames Water-billed customers due to increased deprivation of £55.0 million[16] over the period 2010-15 relative to the estimated write-offs made in the base year for modelling of 2008-09. This new estimate was derived on the basis of the coefficient estimated from the new econometric model. This derived coefficient suggested that for every one percentage point increase in deprivation (measured by the employment domain of the IMD), Thames Water would write off an additional £3.53 of bad debt on average per household. This was £0.90 lower than the estimate generated by Thames Water's original econometric model.

Using the new econometric model, the company's advisers estimated that deprivation had increased by 4.5 percentage points over the period 2008-13 such that, with a two-year lag, bad debt written off during the AMP 5 period (2010-15) would increase as result of this rise in deprivation. Multiplying the annual change in deprivation by the number of properties served by Thames Water in each year of the price limits period, the coefficient of £3.53 resulted in an estimated increase in bad debt for Thames Water-billed customers of £55.0 million as a result of increased deprivation.

Thames Water then used this figure (£55.0 million) to derive an estimate of the increased bad debt for customers that are billed by WoCs on Thames Water's behalf, resulting in an estimate of £3.4 million. So, total additional bad debts written off due to increased deprivation were estimated at £58.4 million. The table below summarises these new estimates, and how they compare to the estimates generated by the econometric model originally used to support Thames Water's application (excluding additional financing costs).

[16] In 2012-13 prices.

	Thames Water's original econometric model[a]	Thames Water's new econometric model[b]
Additional bad debt resulting from an increase in deprivation	**£68.0m**	**£58.4m**
– Thames-billed customers	£64.7m	£55.0m
– WoC-billed customers	£3.3m	£3.4m

Notes:
[a] In outturn prices to 2013-14 and 2013-14 prices in 2014-15.
[b] In 2012-13 prices.

6.3 Our final assessment and what we have allowed in our final determination

In making our final determination on Thames Water's claim, we considered the views and additional evidence provided in response to our draft determination. Specifically, in relation to the three main areas for which further evidence was provided, we set out below our final assessment, before summarising what we have allowed in our final determination.

6.3.1 Thames Water's write-offs data

Following consideration of the additional evidence provided, we remain of the view that Thames Water incorrectly included within the write-offs of its IDoK claim an amount associated with atypical write-offs. On the basis of KPMG's agreed-upon procedures report for the June return 2011, we consider that this atypical write-off involved 'old' debt which, in the normal course of business, would have been written off prior to 2010-11 and, as such, would be outside of the period being reviewed in this application.

As discussed above, Thames Water raised two main points on this issue in its response to our draft determination.

- This atypical write-off occurred as a result of the deterioration in economic circumstances.

- The age profile of this debt shows it is not materially different from the age profile of the other debt that was written off.

We have considered both of these points in our final assessment.

On the first of these points, we reviewed again KPMG's assessment of this atypical write-off and found no reference to the debt being "recessionary" or linked to changes in deprivation within Thames Water's operating area. In reference to the atypical write-off, as we noted above, KPMG stated in its report that "there has been a one-off exercise carried out during the year to write off old uncollectable debt".

On the second of these points, we reviewed the evidence Thames Water submitted on the age profile of the atypical debts and the source of these debts. About one-third of these debts were up to two years old, with a further 43% of these debts aged three years or older. Thames Water maintains that the age profile of the atypical debt is not materially different to the other debt written off. This contradicts KPMG's view in the June return audit report that the debt was old. But even if the debt was due to the recession, then we would expect the age profile to be different to the other write-offs. From the evidence that Thames Water provided, we understand that the majority of these debts was associated with customers who had vacated property and for which efforts to locate the customer or secure payment had been unsuccessful. Consequently, it would appear that these debts were associated with population transience.

In summary, on the basis of our review of the data underlying Thames Water's claim and the additional representations and evidence put to us in response to our draft determination, we conclude the following.

- **Thames Water has not provided sufficient evidence to demonstrate that atypical write-offs (amounting to £29.2 million in 2010-11[17]) would ordinarily have been written-off during the period 2010-15 and should form part of its IDoK claim.** We conclude that this atypical write-off involved 'old' debt which, in the normal course of business, would have been written off prior to 2010-11 and, as such, would be outside of the period relevant to incremental debt being reviewed in this application.

- **Thames Water has, as a result, over-estimated its total write-offs over the period 2010-15 by approximately £60 million.** As well as the impact on 2010-11 bad debt, the inclusion of the atypical debt affected the estimates the company made for bad debt in the final two years of the control period. So, we consider that a consistent estimate of the total increase in household write-offs that Thames Water has experienced is £209.1 million rather than £270.3 million. This is shown in the table below.

[17] Estimated to be £31.6 million in 2012-13 prices.

2012-13 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view[18]	60.7	24.3	70.2	57.5	57.6	270.3
Our view	29.1	24.3	70.2	42.6	42.9	209.1
Difference	-31.6	0.0	0.0	-14.9	-14.7	-61.2

6.3.2 Thames Water's management practices

We remain of the view that, although Thames Water appears to have made good progress in some areas of bad debt management and, indeed, compares well to its peers in some areas, there are a number of areas where it could have been doing more to manage the impacts of the recession and changing patterns in its customer base on its bad debts, and hence where it falls short of best practice.

In reaching this view, we have considered the representations that various respondents made in response to our draft determination, including Thames Water, in relation to the three areas of management practice that we highlighted as areas where the company could improve relative to its water sector peers.

First, in relation to 'decisive recovery action', contrary to that which is implied in Thames Water's response to our draft determination, we did not assert that the tracing activities "fall below the level of the rest of the industry"[19]. Rather, our draft determination concluded that "there is no evidence presented in the [Thames Water] submission or the TDX report that accompanied the submission that suggests Thames Water is carrying out the same level of active tracing as some of its peers".

While we accept that the TDX report (which accompanied Thames Water's claim) concludes that the company carries out "the same level of active tracing as some of our peers", we are aware of at least one water company that will not, as a rule, write-off debts for absconded debtors. The reason for this is that they consider that even the most difficult to locate individuals will, at some stage in the future, resurface. While the debt remains within the statute of limitations (that is, less than six years old), they will periodically pass the account to a trace agency on a 'no-trace-no-fee' arrangement. The cost of holding the record and submitting a data file every three

[18] Figures shown as 'company view' are based on the sum of household write-offs for Thames Water-billed customers and household write-offs for WoC-billed customers provided to us by Thames Water. Totals may not add up (and may differ slightly to those submitted by Thames Water, where relevant) due to rounding.
[19] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.32).

months (to the trace agency) is negligible. The debt is fully provided for and so there is no accounting implication by doing so.

As a result, we consider that it is not inconsistent with the evidence that Thames Water submitted to conclude that, although the company may be carrying out the same level of active tracing as some of its peers and its write-off policy is in line with the majority of its peers, it is not in line with some peers who deploy a greater level of active tracing/decisive recovery action, or indeed best practice in the wider economy where this can be applied by water sector companies.

Second, in relation to non-payment for customers, we accept that the TDX report found that Thames Water provides letters of escalating tone to customers for whom bills have not been paid. But the TDX report also finds that the company's approach will be strengthened through the planned implementation of credit bureaux reporting. As a result, we remain of the view that sharing data with credit reference agencies is a key tool that water companies have for encouraging positive payment practices which Thames Water is not currently using (although it does have plans to do so in the future).

Finally, we accept that the TDX report found that Thames Water's write-offs policy was "in line with the majority of industry peers", although "in line" with a "majority" suggests that the company is doing no worse or no better than most water companies and doing either less or more than others. This suggests that there is still some scope for improvement if it is to proactively apply a best practice approach to what is a growing problem for Thames Water.

In summary, on the basis of the evidence available to us, including Thames Water's representations on our draft determination, we do not consider that the company is proactively applying a best practice approach to debt management and prevention. The evidence, including the TDX report accompanying Thames Water's submission, points to areas for which there is important room for improvement.

Information collected from other companies during our consideration of the application, and the views of our economic advisers, PwC, support this general conclusion.

Further, we note that Thames Water is the only company to have raised an IDoK claim with respect to bad debt despite the recession affecting the operating areas of a range of water companies, some dealing with significant challenges to customers arising from the recession. Some of those companies have highlighted the approach they have taken to better manage these debts.

For example, in its statement on its full-year results on 23 May 2013, United Utilities said: "Despite the tough economic climate, our range of actions have helped us to again deliver a good performance and we have sustained bad debts at 2.2 per cent of regulated revenue for 2012/13, consistent with last year." Further, in its preliminary results for 2012-13 announced on 30 May 2013, Severn Trent's data suggested a reduction in bad debt of £1.5 million in period. Its half-yearly report on 27 November 2012 confirmed that "Bad debt was stable at 2.2 per cent of turnover".

More broadly, the benchmarking evidence available suggests that Thames Water's level of customer service and interaction, which can help with the effective management of debt issues, are not leading in the sector. For example, its SIM score[20] for 2012-13 was the lowest in the sector. And in areas particularly relevant to managing the impacts of increased economic deprivation, such as the introduction of social tariffs in line with Government policy, Thames Water is lagging behind a number of other companies and does not plan to introduce such tariffs until 2015-16.

As described earlier, at the time we published our draft determination, we were not in a position to quantify the impact of the relative efficiency/inefficiency of Thames Water's debt management practices on its bad debts. But having considered the available evidence, we have now included an estimate as part of this final determination, to reach a view on what the company's bad debts could reasonably be assumed to be over the period 2010-15 had it been proactively applying a best practice approach to the management of these debts.

First, we attempted to identify how close Thames Water's debt management practices may have been to best practice in the sector itself at the start of the price control period in 2010. In this regard, we think that a reasonable proxy estimate of the company's relative efficiency in the bad debt area could be inferred from the broader operating expenditure catch-up efficiency challenge numbers from our PR09 final determination for Thames Water (given that bad debt costs are comprised within operating expenditure). This implies relative efficiency below sector best practice at the start of the period of about 2.5% (taking the water and wastewater services together).

[20] The service incentive mechanism (SIM) score measures the level of service that the water companies provide. It comprises a quantitative measure that is based on the number of complaints and unwanted contacts a company receives and a qualitative measure that is derived from a consumer experience survey. The two measures aim to capture both the number of times a company fails to meet the expectations of its customers as well as their experience.

Second, consistent with our approach to private sewer operating expenditure efficiency in the IDoK and our general approach in setting price limits, we assume that some further efficiency improvements have been made by efficient companies in the sector in the current control period. As noted above, other water sector companies have stepped up their efforts to deal with bad debt pressures, in order to contain their cost impacts in the face of the recession. While productivity increases may not have been as great as can be expected in the wider economy over time (for example, as implied in the discount rates recommended in the HM Treasury Green Book[21]), sector productivity improvements of about 1% a year appear to be a conservative estimate for efficient sector companies and, as noted, the evidence suggests that Thames Water has not yet caught up with the leading companies in the sector in the intervening period.

Finally, we expect that efficiency in bad debt management in the water sector more generally is still not fully best practice when benchmarked against leading companies in the wider economy, allowing for the specific limits applicable to the water sector in relation to disconnections. This was underlined by PwC's review of evidence on debt management practices within the water sector, which supported our draft determination findings. Although difficult to quantify, we think that a gap of about one to two years' catch-up (2-3%) is not unreasonable as a representation of this finding.

Taken together, our view is that these various considerations collectively support the application of a 10% cumulative efficiency adjustment to Thames Water's bad debt claim by the end of the period. This view is based on the evidence available that the company had some issues with efficient bad debt management at the start of the control period (including not being able to identify the make-up of atypical write-offs, of different ages, in response to one of our queries) and, in the intervening period, has not then achieved demonstrable advances relative to its peers, such that its catch-up challenge now remains at least as great at the end of the period, although we do acknowledge the important steps that the company is now taking to address this challenge for the future. This efficiency adjustment reduces Thames Water's bad debt costs year-on-year consistent with a glide path to a 10% reduction by 2014-15 (cumulating to about £14 million[22] over the period).

In summary, on the basis of our review of the original evidence Thames Water presented to us on the efficiency of its debt management practices, the evidence presented by other companies within the water sector on their debt management

[21] See https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent.
[22] In 2012-13 prices.

practices, the review of the evidence relative to best practice by PwC, and the representations made by Thames Water in response to our draft determination, we conclude the following.

- **Although Thames Water appears to have made good progress in some areas of bad debt management and, indeed, compares well to its peers in some areas, there are a number of areas where it could have been doing more to manage the impacts of the recession and changing patterns in its customer base on its bad debts.**

- **If Thames Water had been managing its bad debts more efficiently, we think its bad debt write-offs could be about 10% lower by the end of the control period than the company estimates they will be.**

- **Combined with an adjustment for atypical write-offs, this implies that the total write-offs over the period 2010-15 should be lower by approximately £75 million.** On this basis, we consider that the total increase in household write-offs that Thames Water would have experienced over the control period once atypical write-offs are excluded and adjusting for efficiency is £195.5 million rather than £270.3 million. This is shown in the table below[23].

2012-13 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	60.7	24.3	70.2	57.5	57.6	270.3
Our view	28.5	23.3	65.9	39.2	38.6	195.5
Difference	-32.2	-1.0	-4.3	-18.3	-19.0	-74.8

6.3.3 Thames Water's econometric model

We considered the two main pieces of evidence that Thames Water submitted in response to our draft determination conclusions surrounding the econometric modelling used to link bad debt write-off changes within the period to deprivation changes. Specifically, we considered:

[23] Totals may not add up (and may differ slightly to those submitted by Thames Water, where relevant) due to rounding.

- the company's representations that the econometric analysis we used to support the draft determination (a quantile regression) could not be relied upon, as it failed to include fixed effects and the approach has little effect on the size of the coefficient or explanatory power of the model Thames Water used once these fixed effects are included; and
- the new, alternative econometric model used by Thames Water to generate alternative estimates of the amount of bad debt attributable to the change in economic circumstances in its operating area.

6.3.4 Thames Water's criticism of the modelling used by Ofwat

We asked PwC to review Thames Water's points[24] – in particular, those regarding PwC's quantile regression approach with fixed effects.

Thames Water is correct that PwC's quantile regression did not include fixed effects. But PwC concludes that:

"We remain of the view that our quantile regression (without fixed effects) approach to the [original econometric model] is informative as an alternative way of estimating the relationship between economic deprivation and bad debts, and has merit given the nature of the dataset. Whether it would be desirable to estimate a quantile regression model with fixed effects is not clear, but in any case it is far from straightforward to achieve. Stata does not provide a command for such a model, and the academic literature does not support the approach used by [Thames Water]."

As a result, we do not agree with Thames Water that the quantile regression approach used to support our draft determination was incorrect or had little effect on the size of the coefficient when fixed effects are included. We do not consider that the approach the company used to combine a quantile regression with fixed effects generates a credible alternative estimate of the coefficient compared with the quantile regression approach we used in our draft determination.

On this basis, we remain of the view that the quantile regression approach used to support our alternative estimate of a coefficient, as used in our draft determination provided a reasonable alternative estimate of the impact of deprivation on bad debt.

[24] See 1 November 2013 letter to Ofwat from PwC and technical annex published alongside this document.

6.3.4 Thames Water's new, alternative econometric model

We asked PwC to review Thames Water's new, alternative econometric model, which the company says it used "to provide a new and independent analysis of the amount of additional bad debt that is attributable to the deterioration in economic circumstances"[25].

PwC noted that the new econometric modelling work has "some advantages as a development of the earlier work" carried out by Thames Water in support of its original IDoK submission. PwC also stated that "in particular we welcome the extension of the dataset to include 13 more local authorities and an extra year, and we think the use of EDEDI [employment domain of the economic deprivation index] as opposed to EDI [economic deprivation index] may have improved the accuracy of the data used" and "we think that the use of time effects is sensible".

But PwC also highlighted a number of further issues with respect to the new model.

- The model uses a weighted fixed effects regression. The advantage claimed for this approach is it includes all the data and is not skewed by potential outliers. But PwC considers that using this weighting approach (analytical weights) does not correct for outliers and does not correct for heteroscedasticity (which PwC states it finds regardless of whether the analytical weights are applied). The presence of heteroscedasticity can be attributed to a number of issues:
  - if a regression model is mis-specified;
  - if there are outliers in the data; or
  - if the model is of the incorrect functional form.

- The new model suffers from omitted variable bias based on the results of the Ramsey RESET test for omitted variables, as with the earlier modelling reflected in Thames Water's application. This means that the regression estimates are likely to be biased and cannot be relied upon.

- The new model is mis-specified based on the results of the specification test.

PwC performed several sensitivity tests on Thames Water's new econometric model by altering the modelling approaches or regressors. The company's preferred approach results in a coefficient of +£3.53, but PwC's sensitivity analysis

[25] Thames Water's response to Ofwat's draft IDoK determination (paragraph 5.3).

demonstrates that the coefficient takes a wide range of values (from -3.49 to +3.53) depending on the modelling approach taken. In other words, the results are highly sensitive to the exact approach. For example, if a one-year lag (that is, a lag of one year between a change in economic deprivation and a change in bad debt written off, which is what Thames Water's original econometric model assumed) is assumed for the new approach instead of a two-year lag (which is what Thames Water's new econometric model assumes), the coefficient changes from +£3.53 to -£2.52. This significant sensitivity of the coefficient to changes in the modelling approach highlights the continuing high degree of uncertainty associated with the basis for Thames Water's claim that increases in bad debt write-offs can mainly be ascribed to increases in economic deprivation.

PwC concludes that: "the resulting preferred equation has a number of features which could be inappropriate and we find that the estimated coefficient of interest is sensitive to changes in specification."

Given its doubts regarding Thames Water's preferred equation, PwC then estimated a simpler model using the company's full dataset used for the new model, which represented a more complete set of data than those used for the original application. PwC stated: "We performed a least squares regression using the full data set with time dummies and a two year lag. We performed a standard Hausman test and concluded that a random effects model was preferred to a fixed effects model. There was no evidence of serial correlation in this model. We obtained a significant coefficient estimate suggesting that each percentage point increase in EDEDI results in an increase of £1.67 in debt write-offs per household."

PwC then noted that: "In our initial work we noted that given the nature of [the original econometric model's] dataset, it was informative to use a quantile regression approach as an alternative to least squares, as some academic econometricians regard such an approach as more robust to the presence of outliers and non-normality of the error terms. As the [new econometric model's] dataset has similar characteristics to the [original econometric model's] dataset we continue to regard quantile regression as an informative alternative approach. Using a quantile regression applied to the full dataset (i.e. starting from 2006/07 and not from 2008/09 as used by [the new econometric model]) we obtain a statistically significant median coefficient of 0.95, implying that a one percentage point increase in the EDEDI in the average local authority in Thames' operating area would increase debt write-offs per household by 95 pence after two years (compared with £3.53 using [the new econometric model's] approach)."

This demonstrates further the instability of the coefficient associated with Thames Water's new econometric model, which changes significantly with different approaches to the way the model is constructed and what modelling approach is used. The following table presents examples to demonstrate how sensitive the coefficient – and resulting bad debt attributed to deprivation increases – are to variations in approach. It is important to note that none of these examples apply any adjustments for atypical write-offs or efficiency of the form discussed earlier in this chapter – the changes in coefficient and bad debt numbers presented below are driven purely by changes in the modelling approach.

Model description	Coefficient	Total bad debt
Thames Water's new econometric model	£3.53	£62.4m
Thames Water's new econometric model (with one-year lag instead of two-year lag)	- £2.52	- £44.6m
Thames Water's new econometric model (without weights)	£1.14	£20.2m
Thames Water's new econometric model (without weights or time dummies)	- £1.71	- £30.3m
PwC least squares regression using the full Thames Water dataset	£1.67	£29.6m
PwC's least squares quantile regression using the full Thames Water dataset	£0.95	£16.9m

Notes:
[a] In outturn prices to 2012-13 and September 2013 prices thereafter.
[b] The 'total bad debt claim' is the sum of: (i) the additional write-offs associated with Thames Water-billed customers; (ii) the additional write-offs associated with WoC-billed customers; and (iii) the associated additional financing costs. These estimates are based on multiplying the coefficient arising from the econometric regression by the change in deprivation (consistent with the numbers used in Thames Water's new econometric model) and by the number of households served (again, consistent with the numbers used in Thames Water's new econometric model) to estimate the additional write-offs associated with Thames Water-billed customers. This is then expressed as a share of the total bad debt write-offs Thames Water says it will incur during AMP 5 excluding accruals and WoCs (£67.5 million) and multiplied by the WoC-billed bad debt write-offs Thames Water says it will incur during AMP5 (£4.2 million) to derive an estimate of the additional write-offs associated with WoC-billed customers (which is added to the additional write-offs associated with Thames Water-billed customers, consistent with the approach taken by Thames Water in its new econometric model). These write-offs are then converted from 2012-13 prices to outturn prices to 2012-13 and September 2013 prices thereafter. Finally, additional financing costs are estimated by Ofwat on a pro rata basis using Thames Water's original IDoK submission (specifically, using the financing costs from the submission as a share of total write-offs estimated to be due to deprivation in that submission and multiplying this ratio by the different estimates of total write-offs due to deprivation for different coefficients).

In summary, on the basis of our and PwC's review of the econometric modelling approach that Thames Water used, we have reached the following conclusions.

- **There is, as yet, no reliable econometric model for quantifying the relationship between changes in deprivation and bad debt in Thames Water's operating area.**
- **All the models which attempt to explain how Thames Water's bad debts respond to changes in economic deprivation suffer from omitted variables bias and mis-specification problems, and are sensitive to the presence of outliers. This results in the coefficients estimated being biased and inefficient.** All the advisers who have considered this relationship, including Thames Water's advisers, agree that a variable or variables have been omitted from all models estimated in relation to this IDoK.
- **Thames Water's new econometric model suffers from these same problems. Further, the coefficient associated with Thames Water's new econometric model is unstable, changing significantly with different approaches to the way the model is constructed** (for example, what time lag is assumed for the effect of a change in economic deprivation on bad debt write-offs; whether weights are used; whether time dummies are included; how many years of data are used to estimate the equation) **and what modelling approach is used** (for example, whether a least squares approach is used or a quantile approach; whether the variables are input in levels or logs).
- **Ofwat accepts that establishing robust statistical evidence on the relationship between deprivation and bad debt is challenging. However, this reflects the high evidential standard associated with an IDoK claim that seeks to raise customer bills. In our view, none of the econometric models developed by Thames Water have met that standard.**

6.3.4 Final assessment on bad debt

In making our final assessment on Thames Water's claim, it is necessary to combine the impacts of the issues set out above and in our draft determination (atypical write-offs, management efficiency and modelling estimates) to reach an overall view.

6.3.5 The net increase in Thames Water's bad debts

As described above, the combined effect of our adjustments (atypical write-offs and management efficiency) is to reduce the 'starting point' for Thames Water's IDoK claim (that is, the amount of **efficiently managed** bad debt that Thames Water has written off within the period 2010-15 that could potentially be linked to the change in economic circumstances within its operating area relative to 2008-09). But it is necessary to convert this into a net figure – additional to the bad debt costs already funded in existing price limits – as it is the net figure that forms the basis of Thames Water's claim. This requires comparing the amount of adjusted efficient actual write-offs with an estimate of allowed write-offs over the period that can be assumed to be funded in existing price limits.

To make such a comparison, the report submitted by Thames Water in support of its new econometric modelling approach compares its actual write-offs with write-offs in a single 'reference year' 2008-09.[26]

We have compared our adjusted actual write-off numbers presented earlier with this same single reference year figure, to follow the approach used by Thames Water in its response to our draft determination, with the results shown below[27].

2012-13 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	20.9	-15.5	30.4	17.7	17.8	71.3
Our view	-11.3	-16.5	26.1	-0.6	-1.2	-3.5
Difference	-32.2	-1.0	-4.3	-18.3	-19.0	-74.8

It can be seen that simply re-applying Thames Water's approach (using reference year figures for 2008-09) but deducting the £74.8 million (based on adjusting for atypical write-offs and efficiency) renders the remaining adjusted average annual AMP5 write-offs comparable to the 2008-09 base figure (in 2012-13 price terms). So, using Thames Water's new modelling approach but adjusting for atypical write-offs and inefficiency implies there is no incremental bad debt to remunerate in the IDoK. This is not inconsistent with other companies being able to contain any impacts of the recession on their bad debt costs, with efficient bad debt management, and

[26] At PR09, our bad debt allowance was part of the overall allowance for operating expenditure, rather than a stand alone item. Broadly, we used the actual operating expenditure in a 'base year' (after adjusting for atypical and exceptional items) and then rolled this forward subject to a catch-up and continuing efficiency challenge. For PR09, 2008-09 was the base year. Thames Water appears to have used this principle for write-offs. But, this would not be exactly in line with our approach as write-offs are not directly a component of operating expenditure. Obviously, over time the bad debt charge should be equivalent to write-offs, but in a short time scale the two may not be comparable.

[27] Totals may not add up (and may differ slightly to those submitted by Thames Water, where relevant) due to rounding.

being able to absorb any residual 'pain' without adjustments to the existing price limits.

But, as we noted earlier, it is our usual practice for an IDoK claim on bad debt to compare actual write-offs against the company's bad debt charge allowed for in price limits in each year (rather than a single 'base year of write-offs). The difficulty with this approach is that it requires the ex ante provisioning/accrual policies and the actual ex post write-off policies to be reasonably aligned in the relevant years.

Thames Water noted, as part of its response to our draft determination, that while accrued and write-off numbers can indeed be aligned over a time period, there can divergences in individual years. It preferred to avoid the use of accrual-based comparisons in submitting the results of its new econometric modelling, and instead placed more weight on a direct comparison with an estimate of a single base year's actual write-offs, as shown above.

But, were we to retain our own approach of comparing actual write-offs with the charge allowed for in price limits, we obtain a positive overall number for incremental efficiently-managed bad debt in the current control period, as shown in the table below[28].

2012-13 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	25.7	-10.4	35.7	23.3	23.6	98.0
Our view	-6.4	-11.4	31.4	4.9	4.6	23.2
Difference	-32.2	-1.0	-4.3	-18.3	-19.0	-74.8

This suggests that Thames Water experienced an increase in write-offs over the 2010-15 period relative to the price limits allowances, having taken into account our adjustments. But, given that the company's basic econometric modelling approach (which it used to determine the proportion of incremental write-offs that were attributable to changes in economic deprivation since 2008-09) is based on its own approach of comparing write-offs to the base year of 2008-09, the use of information from such regressions to other estimates of the total incremental bad debt should be caveated accordingly.

[28] Totals may not add up (and may differ slightly to those submitted by Thames Water, where relevant) due to rounding.

6.3.5 The proportion of the net increase in Thames Water's bad debts attributable to deprivation

However, we must also reach a final view on the proportion of the net increase in Thames Water's efficiently-managed bad debts that can be reasonably attributed to increases in deprivation. It is this proportion where the different regressions can provide suitable indications, along the lines of the approach used by Thames Water.

Thames Water's new econometric model produces a coefficient which implied that 81.5% of the additional written-off bad debt that the company will experience over AMP5 (relative to 2008-09) was a result of increased deprivation, as set out in its response to our draft determination. Using the same data (that is, including the atypical bad debt, and not allowing for efficiencies), PwC's alternative conventional regression with a longer time series yielded an estimate of 38.7%. As noted above, PwC also estimated a lower coefficient with a quantile regression as a potentially valid alternative, but we have not used this alternative in our final determination. PwC was not able to re-estimate regressions reliably without the atypical bad debt, because Thames Water could not provide the necessary information on where the relevant debt arose.

So, we have used the proportions implied by the new Thames Water and PwC regression models (using the largest available data set) to identify the amounts of net incremental bad debt (estimated using our more conventional approach in the above table) which can be attributed to the increase in deprivation.

The impact of these two estimates on this basis (that is, based on attributed increases in the write-offs relative to the PR09 bad debt charge), converting to the price bases used for assessing IDoK applications according to our methodology, is shown in the table below[29].

[29] Totals may not add up (and may differ slightly to those submitted by Thames Water, where relevant) due to rounding.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Thames Water's new econometric model (81.5%)	-4.9	-9.0	25.6	4.2	3.9	19.8
PwC's least squares regression using the full Thames Water dataset (38.7%)	-2.3	-4.3	12.2	2.0	1.9	9.4

We add in estimated financing costs using the same approach as in our draft determination to show the total impact on the overall claim associated with our adjustments described above[30].

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Thames Water's new econometric model (81.5%)	-5.0	-9.3	27.8	4.5	4.3	22.3
PwC's least squares regression using the full Thames Water dataset (38.7%)	-2.4	-4.4	13.2	2.2	2.0	10.6

Finally, we also note that the quantile regression coefficient derived by PwC using the full Thames Water dataset, which we believe to be an informative alternative approach, produces an even lower figure than that shown above.

6.3.6 Overall conclusion

Consistent with our draft determination, we consider that Thames Water has not identified the right starting point for its claim, as it has over-estimated the actual bad debts it will incur in AMP5 if bad debts are managed efficiently. We think that the company's bad debts would be about £75 million lower if they were being managed efficiently and if they excluded the impact of old bad debts that we think would ordinarily have been written off outside of the period to which this claim relates.

[30] Totals may not add up (and may differ slightly to those submitted by Thames Water, where relevant) due to rounding.

If we compare this lower, adjusted write-offs figure against allowed write-offs using the approach taken by Thames Water (comparing it to the 2008-09 reference year), there would be no net increase in write-offs. But comparing this lower, adjusted write-offs figure to our allowances in existing price limits indicates that the company will write-off about £23 million more than we allowed (in 2012-13 prices) if managing its debt efficiently.

We think that this net increase is likely to have arisen from various factors including the recession and population transience[31]. But Thames Water has not been able to provide us with sufficient evidence that enables us to identify reliably how much of this net increase in write-offs was specifically due to the recession compared with these other drivers. All of the econometric models we have examined or estimated suffer from omitted variable bias as a result of not identifying the respective contributions of the different explanatory factors, and are therefore unreliable and unstable.

As we set out in our draft determination, PwC considers that equally valid regressions can be produced indicating that the recession accounted for less than half of any net increase in write-offs, with quantile regressions resulting in even lower estimates. PwC has now produced a more conventional (non-quantile) regression for the more robust data set provided by Thames Water, with a longer time series than that used in the company's new econometric model, which suggests the figure could be about 40%, which we have used.

This implies that about £11 million[32] of incremental efficient bad debt costs (write-offs plus financing costs) is due to the recession, which is broadly in line with our draft determination finding, albeit derived with a different regression equation using a larger dataset, and taking account of the issues we identified with atypical write-offs and efficiencies (that we described in a qualitative manner only in our draft determination). This implies the final determination figures as shown below, which

[31] In the past, Thames Water has identified population transience as a relevant factor influencing its bad debts. Most recently, in a media interview about its IDoK claim and bad debt, Thames Water's External Affairs Director stated: "The particular problem we have more than other companies is that we have a very high short-term rental population in London" (see www.bbc.co.uk/news/business-23664987). Prior to this, Thames Water raised the issue of population transience and its impact on its bad debts in its June returns. For example, Thames' 2007 June return stated that "the outstanding residential revenue position of Thames Water is worsening. Key contributing factors to this are the transient population and population demographics, especially in the London area" (see Thames June Return 2007: Table 6A – Information for the Bad Debt Notified Item pg.3). Its 2010 June return noted that these factors could lead to "problems surrounding maintaining customer records in our highly mobile area" (Thames June Return 2010: Table 6A – Information for the Bad Debt Notified Item pg.3).

[32] In outturn prices to 2012-13 and September 2013 prices thereafter.

represent a claim below the triviality threshold, consistent with our conclusions in the draft determination.

Outturn to 2012-13 then Sept 2013 prices[33]	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	12.5	19.1	15.0	13.2	12.3	72.1
Our view	-2.4	-4.4	13.2	2.2	2.0	10.6
Difference	-14.9	-23.5	-1.8	-11.0	-10.3	-61.5

Note: The figures presented for Thames Water are those in its original application. As discussed above, it submitted new modelling data in representations on our draft determination.

While it is possible to identify higher figures, as Thames Water has done, it is also possible to identify lower or even zero figures – even without assuming particular regressions. As discussed earlier, where a company has requested an increase in price limits for its customers, it is for the company to demonstrate with all relevant evidence that, on the balance of probabilities, its claims are legitimate and efficient. In our view, Thames Water has failed to provide us with evidence that convinces us that we must increase price limits for Thames Water in 2014-15 in this area of its application. So, we confirm our draft determination conclusion that the case for an increase in efficiently-managed bad debt in AMP5 due to recession has not been made under the terms set out in Thames Water's licence.

[33] Totals may not add up (and may differ slightly to those submitted by Thames Water, where relevant) due to rounding.

7. Environment Agency charges

7.1 The application and our draft determination

At PR09, we put in place an NI for increases in the Environmental Improvement Unit Charge (EIUC) component of abstraction charges. At the time, there was uncertainty about future increases in these charges.

The Environment Agency charges water companies and other abstraction licence holders to fund its costs of managing water resources. They can also make a further EIUC charge. This specifically covers the compensation costs of the Environment Agency's Restoring Sustainable Abstraction (RSA) programme.

Thames Water's application included £18.0 million for increases in EIUC.

Our review of the company's application identified that the allowance for additional costs already incurred should in fact have been slightly higher than Thames Water assumed, as a result of an error in the treatment of PR09 efficiency assumptions in its application. We proposed to allow for a net increase of £18.3 million in operating expenditure in this area. We were content that the approach the company took to estimate historic costs incurred was generally robust. But we did have some concerns about the robustness of the company cross-check procedures, which informed our assessment of the claimed estimated future 2013-14 and 2014-15 charges.

7.2 Summary of new evidence and responses from stakeholders

Thames Water told us that it expected costs to increase by more than the amount it included in its application. We did not take this additional amount into account for our draft determination because we had no evidence to support the revised amounts that the company had stated as due to be incurred.

In its representation to our draft determination, Thames Water provided an invoice from the Environment Agency for an additional £1.691 million for the period 2013-14, and said that this additional amount would also be added to its estimated 2014-15 costs.

In its response, CCWater said that, provided the amounts could be verified, it accepted our conclusion that these costs should be allowed.

The Environment Agency responded explaining that the future role of the EIUC was changing and that this would need further consideration.

7.3 Our final assessment and what we have allowed in our final determination

Including the additional £1.691 million invoice submitted by Thames Water brings the total cost for 2013-14 to £6.9 million. The company told us that it expected 2014-15 charges to also to be £6.9 million. We received further evidence from the Environment Agency which in fact suggested that the charges for 2014-15 for Thames Water for the EIUC could be £8.8 million. Adjusting for these changes identified by the Environment Agency, would raise the costs for the 2010-15 period further, to £27.4 million of which £3.8 million was funded through PR09 final determination allowances, leaving a net unfunded position of £23.6 million relevant to the claim.

But the role of the EIUC during the 2010-15 price control period is changing, particularly given the proposals within the Water Bill for the withdrawal or amendment of section 61 of the Water Resources Act 1991.

Our final methodology (published in July 2013 and having regard to the Water Bill) committed to including companies' efficient expenditure to resolve sustainable abstraction issues as part of the PR14 process (including in relation to schemes to tackle RSA sites). In line with this process, and the business planning guidelines we have set out, we would expect water companies to have identified economic and efficient investment for addressing sustainable abstraction issues within their business plans, and water resources management plans (WRMPs) in order to maintain supply security, and to have discussed proposals with their customer challenge groups (CCGs). The Environment Agency will continue to be closely involved in these discussions in the sector, as members of the CCGs.

We will consider these business plan proposals, which draw upon the WRMPs, as part of our forthcoming price review process, and will then be consulting on our draft determinations in line with our PR14 timetable.

Water companies are also able to consider sustainable abstraction proposals as part of the transition investment mechanism, should they consider it appropriate to start to tackle these sustainability issues promptly in 2014-15. Again, we set out our approach to transition investment proposals in our methodology.

Following our consultation on Thames Water's application, the Environment Agency has recently indicated to us that it would no longer need the EIUC funding for these sustainable schemes if efficient funding could instead be secured through the price review process. The Environment Agency has confirmed that, ".. in expectation that the Water Bill leads to the removal of water company rights to compensation, I [the Environment Agency] can confirm that we currently do not anticipate charging water companies for EIUC for quarter 4 of 2013/14 or for 2014/15. Should the Water Bill clause not be enacted, we will consider reinstatement of the EIUC charges." (See appendix 2.)

The efficient funding of RSA schemes through the business planning process provides clarity to water companies to ensure business plans can be prepared and reviewed on a consistent basis for all companies in anticipation of the Water Bill, without having to make assumptions about adjustments to address the risks of double counting. This step provides clarity for the water companies about how best to present this information within their business plans and WRMPs. It also gives greater transparency and confidence to the sector over how we will consistently address the funding of sustainable abstraction expenditures in the price review in line with our methodology.

Should the Water Bill not withdraw or amend section 61 of the Water Resources Act 1991 as envisaged, then we will consider appropriate adjustments to PR14 price controls to take such developments into account, including to ensure efficient funding to take account of any consequences of the EIUC instead remaining in place. This is in line with our general approach to the Water Bill in carrying out the price review process – we have explained in our methodology that price controls will need to accommodate such changes, if appropriate.

Based upon the Environment Agency's expected approach, we have removed future costs from the last quarter of 2013-14 and from 2014-15 as it is anticipated that these charges will no longer be incurred by Thames Water (or other water companies). The revised amount for 2010-15 is reduced to £16.9 million, of which £3.8 million was funded through PR09 final determination allowances. As a consequence, the NPV of costs for this item fall below 2% of relevant turnover. This means that under the rule of Condition B of Thames Water's licence these costs are not considered within our final determination.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	1.7	3.1	4.4	4.4	4.4	18.0
Our view	1.8	3.2	4.5	4.4	-0.80	13.1
Difference	0.1	0.1	0.1	0	-5.2	-4.9

Note:
Numbers may not add up due to rounding.
Thames Water numbers come from their original application, and do not account for the additional invoices included in their representations on the draft determination
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8. Private sewers

8.1 The application and our draft determination

At PR09, we asked companies to exclude costs related to the transfer of private sewers from their final business plans. This was because there was uncertainty on the timescale and scope of the transfer at the time. We said material costs could be recovered using the logging up process at the next price review; or through the IDoK process under RCC1.

The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 came into effect on 1 July 2011. Schemes made under this legislation provided for, with certain minor exceptions, the transfer of the ownership of private sewers and lateral drains that were connected to the public sewerage system on 1 July 2011 to water and sewerage companies. The transfer occurred on 1 October 2011.

In its application, Thames Water said it was particularly affected by the transfer of private sewers because of the relatively larger proportion of customers receiving a sewerage service only (due to the proportion of customers that are served by WoCs in its region) combined with the relatively lower sewerage prices compared with other companies in the sector.

In its application, Thames Water identified costs relating to:

- preparatory activities for the transfer of £9.5 million;
- operating expenditure since the transfer of £31.9 million, over half to deal with blockages;
- capital expenditure since the transfer of £21.6 million principally to address sewer collapses; and
- minor additional costs of £3.1 million, associated with additional customer service activity, data management and preparations for the upcoming transfer of private pumping stations.

In all, the company claimed £66.2 million over the 2011-15 period, of which £40.1 million was operating expenditure and £26.1 million capital expenditure.

It said this represented good value for customers because it was now repairing private sewer infrastructure more cheaply than customers would have paid had the transfer not taken place. The company has quoted an average cost of [redacted] per blockage clearance associated with the transfer, which it considers to be below commercial rates.

In our draft determination we were not convinced that Thames Water had fully demonstrated that the claimed additional costs were reasonably attributable to the new obligations or had been incurred efficiently or prudently. With this in mind, we allowed £20.7 million capital expenditure and £27.7 million operating expenditure. Our challenge represented about a 30% aggregate reduction in capital and operating expenditure claimed by Thames Water.

8.2 Summary of new evidence and responses from stakeholders

In its representation, Thames Water said that it understood the rationale for some of the adjustments in our draft determination but thought that others appeared to be arbitrary and were not supported by the evidence presented. Overall, the company commented on £13.4 million of the £17.8 million downwards adjustment to its claim in our draft determination. We address specific points the company raised in the relevant sections of this chapter.

Two stakeholders commented specifically on the private sewers part of the application. CCWater commented that Thames Water's claim for additional costs from the transfer of private sewers was "less than convincing". On the evidence submitted they considered it "difficult to see a sufficiently big increase in actual expenditure that is directly attributable to the transfer".

CCWater noted that "other sewerage companies have absorbed any additional costs arising from the transfer" and stated their belief that Thames Water "should be absorbing the costs associated with the transfer of private sewers until an industry wide provision can be agreed at PR14".

New Ash Green Village Association raised concerns about Thames Water's efficiency and customer service and described difficulties it has had in getting the company or its contractors to accept responsibility for the maintenance of transferred sewerage within the village. It spoke of a "considerable amount of time and effort by [the] Association, including meetings with local TWU management, to educate and train Thames Water personnel on the foul sewer system within the village". The Association also claimed that plans of the network they had provided to Thames Water did not appear to have been made available to the operations teams that needed them.

The Association's response concludes that "based on [its] experience, it seems that [Thames Water] does not understand what it is now responsible for managing, so it seems highly likely that it cannot provide credible data to support what (justifiable) additional costs, if any, it is incurring."

8.3 Our consideration of new evidence and responses from Thames Water

In reviewing Thames Water's claim, we considered four questions.

- Are costs reasonably attributed to the transfer?
- Are costs the net additional costs associated with the transfer?
- Are costs adequately explained/substantiated by the evidence presented?
- Are costs economic and efficient?

The remainder of this section sets out the response from Thames Water in each area and our final decision.

8.3.1 Are costs reasonably attributed to the transfer?

In our draft determination we excluded £1.53 million of operating expenditure comprising:

- £0.62 million for "additional developer service activity" because they were not linked to the private sewer transfer regulations;
- £0.2 million for a data validation exercise that we judged was only necessary because of shortcomings in Thames Water's management and information systems and business processes; and
- £0.71 million for an information systems upgrade that we judged was the proportion attributable to the support and maintenance of the legacy systems for the company's water network.

Thames Water did not raise issues with either of the first two adjustments but objected to the third as the "specific changes were made as a direct consequence of the transfer and the costs would not have been incurred otherwise".

While this is plausible, we still have concerns that a significant proportion of the overall cost of the IS upgrade is not reasonably attributable to the transfer.

As we noted in our draft determination, Thames Water acknowledges that a proportion of the operating costs relate to the support and maintenance of the legacy systems for its wastewater network. In the absence of a transfer of private sewers Thames Water would still have needed to support its legacy systems, so we are not persuaded that all the operating expenditure in the company's claim is incremental to that it would have incurred in any event. We also note that Thames Water has not taken account of any offset savings that have accrued through delaying the implementation of its new 'Work, Asset Management and Information (WAMI)' system.

Overall, having considered the additional evidence, we still consider that a reduction of £0.71 million in operating expenditure as applied at the draft determination is fair and reasonable.

8.3.2 Are costs the net additional costs associated with the transfer?

In our draft determination we excluded £3.61 million of operating expenditure because Thames Water, like all the sewerage companies, has always incurred costs associated with private pipework. We said that the company should have netted these costs off its application. These are costs incurred in dealing with customer contacts that are ultimately determined to relate to drainage problems in either:

- pipework that was in private ownership but which, owing to its status as a private sewer or a lateral drain, transferred to Thames Water on 1 October 2011, or
- pipework forming part of the domestic drain within the curtilage of a property and therefore falling outside the scope of the transfer.

Thames Water did not raise any issues with these adjustments. In the absence of additional evidence, for the final determination we retained the downward adjustment in operating costs of £3.61 million in respect of activities that we consider are not truly additional to the level that the company experienced prior to the transfer.

8.3.3 Are costs adequately explained/substantiated by the evidence presented?

Our draft determination excluded £7.23 million of operating expenditure because the evidence was not sufficient to support Thames Water's claim. In our view, the limitations of the company's financial systems (which record the costs of follow-on jobs under the original blockage job code irrespective of the actual activity being carried out) mean that the company cannot demonstrate a full understanding of the costs incurred or the activities driving costs. Given this uncertainty, we could not be confident that the costs were truly attributable to the transfer or prudently incurred. The £7.23 million reduction comprised the following three elements.

- £3.50 million reduction to 'blockages' expenditure. This reflected our view, based on the evidence provided, of the extent to which Thames Water could not substantiate direct operating expenditure allocated to 'Blockages'

- £1.95 million reduction to direct operating expenditure for 'Other Repairs and Maintenance'. We assumed that the uncertainties identified for blockages were also likely to affect 'other repairs and maintenance' expenditure in a similar way.

- £1.78 million reduction to 'Management fee' or 'Internal operational resource' expenditure. This reduction to the on-costs was in proportion to the adjustments applied to the direct costs.

Thames Water disagreed with these adjustments. It argued that:

- by assuming a figure of [redacted] per blockage, we did not take proper account of blockages where follow-on activities lead to additional costs;
- extending our calculation for blockages to 'Other repairs and maintenance' is "arbitrary and inconsistent with [our] own top-down benchmarking across the industry";
- our benchmarking analysis showed Thames Water's unit cost per blockage to be 13% below the weighted industry average; and
- the external auditor, Halcrow Management Sciences, which Thames Water employed to review its application concluded that it had "no material concerns with the accuracy and reliability of cost data which has been drawn from various sources".

While Thames Water asserted that our challenge to operating expenditure in the draft determination was unwarranted we note that, save for providing a breakdown of blockage activities by cost band since the draft determination (described below), the company has not provided a robust explanation and reconciliation between the costs incurred, activity and claimed unit costs. Indeed, Thames Water noted some of the difficulties involved, stating in a response to a query: "Our financial systems are set up so that the costs of… follow-on jobs are recorded under the original blockage job code, meaning that we are not able to provide a breakdown of the costs associated with each of these blockage related activities".

Since the draft determination Thames Water has nevertheless provided us with a breakdown by cost band of the 37,400 jobs raised in 2012-13 for blockage related activities. This information has enabled us to construct the following table.

Cost band	Mid-range cost	Approx no. of jobs	Min total cost	Max total cost	Total cost based on mid range cost	Percentage of total	
(£)	(£)	(nr)	(£)	(£)	(£)	Jobs	Cost
0-50	25	8,056	–	402,800	201,400	21.5%	4.2%
50-100	75	28,109	1,405,450	2,810,900	2,108,175	75.2%	43.8%
100-150	125	774	77,400	116,100	96,750	2.1%	2.0%
150-400	275	337	50,550	134,800	92,675	0.9%	1.9%
400+	**18,637***	124	49,600		**2,311,000**	0.3%	**48.0%**
Total		37,400	1,583,000		4,810,000	100%	100%

Sources: TW Exhibits 26 (Table H) & 183 (Response to query 09).
Note: Numbers in bold have been back-calculated by Ofwat.
* denotes a mean figure rather than the mid-point of the range.

This additional information is helpful. But just 0.3% of the blockage-related activities account for an estimated 48% – or nearly half – of the total direct operating costs that the company has allocated to 'Blockages'. This means that the average direct unit operating cost of these 124 most expensive jobs is more than £18,000. In our view, the typical follow-on activities cited by Thames Water (for example, CCTV investigations and surveys, rodent baiting and general clean-up activities) do not explain this high level of cost. Given the significance of this element, we would have expected Thames Water to provide supporting evidence to substantiate the expenditure further.

However, to assess further whether the scale of reduction we applied at the draft determination was reasonable, we carried out further analysis using the data in the above table. For this purpose, we conservatively assumed that the mean direct operating cost of the most expensive blockage jobs was £2,750 (that is, ten times the mid-range cost of the next most expensive cost band). This meant that the 124 most expensive jobs would account for £0.34 million and that a total of £2.84 million of costs allocated to 'Blockages' could be regarded as having been accounted for. This leaves £1.97 million of the total of £4.81 million of operating expenditure in 2012-13 which could be regarded as insufficiently substantiated to contribute towards an IDoK and a consequent increase in customer bills. This is virtually double the amount we previously assumed and for which an adjustment was made in our draft determination. We do not conclude the above example represents a better estimate of efficient costs than that in our draft determination, but it serves to illustrate that the assessment in the draft determination could have been conservative.

Thames Water comments that our draft decisions are inconsistent with the findings of the company's independent audit of the private sewer IDoK cost data. But:

- because the company is unable to provide us with detailed cost information it is difficult to understand how the conclusion that there were "no material concerns with the accuracy and reliability of cost data" has been reached; and
- the scope of the company's external audit of private sewer IDoK cost data did not include consideration of whether costs incurred were wholly incremental to those incurred by the company before the transfer of private sewers or whether they were reasonably attributable to the transfer – which are key criteria for us in assessing Thames Water's application.

Taking all of the above into account we have decided to retain the downward adjustment of £7.23 million in operating costs used in our draft determination in our final determination.

8.3.4 Are costs economic and efficient?

Our draft determination considered both opex and capex efficiency. The company responded to our draft determination approach for both forms of expenditure.

Operating costs

In our draft determination, we said that our comparison of all companies' August data submissions showed that Thames Water's outturn unit costs for blockage clearance were about 13% below the weighted industry average. Accordingly, we considered that Thames Water was operating at a reasonable level of efficiency in 2012-13 and so the application of a catch-up efficiency adjustment was unwarranted for operating expenditure given performance relative to the company's sector peers.

But because the transfer of private sewers took place relatively recently and companies are still at an early stage of developing efficient processes for managing the transferred assets, we noted that there was likely to be scope for future efficiency gains. We also considered in our draft determination that continuing efficiency gains should now be achievable at a rate at least as fast as we assumed for the AMP5 period for existing activities when we last set price limits in 2009.This reflects the fact that this is a new area, where we expect further efficiency to be identified as processes become more established.

However, taking a conservative approach, we applied the same continuing base operating expenditure efficiency adjustments to forecast costs in 2013-14 and 2014-15 as we applied in each of the five years (0.25% per year) in the last price control. As a consequence, we removed £0.06 million of operating expenditure from Thames Water's claim.

Thames Water challenged this adjustment stating, "As [its] forecasts for operational activity to the end of AMP5 are conservative, the on-going efficiency assumptions do not represent a reasonable balance of risk".

Thames Water's objection to our £0.06 million reduction in operating costs is based on its contention that its forecasts of operational activity in the remaining years of the AMP5 period are conservative. While we have questioned this assumption in our draft determination, we do not consider the issue of future activity levels to be pertinent to decisions on continuing efficiency adjustments.

It is clear from a representation we have received from New Ash Green Village Association in the Thames Water region that operational activities associated with the transferred assets have, at least in some cases, been carried out inefficiently (see section 8.2). This only confirms our view that there is scope for Thames Water to achieve efficiency gains in the rest of the period and we consider it reasonable and fair to retain the 0.25% per year efficiency adjustment applied in 2013-14 and 2014-15 in our draft determination into the final determination.

Capital costs

In assessing capital efficiency, we considered capital costs associated with collapse repairs and other activities, such as manhole repairs, separately. Based on comparative data relating to collapses from the August data submissions we judged Thames Water to be a poor performer for capital cost efficiency in this area compared with its peers. After adjusting for regional price differences Thames Water's outturn unit costs for collapse repairs exceeded the industry weighted average by about one-third. Applying an adjustment factor of 0.75 (that is, 1/1.33) reduced the company's claimed direct capital expenditure by £4.12 million and associated on-costs by a further £0.64 million.

We do not have similar comparative industry information for other areas of private sewer capital expenditure. In these circumstances, we considered it unreasonable to apply the same adjustment as we did for collapses without relevant evidence. As a result, we assumed Thames Water was as efficient for these activities relative to its peers as it was for the overall capital programme at PR09. Applying the same 5.03% adjustment in year 1 of the AMP5 period as was used at the last price review results in a downward adjustment of £0.36 million in capital costs.

In its representation on our draft determination, Thames Water argued that in assessing relative cost efficiency we should use an unweighted industry average rather than compare its unit costs to a weighted industry average. It said this was consistent with previous practice for setting such efficiency challenges. The company also subsequently pointed out that we were using an unweighted approach in calculating the average cost to serve in the area of household retail control in PR14.

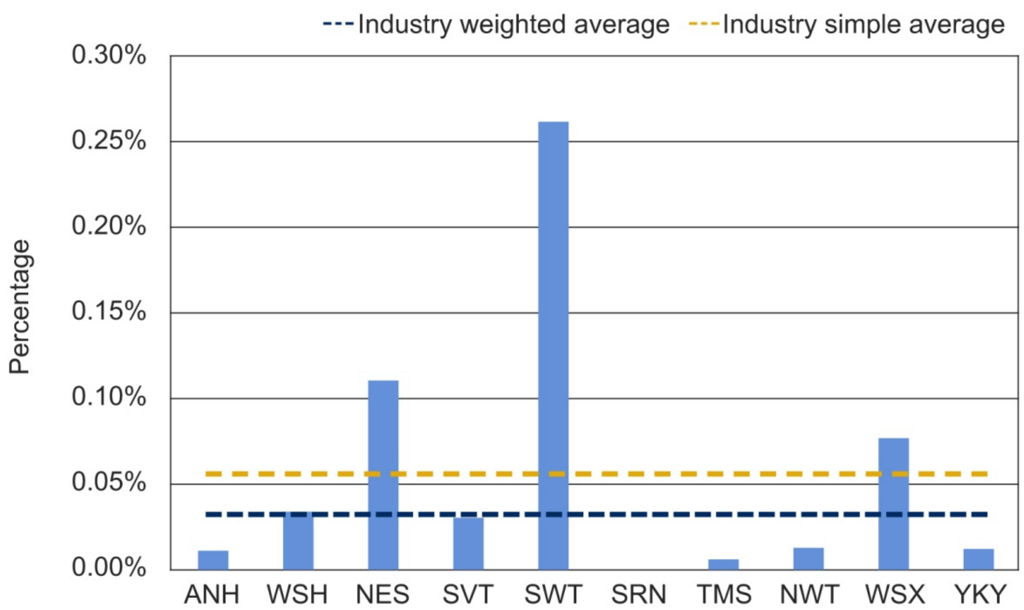
We agree with Thames Water that a precedent exists for using a simple (that is, unweighted) industry average as an efficiency benchmark. Equally there are also precedents for using other benchmarks. There are examples where we have used a weighted industry average to assess relative efficiency and for using the median or frontier company. For our final determination we consider that the use of an unweighted industry average in the calculation of a catch-up efficiency adjustment for capex related to 'Collapses' (and the associated on-cost entitled ' Management fee') is appropriate although this does not necessarily have implications for our consideration of costs in PR14. This results in the application of a reduced adjustment factor of 0.8 (that is, 1/1.25) to relevant costs, reducing claimed capital expenditure by a lower amount of £3.80 million.

Thames Water also cautioned that Ofwat should not place undue reliance on the capital expenditure unit cost analysis, suggesting that differences in unit costs between companies probably owed as much to differences between the type and amount of activities driven, for example, by the different ages and conditions of the networks in different regions, as to differences in efficiency.

We agree that differences in unit costs may, at least partly, be due to factors other than relative efficiency. But we do not consider it likely that the types of maintenance jobs or the relative numbers of them would vary sufficiently between companies to materially affect unit capital costs. Nor are we persuaded that the factors Thames Water cited, such as age or condition of the pipework have a bearing on the outcome of the analysis. There might have been some merit in this argument had our analysis used network length as the unit cost denominator (as this would not have taken any account of the susceptibility of the sewers to collapse). But because we used the number of collapses as the denominator, we have not placed weight on this argument.

However, in view of Thames Water's challenge to our draft determination proposals, we considered whether any other activities that give rise to capital expenditure (such as renewal of sewers) for which we have data on outputs could help to explain the company's relatively high unit costs. The August data submission from companies included information on the lengths of transferred pipework that have been rehabilitated since 1 October 2011. If Thames Water were shown to have rehabilitated a higher proportion of the transferred networks than other companies this could explain, at least in part, its relatively high total capital cost per collapse ratio. But, as can be seen from figure 1 this is not the case. With the exception of Southern Water, which has not reported rehabilitating any adopted pipes at all, Thames Water has rehabilitated proportionately less pipework than any other company.

Figure 1 Proportion of adopted gravity sewers rehabilitated since transfer



If there are reasons other than relative efficiency that account for the differences in unit costs between companies, these could arise because of differences in efficiency, different accounting practices or legitimate differences in the types of work. We have some evidence that this is the explanation for the apparent unit operating cost per blockage achieved by Southern Water which Thames Water regards as implausibly low.

Our view is that the issues which arise from the data and its analysis – including the variations caused by different accounting treatments in different companies – support the new approach being taken at the forthcoming price review to consider all expenditure as totex for the future.

But, to determine Thames Water's application in the meantime, in order to adjust for the effect of different capitalisation policies we compared unit costs (operating expenditure per blockage, capital expenditure per collapse) having redistributed companies' actual expenditure as reported in the August data submissions between capital expenditure and operation expenditure so that the capital expenditure/operating expenditure ratio for each company equated to the sector average.

The results of this analysis are shown in figures 2 and 3. They reinforce the conclusions in our draft determination, namely that Thames Water appears relatively efficient compared with its peers in terms of its unit operating costs and relatively inefficient in terms of unit capital costs. Considering unit operating cost efficiency, Thames Water's position relative to our draft determination analysis improves to 29% below the weighted industry average (or 25% below the simple (unweighted) industry average). For unit capital cost efficiency, the company's position relative to our draft determination analysis worsens to its being 43% above the weighted industry average (or 56% above the simple industry average).

Figure 2 Total outturn operating expenditure (normalised by capex/opex ratio) per blockage

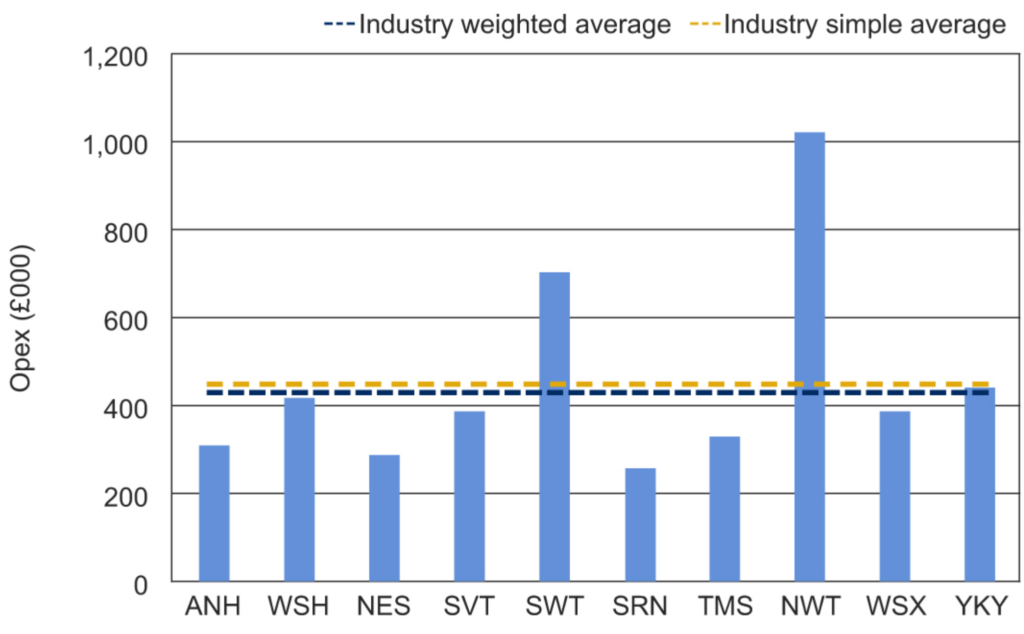
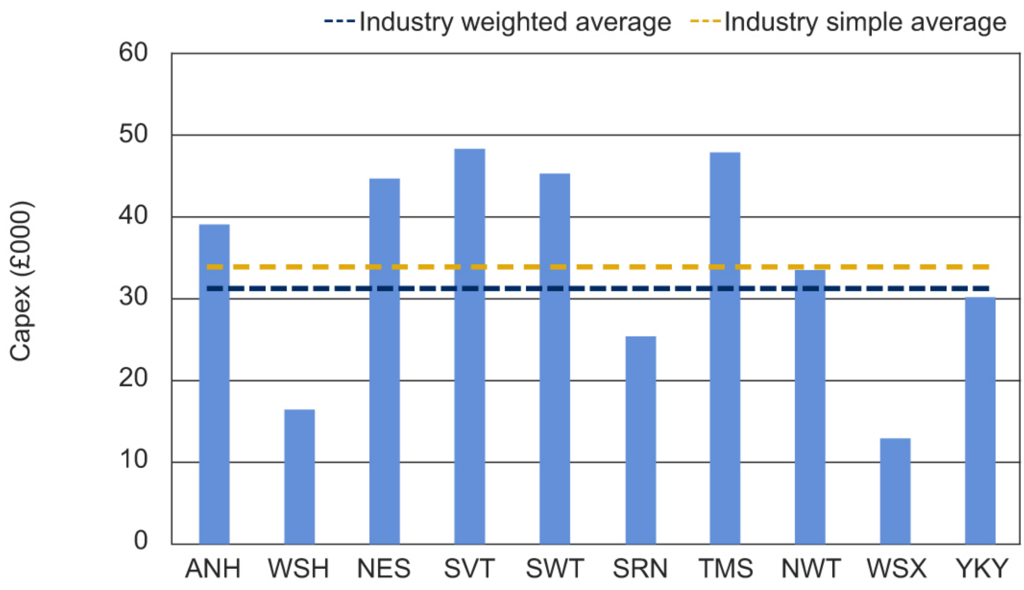


Figure 3 Total outturn capital expenditure (normalised by capex/opex ratio) per collapse



This suggests that we might be able to support a more stringent efficiency assumption than we applied at the draft determination.

Thames Water also argued that in assessing an appropriate catch-up adjustment we should consider other relevant factors, including the efficiency rate we applied at PR09 to the company's wastewater capital expenditure. We agree that this is a sensible cross-check and appropriate in the absence of more recent and better information But in the area of collapses, where we have more recent and relevant data from companies' August submissions, departure from the PR09 efficiency adjustments may be appropriate.

For continuing efficiency, our draft determination assumed that because companies are still at an early stage on the learning curve, there is likely to be at least as much scope for efficiency gains as we assumed for the AMP5 period for capital expenditure at PR09. Indeed, experience on the section 19 distribution mains rehabilitation programme in AMP2 and AMP3, for example, suggests that such new large-scale programmes can, in fact, offer greater scope for efficiency savings. In the early stages of that programme, the sector delivered significant capital cost efficiencies of about 6% a year on average (albeit there were significant departures from this industry average figure). This far outstripped efficiencies in other parts of the capital programme.

Bearing in mind the potential for future efficiencies, our judgement was that it is reasonable to adopt an estimate of further efficiency improvements of 2.0% a year in 2013-14 and 2014-15 for private sewer capital expenditures. We considered this to be a conservative assumption. As a result, our draft determination excluded a further £0.31 million of capital expenditure from the private sewers claim.

As with operating expenditure, Thames Water challenged our adjustment for capital expenditure continuing efficiencies. The company's objection to our £0.31 million reduction in capital costs due to the scope for future efficiency gains is based on its contention that its forecasts of operational activity in the remaining years of the AMP5 period are conservative. As a consequence, the on-going efficiency assumptions did not represent a reasonable balance of risk. While we questioned this assumption in our draft determination, we do not consider the issue of future activity levels to be pertinent to decisions on continuing efficiency adjustments. In the absence of any other arguments, we consider it reasonable and fair to retain the 2% per year efficiency adjustment applied in 2013-14 and 2014-15 in our draft determination into the final determination.

Taking all of the above into account, we consider it fair and reasonable to make an efficiency adjustment of £4.49 million to capital expenditure.

8.4 Our final assessment and what we have allowed in our final determination

Overall, we consider we have taken a balanced approach to assessing Thames Water's application. We have adjusted Thames Water's claim for capital expenditures to £21.61 million and that for operating expenditures to £27.67 million following our review of the additional evidence provided after our draft determination.

(£m)	Capex			Opex		
2012-13 price base	**5-yr total**	**% change**	**Cumulative % change**	**5-yr total**	**% change**	**Cumulative % change**
Thames Water application	**26.1**			**40.1**		
Attributability challenge				-1.53	-4%	
				38.57		-4%
Additionality challenge				-3.61	-9%	
				34.96		-13%
Substantiation challenge				-7.23	-18%	
				27.73		-31%
Efficiency challenge	-4.49	-17%		-0.06	0%	
Our view	**21.61**		**-17%**	**27.67**		**-31%**

The table below sets out the profile of expenditure.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view – opex	0.0	6.2	11.1	11.1	11.7	40.1
Our view – opex	0.0	3.9	7.9	8.0	8.0	27.7
Difference – opex	0.0	-2.3	-3.2	-3.1	-3.8	-12.5
Company view – capex	0.0	5.0	7.7	6.7	6.7	26.1
Our view – capex	0.0	4.5	6.4	5.4	5.3	21.6
Difference - capex	0.0	-0.5	-1.3	-1.3	-1.4	-4.5

Note:
Numbers may not add up due to rounding.

9. Sewer flooding – Thames Water's claim

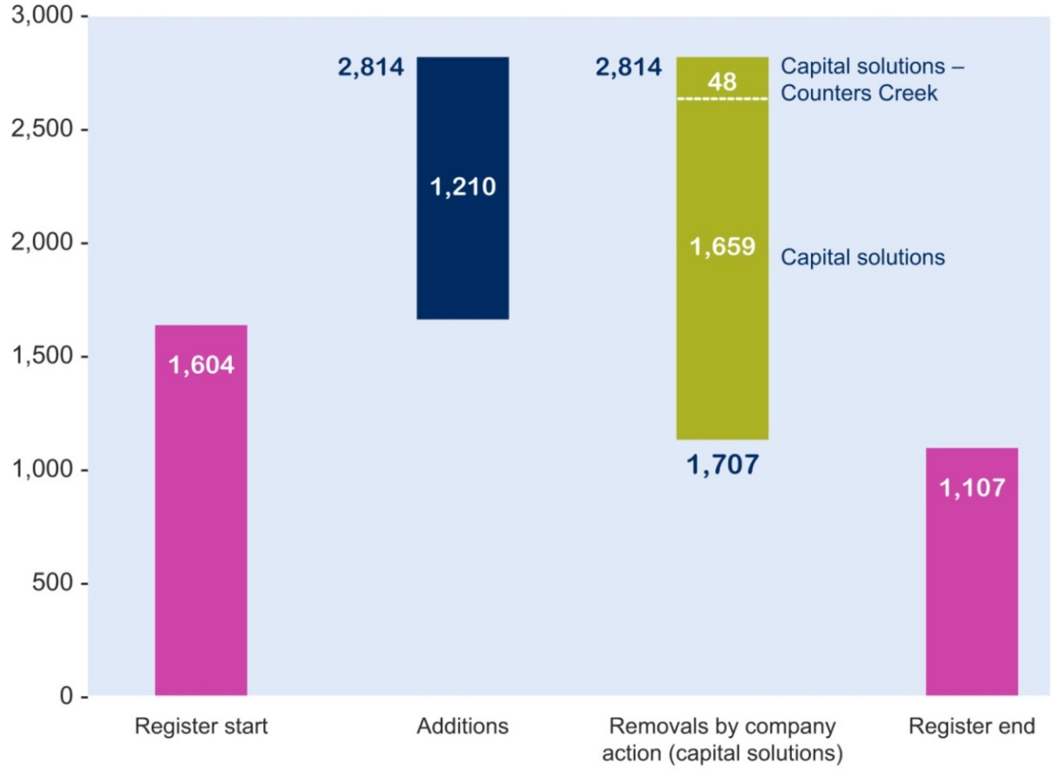
9.1 The application and our draft determination

Water companies are required to maintain registers of properties that have suffered internal sewer flooding and are at significant risk of suffering flooding. Companies reported progress on these risk registers on a regular basis as part of the June return up to June 2011, when we revised the manner in which companies report such information.

In simple terms, companies review and amend the registers either by adding new properties that have suffered sewer flooding or by removing properties due to company action. Typically, the removals made in this latter group are due to investment that the company has carried out, as part of investment programmes that were funded in price limits. RCC(3) allows funding in existing price limits to be recovered where a company either fails to achieve an output that was provided for at the last price review or that output is no longer required.

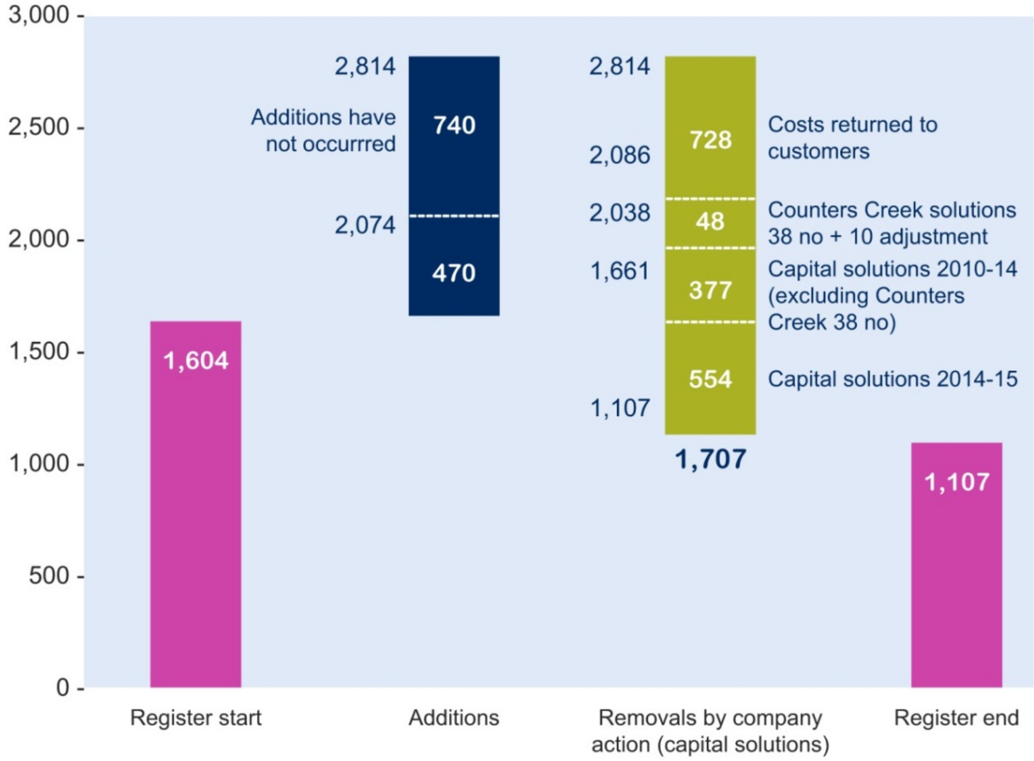
At PR09, Thames Water was funded to take action to enhance its sewerage system and remove 1,707 properties from its high-risk flooding register, delivering an improved service to customers. An important assumption in this was to take account of any properties that the company identified as needing to be added to its register during the price control period itself. The company had forecast that it would identify 1,848 properties suffering internal sewer flooding with a high risk of the flooding recurring. We challenged this high assumption and reduced it to 1,210 properties when making our final determinations for PR09 (see figure 4 below).

Figure 4 PR09 final determinations sewer flooding outputs and assumptions



Thames Water's IDoK application stated that some of the funded expenditure to remove these properties would no longer be required, due to a change to Ofwat reporting requirements in March 2010. It estimated that £100.7 million capital costs associated with removing 728 properties from the register could be returned to customers (see figure 5 below).

Figure 5 Thames Water's IDoK – proposed sewer flooding outputs and assumptions



Thames Water's IDoK application detailed how it had delivered 38 of the 48 properties forecast for the Counters Creek scheme using localised property pumping solutions, although it had delivered more than the overall number of such solutions to other customers. In total, it was forecasting to deliver 415 solutions by March 2014 (including 38 from Counters Creek) with the remaining 554 solutions forecast for 2014-15.

Our analysis did not support Thames Water's view that changes to the reporting requirements drove the changes to its sewer flooding registers.

Overall, we considered the reduction in the number of properties on the Thames Water register was driven by changes in the company's business processes and not the regulatory reporting requirements for the sector. These changes in the register bring it into line with Ofwat and industry reporting at PR09. As we disagreed with the RCC that brought about the large change in the forecast number of properties added to the register, we issued a Notice based on our own view of the relevant change. We set out further information on this in chapter 10.

9.2 Summary of new evidence and responses from stakeholders

In its response to our draft determination, Thames Water maintained that the sewer flooding item in their IDOK application is valid. It said that the RCC focuses on "the steps" rather than the "legal requirement or service standard". As the steps the company has taken and overall the purpose of investing remains the same it argues that its application has the same validity as our Notice.

The company also stated that it did not consider that we had explored adequately its assertion that the reporting requirements that existed on 31 March 2010 were different from those when price limits were set. It sets out that five other companies now forecast fewer additions to the high-risk sewer flooding registers than expected at the time of setting price limits. In particular, Southern Water expects to add 72 properties less, which is a change of 69%. Thames Water's reduction of 740 is a 61% reduction. In percentage terms, Southern Water's forecast reduction is higher than Thames Water's.

9.3 Our final assessment and what we have allowed in our final determination

It is our view that Thames Water has incorrectly described the nature of the RCC. But our concern with, and subsequent challenge of, the delivery of Thames Water's sewer flooding outputs in 2010-15 (discussed in chapter 10) would apply even if it was considered as part of Thames Water's Notice.

We agree we did not explain the changes of wording in the reporting requirements in our draft determination. This is because, while there were some minor changes to aid clarity, we do not agree that this affected how they are understood. The reporting requirements are common to all companies. If our change in wording had led to a significantly different interpretation, we would expect other companies to reflect this. We do not consider that the changes made led to significantly different interpretations by the other water companies and no other water company has commented on this issue in connection with our consultation.

Thames Water highlighted that Southern Water has experienced a reduction of 69%; greater than the 61% reduction for Thames Water. There are two points to consider in this respect.

First, to make a more accurate comparison we could also take into account 300 further properties on Thames Water's sewer flooding registers that it stated in exhibit TW122 that it submitted to us on 23 September 2013 that it has identified should be removed:

"…we have undertaken a review of our DG5 flooding register to check the level of evidence currently held for each property against the stringent criteria applied when removing a property from the register following completion of a scheme. This review identified that an additional 300 properties do not have sufficient evidence to meet these criteria. These properties will be removed from the register at the end of the current AMP period when we transition to our AMP6 flooding registers. The removal of these properties will not contribute to our net reduction target."

Our PR09 final determination forecast the number of properties added to the sewer flooding registers net of any properties that the company removes from the register because it has better information that the risk of flooding is lower than it previously thought. We are not aware of any other company that expects to remove more properties from the register in the way that Thames Water proposes to. Taking account of these 300 propeties, the company's estimate of the number of properties it will add to the register falls to a net figure of 170. This is a total reduction of 86% from the PR09 final determination assumption of 1,210 and is higher than Southern Water's reduction of 69%.

Second, percentages can sometimes by misleading – particularly those based on relatively low numbers. At an extreme, if our original assumption had been an addition of a single property which did not then occur, the reduction from the change in one property would be 100%. There is a significant difference in scale between the PR09 final determination assumptions for Thames Water (1,210) and Southern Water (105). It is more appropriate to compare the percentage change of Thames Water to that for all five companies that have reported a reduction, which we originally expected to add 1,278 properties to the register. These companies expect now to add 930 properties, which is a reduction of 27%.

Taken together these considerations indicate that the data in Thames Water's existing registers were not as robust as those for other companies, nor were the company forecasts of additional properties. We understand the company is working to address these issues and recognise the reasons for change.

But our remaining conclusion is that the evidence from the rest of the sector does not indicate a significant change in interpretation. Some companies have reported that they have added less properties to the register and other companies have reported the same or more. In total, the other nine sewerage companies have added a net figure of 254 **more** properties to the register than we assumed at PR09.

We used information provided by the Met Office to consider the impact weather may have had on the changes made by individual companies. This has not changed our conclusion.

These considerations were relevant to our view as to the primary reason for change, and support the RCC being based upon "changes in the company business processes" rather than as a result of "changes in reporting requirements" as Thames Water presented. Having considered additional evidence, our view remains the same.

So, we have not made an allowance for this item in our final determination based upon the relevant change of circumstance proposed by Thames Water. But we do assess avoided expenditures associated with the reduction in properties added to the register in chapter 10.

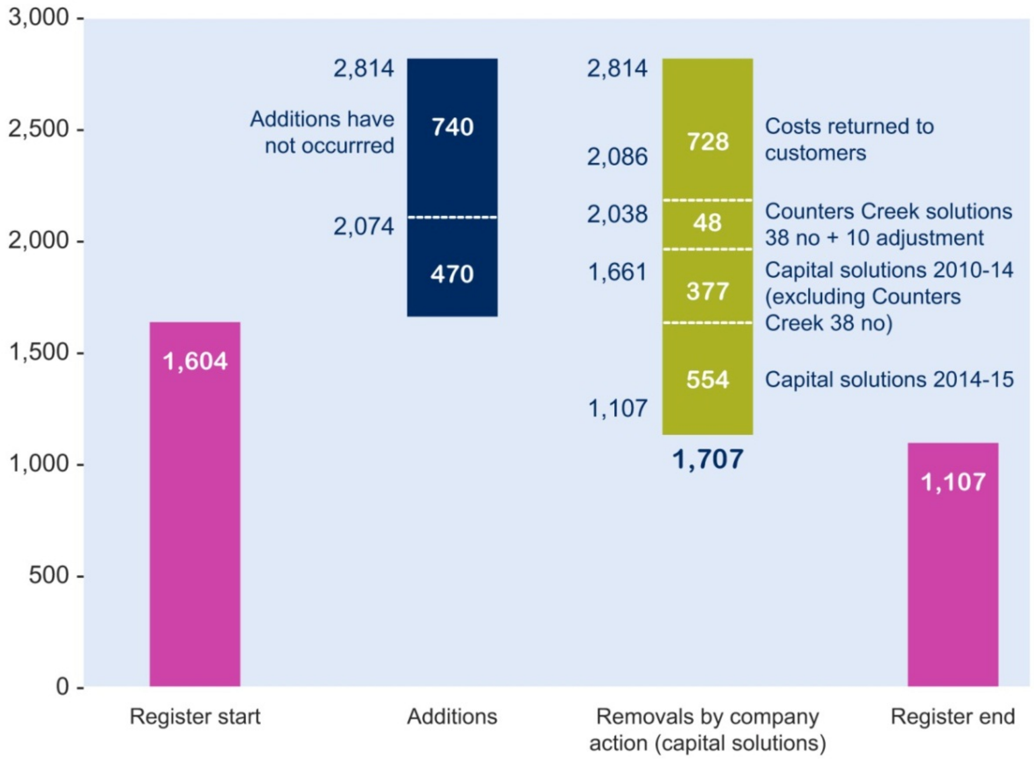
10. Sewer flooding – Ofwat's claim

10.1 The claim in our Notice and our draft determination

In its existing price limits, Thames Water was funded to take action to enhance its sewerage system and remove 1,707 properties from its high-risk flooding register, delivering an improved service to customers. An important assumption in this funding decision was to take account of any properties that Thames Water had identified as needing to be added to the register during the price control period. In its final business plan, Thames Water had forecast that it would identify 1,848 properties suffering internal sewer flooding with a high risk of the flooding recurring. We challenged this high assumption and reduced it to 1,210 properties when making our final determination at PR09.

Thames Water's application stated that the currently funded expenditure to remove some of these properties would no longer be required, due to a change of Ofwat reporting requirements in March 2010. It estimated that £100.7 million capital costs associated with removing 728 properties from the register could be returned to customers (see figure 6 below).

Figure 6 Thames Water IDoK – proposed sewer flooding outputs and assumptions



In chapter 9, we explained that we consider the reduction in the register is driven by changes in Thames Water's business processes, and not the sector regulatory reporting requirements. These changes bring the register into line with Ofwat and industry reporting at PR09. We nevertheless considered that costs associated with these differences within the sewer flooding investment programme should be returned to customers, and we therefore issued a Notice to allow these costs to be considered through the IDoK process based on our own view of the relevant change in circumstances.

Thames Water's application forecast it would remove 554 properties from the high-risk flooding register as a result of its actions in 2014-15. This forecast exceeds its expected delivery for the four previous years combined. In our draft determination, based on the track record and activity in the rest of the sector, we considered this forecast for 2014-15 activity to be too optimistic and we did not have confidence that it would be delivered.

In reviewing Thames Water's 2014-15 programme, we recognised that this includes a one-off scheme, Maida Vale, which itself delivers a large number of removals from the register. Thames Water has provided separate evidence on this scheme that leads us to conclude we are reasonably confident that the company can deliver the associated outputs by 2014-15 as forecast.

In order to set Thames Water's forecast of 554 properties in context, we compared and contrasted it to those for the other water and sewerage companies in England and Wales. Our judgement of an achievable estimate of properties efficiently removed from the register due to company action was for the company to deliver its scheme at Maida Vale, plus 50% of the total number of properties removed from the register in the first four years of its investment programme. This would still be a stretched investment target for Thames Water, as it would still require it to deliver a greater proportion of its programme in 2014-15 than any other water and sewerage company.

This reduced level of activity implies 378 properties removed from the register in 2014-15 due to company action, compared with the 554 forecast by the company, so that funded expenditure on a further 176 properties could be avoided and returned to customers.

In our draft determination, to estimate the efficient expenditure that could be avoided and returned to customers through adjusted price limits, we calculated unit costs for Thames Water using the unit cost that we assumed for it to deliver its full programme of 1,659 outputs in 2009 (excluding the 48 properties within the Counters Creek scheme). We assumed the same split between capital infrastructure costs (including sewers and tanks), non-infrastructure costs (structures constructed above the ground and pumping equipment) and operating costs (normally electricity for pumping) as in the original company business plan for PR09.

In our draft determination, we:

- calculated the avoided capital expenditure associated with the 728 properties Thames Water put forward in its own application to be £117.1 million. The avoided expenditure figure was16% higher than the amount the company proposed because we used a higher unit avoided cost. We also calculated an associated operating expenditure reduction of £1.17 million. Revising the 2014-15 target down by 176 properties, using the same unit cost, added a further £28.3 million compared with Thames Water's claim. We also calculated an associated operating expenditure reduction of £0.29 million; and
- calculated, in total, that £145.4 million of avoided funded expenditure should be returned to customers.

Our draft determination sought views, in particular, on our proposal to lower the target for removal of properties from the at risk register for the final year of the price control from that assumed in Thames Water's application in order to provide greater assurance that efficient expenditures could be carried out.

10.2 Summary of new evidence and responses from stakeholders

In its response Thames Water argued the following.

- We were not operating within the rules of the IDoK by adjusting the target number of removals from the register. It said RCC3 should only address a failure to meet targets.

- Our draft determination was wrong to assume that the company could not remove 904 properties from the registers. All but 16 properties of the 554 that Thames forecast to be delivered in 2014-15 had been 'let' to a delivery partner. The remainder will be 'let' on 14 November 2013 subject to internal governance.

- It had already optimised the relevant delivery programme around the 554 properties, so that reducing the programme to a lower number of properties would lead to it delivering outputs less efficiently.

- The unit rate we used in the draft determination was not consistent with the supplementary report we sent to Thames Water to support the PR09 final determination. It claimed this supplementary report specified two programmes and considered the costs of these two programmes separately. To be consistent with how we set price limits, we should use a unit rate for what Thames Water terms its 'enhancement programme' and a different unit rate for what it terms its 'growth programme'.

- As we had reduced the undelivered outputs to 728 properties, rather than 904 properties, we should proportionally also reduce our view of operating costs that can be returned to customers – that is from £1.5 million to £1.2 million.

In its response, CCWater noted that while customers identify sewer flooding alleviation as a top priority and support expenditure on sewer flooding alleviation schemes they want assurance that this expenditure represents value for money. It supported reducing the assumed number of outputs from that included in the company's application. It said it considered that PR14 was the appropriate route for determining the sewer flooding programme going forward.

10.3 Our final assessment and what we have allowed in our final determination

Following its response to our draft determination, we sought further clarification of the statements made by Thames Water in its response.

We reviewed the additional information provided in response to these follow-up queries, and considered the impact of this additional evidence on our draft determination decisions for the purpose of this final determination.

10.3.1 2014-15 outputs

We asked for comments on our proposal to assume that Thames Water was not able to meet the target of the net reduction of the sewer flooding register as part of our consultation. As discussed above, CCWater considered the balance between sewer flooding solutions not being delivered and costs being returned to customers. On balance, CCwater supported our proposal.

Thames Water argued that we should have confidence that these outputs will be delivered, because it has contractors in place to deliver them. We do not take a view on whether water companies should deliver activity by using directly employed staff or by using contractors. It is for companies to choose the most efficient form of delivery. Whichever route the company chooses, we do not think that this, in itself, provides evidence that the work will be efficiently delivered by a specified time. Contracts are not always delivered on time.

To allow us to better understand Thames Water's representation to out draft determination, we raised additional queries with the company. In its response to these queries, it stated that it has committed and has sufficient resource to deliver its 2014-15 programme and that the proposed removal of the additional 176 properties was unjustified in this context.

The company stated it is in fact planning to deliver an additional 16 properties (3%) and will be moving similarly skilled network resources from other areas of its investment programme to meet this need. But the company has not stated where these resources will come from and the consequences of any diversion of resources, particularly given the challenges it faces with regard to sewerage infrastructure serviceability.

Of the 580 outputs programmed for delivery in 2014-15, Thames Water informed us that:

- 30% are in construction;
- 35% are in detailed design; and
- a further 35% being in the early design stages.

This last 35% represents the high-risk group of properties that we consider may not be delivered, as there is more to do for properties in this group (representing 203 properties). This high-risk group is greater than the 176 properties we estimated at our draft determination, and in our view the significant number of properties where detailed design has not yet started supports our concerns that such a large increase in programme activity may not be delivered.

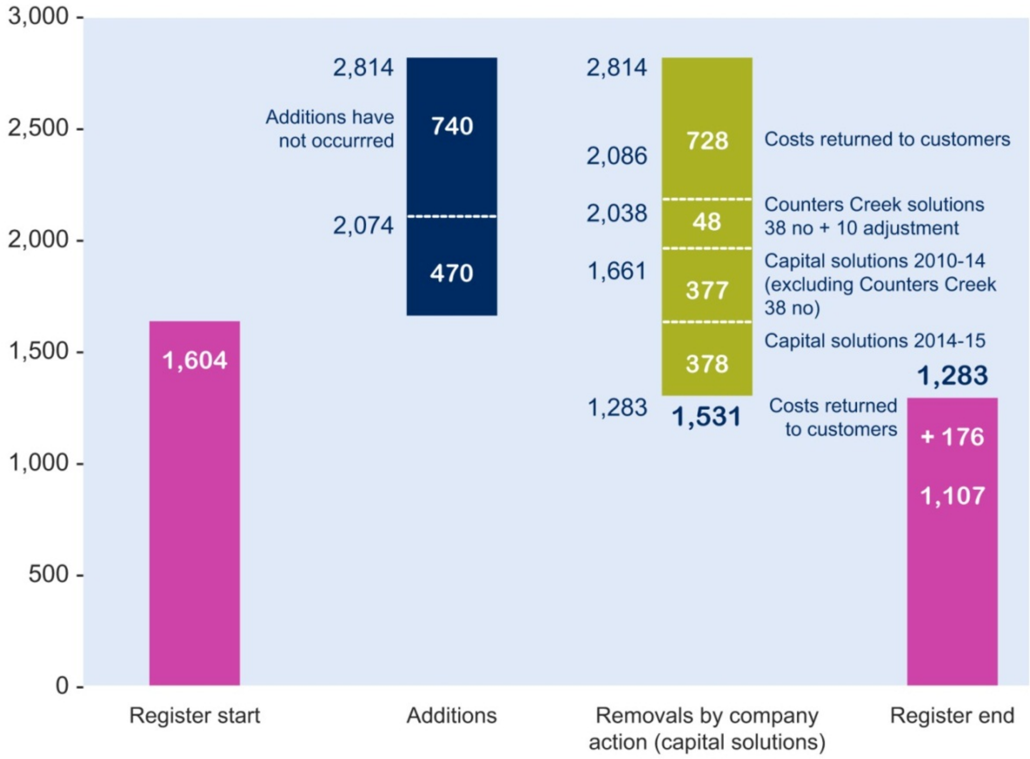
We note that all but one of the properties are associated with problems in the network that were known about before 2010. It is likely that one of the reasons that Thames Water has not yet developed solutions for these problems is because they are very difficult to resolve. Otherwise, the company would have chosen to progress with a solution earlier, especially as it has known for some time that it would fail to meet annual funded delivery levels. Thames Water confirmed this to us, for example, in a presentation dated 7 August 2012 and in a meeting with us on 12 June 2012. This increases our concerns with the difficulty of the programme suggested in Thames Water's application.

We continue to consider that the company is unlikely to deliver the 176 outputs identified in our draft determination.

Thames Water also argues that our proposal for adjusting its target output was outside the scope of RCC3 because it is changing the service standard. We do not agree that this is what we have done. We do not think, on balance and given the intervening changes and their consequences, that Thames Water will be able to take all the steps required to meet the outputs specified in our PR09 final determinations. These outputs were to remove 1,707 properties from the high-risk registers and to reduce the registers by 497. We expect that, if it is deliver efficiently in the rest of the period (which is the basis on which it was funded in existing price limits), Thames Water will miss these outputs and remove 803 properties from the high-risk registers and reduce the registers by 321. We have seen no further evidence that persuades us otherwise. So, we have decided to retain the output proposals which we set out in our draft determination in our final determination.

Returning money now to customers, rather than after 2015, is both in line with our statutory duties and in line with Thames Water's request to us to consider how we could reduce the bill impacts of its additional costs in 2014-15. We expect that Thames Water will address all sewer flooding issues in 2015-20, as it is reasonably practicable and efficient for it to do so, in line with its customers' priorities, and will therefore take this into account in its business plan.

Figure 7 Ofwat IDoK final determination – proposed sewer flooding assumptions



10.3.2 Unit cost assumptions

In its representation to our draft determination, Thames Water argued that at PR09 we used two different unit costs for sewer flooding properties for the growth and enhancement programme to determine the scale of funding assumed in price limits. To clarify, while we used these calculations to determine our overall assumptions for price limits, we only set one output for the total number of internal hydraulic flooding problems (2 in 10 and 1 in 10) to be solved by capital solutions. In the case of Thames Water, this output was defined as 1,707 properties.

Our supplementary report to Thames Water's 2009 final determination, we stated:

"One of the regulatory expectations for your total hydraulic sewer flooding programme (enhanced service levels, supply/demand balance and capital maintenance) is that the numbers of properties on the 2 in 10 and 1 in 10 registers should decrease, as set out above. Failure to deliver this output will mean that shortfall adjustments will be applied at the next review.

Failure to deliver the required number of capital solutions where no cost beneficial schemes are available, or you do not get the forecast number of additions will result in logging down."

We did not say that we would apply adjustments to individual elements.

The company also argued that because we allocated the expenditure for its 'growth programme' to addressing supply/demand issues, and the expenditure for its 'enhancement programme' to enhanced service levels, that this further indicates we should use two unit rates as part of our interim determination. We disagree. Expenditure has been allocated between different categories at previous price reviews, even for integrated work on one asset. For instance, the work on Deephams (considered below) is allocated between three different expenditure categories. We consider it is appropriate to consider the programme holistically. Thames Water itself noted the benefits of viewing its current programme holistically when responding to our proposal to adjust the 2014-15 output delivery target.

There are a number of reasons why we do not agree it is appropriate to use two unit rates. In general terms, we do not approve how a company delivers its outputs, as we want to encourage them to innovate and deliver outputs in new ways and for less (an important part of incentive based regulation). Thames Water's IDoK application proposed delivering 930 properties from the more expensive programme, but only one property from the less expensive programme, even though it has shown that there was a pool of properties from which it could have included candidates in this latter programme. For instance, it has added 77 new properties between 2010-11 and 2012-13 that it would have placed on its 'growth programme' and expects to add around a further 52 such properties in 2013-14 and 2014-15.

Companies normally remove the properties with the lowest-cost solutions from the registers first, as this allows them to gain the greatest benefit at the lowest cost for customers. But maximising the benefits of the sewer flooding programme in this way means that properties with the most expensive solutions will stay on the registers for a longer time with implications for the customers affected. While it is for the water company to balance these issues, we would expect many of the properties recently added to the register to have lower-cost solutions and to have been considered within a balanced economic and efficient programme.

The programme suggested by Thames Water indicates that the company is prioritising more expensive properties first, raising further concerns about whether the programme is economic and efficient.

As we have only set one output for the programme, we use a single unit rate to calculate the value of undelivered outputs in terms of avoided expenditures. Using this approach, the incentive to deliver whichever output is appropriate is maintained as in the earlier price review and companies are still encouraged to deliver economic and efficient programmes. If two unit rates were used, then this could create distortions whereby the company is encouraged to target expensive outputs rather than the cheaper programme. This would not further our duty to promote economy and efficiency.

Given the above we see no reason to amend our draft determination proposals in this area and consider that those proposals remain fair and reasonable on the balance of probabilities given the additional evidence presented, and hence should be used in our final determination. The expenditure implications are summarised below.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view – opex	0	0	0	0	0	0
Our view – opex	-0.2	-0.2	-0.3	-0.4	-0.4	-1.5
Difference – opex	-0.2	-0.2	-0.3	-0.4	-0.4	-1.5
Company view – capex[34]	1.8	3.3	-34.7	-35.1	-36.0	-100.7
Our view – capex	-16.6	-33.1	-38.2	-31.1	-26.4	-145.4
Difference – capex	-18.4	-36.4	-3.5	4.0	9.6	-44.7

[34] We discussed the company view of the appropriate adjustment in chapter 9. As discussed in chapters 9 and 10, we consider the reduction in the register is driven by changes in Thames Water's business processes, and not the industry regulatory reporting requirements. But we present the company's claimed figures here to allow comparison to be made against our assumptions for the draft determination.

11. Deephams – Ofwat's claim[35]

11.1 The claim in our notice and our draft determination

As we have done for all previous interim determinations, in reviewing Thames Water's application we considered whether there were any other significant funded expenditures where there was evidence that customers should no longer be funding the allowed sums in existing price limits in the current control period.

As part of this review, and consistent with recent advice from the Environment Agency, we identified a potential delay within the large Deephams sewage treatment works scheme, which may result in planned expenditures no longer being incurred in the current control period.

Although the consequences of such slippages would normally be considered in the next price review and reflected in bills paid by future customers (drawing on information in Thames Water's business plan), advice we received from the Environment Agency regarding the possibility of slippage of the Deephams timetable led us to consider the impact of this as part of the IDoK. As is the case with Thames Water's proposed treatment of avoided sewer flooding expenditures, we have done this in order to potentially reduce any bill impacts in 2014-15.

At PR09, we made allowance for £252 million in total for Thames Water to replace a large part of the Deephams sewage treatment works. The company planned to build the scheme on 'green belt' land over a period that spanned both the current control period and the next one. Of the £252 million, £88.4 million was included in price limits in 2010-15 for the earlier expenditures on the project, on the assumption that these were necessary to achieve the planned completion date of 31 March 2017.

At a meeting in May 2012, Thames Water provided us with an update on the progress of the Deephams scheme. It explained to us that it had concerns over the risks of achieving planning permission for construction on the Lower Hall site originally proposed. As a result, and due to the development of smaller-footprint technologies and innovative construction methods, it had chosen to pursue an alternative solution, of rebuilding the works on the existing site. But at that stage and depending on the precise solution chosen, the company advised that the scheme was unlikely to be delivered before 2019 and it could be as late as 2022.

[35] Values in this chapter are presented in 2012-13 prices unless otherwise stated.

The potential expenditure impacts of such a slippage were not covered in Thames Water's IDoK application. Accordingly, after we received the IDoK application – and given the earlier advice from the company – we asked the Environment Agency to confirm our own understanding of the updated completion timetable for the Deephams scheme. The Environment Agency confirmed to us in writing its understanding that the 2017 delivery date for the Deephams scheme was unlikely to be achievable due to planning delays – and that its latest discussions with the company also suggested a delivery date in 2020 (in line with Thames Water's earlier advice to us).

As a result of our understanding and this more recent view from the Environment Agency on likely timescales,we concluded that it was in customers' interests to include non-trivial effects of the consequent re-profiling of expenditure on the Deephams scheme in our determination of prices for 2014-15. So, we included this element in the Notice we issued to Thames Water on 13 September 2013.

In response to our requests for information in relation to this element of our Notice, Thames Water advised us that it had now developed plans to achieve the original delivery date of March 2017, although it did not expect planning permission for the revised scheme until later in 2015, and provided us with apparently conflicting information on the revised expenditure profile associated with its latest plans.

So, in our draft determination we said we were not convinced that the company had demonstrated that the expenditure for this scheme could now be delivered to the new assumed profile in an efficient and prudent manner. We assumed that £42 million of the funded capital expenditure assumed for the scheme in 2010-15 should now be returned to customers in the current control period, given the slippages that have already occurred and the impacts these will have on efficient delivery of the works going forward.

We and Thames Water remain committed to the efficient delivery of this scheme. So, we noted that we expect the company will still include the re-profiled costs associated with the delayed delivery of this scheme in its business plan for PR14. Our proposal was thus focused on the profile of funding for efficient expenditure provided by current versus future customers, rather than challenging the benefits of the scheme itself.

11.2 Summary of new evidence and responses from stakeholders

In response to our draft determination, Thames Water stated that:

- the Deephams project is on schedule to meet the relevant consent requirements on time and, subsequently, to deliver the additional non-statutory customer benefit of reduced odour from the site;
- its revised projected expenditure on the Deephams project in 2010-15 is sufficiently close to that allowed at PR09 that the difference arising from the revised scheme must fail the IDoK triviality test; and
- if Ofwat's proposed alternative expenditure profile were to be implemented, this would lead to delays creating both customer and environment detriment.

We also received correspondence from Enfield Council regarding Deephams sewage works stating that the Council's Overview and Scrutiny Committee has received a petition from Enfield's community with 2,239 signatures raising concern regarding odour nuisance at the site.

The committee did not feel that an adequate cost-benefit analysis had been carried out of the odour reductions achievable with modern technology by Thames Water. The drivers for the rebuild seemed to be more about water quality, than about the more direct human impact of the Deephams 'stink'. The Council has asked Thames Water to share its economic analyses with the local authorities affected, so that they can review the metrics used and the values ascribed to them.

The views expressed by Enfield Council placed odour as a high level concern for the Council and it obviously will be a key issue with regard to the granting of planning permission. This highlights that risks remain in the areas affected by the granting of planning permission for the scheme, and the associated achievability of the assumed milestone dates.

11.3 Our final assessment and what we have allowed in our final determination

As there was limited evidence presented by Thames Water to support statements in its response to our draft determination, we raised eight further queries with the company to seek:

- evidence supporting its view that the project is on schedule to deliver compliance with the new consent by 31 March 2017;
- clarity on when supporting contractual arrangements were put in place;
- evidence to link the project plans to the expenditure profiles presented by the company;
- an explanation of why expenditure profiles differ between TW Exhibits 130 and 137 (which were submitted in response to queries we raised in advance of the draft determination);
- contractual commitments around new consent compliance from 1 March 2017 and associated incentives;
- any analysis the company may have regarding the impact of reduced (that is, slower) expenditure on delivery dates;
- any analysis the company may have regarding the potential environmental and customer detriment that may result a revised expenditure profile up to 2015; and
- evidence of governance and sign-off of the response to these queries.

The company responded to these queries, and provided associated project plans and risk registers.

As part of our final determination, we have examined Thames Water's three claims. We discuss each of these in more detail below.

11.3.1 Is the Deephams project on schedule to meet the relevant consent requirements on time?

We have studied the various exhibits and supporting project plans and risk registers that the company provided alongside its main response to our queries and have considered these alongside the statements made by the company.

On the basis of this review, we still consider there to be a significant risk that the project will not meet its consent date of March 2017 if expenditures are to be incurred at efficient levels funded in existing price limits, due to a number of specific issues.

- Contractually, the project award has yet to happen although the two project plans show this was scheduled for the end of September 2013. At this time, the company has two alternative project plans dependent upon which partner is selected.

- It is not clear from the project documentation what activities are required to be completed before the consent requirements can be met. Given that the achievement of the consent is not a clearly identified milestone on either project plan, this does little to provide confidence that this particular milestone date would be achieved efficiently.

- Our assumption, based upon the project plans and evidence presented, is that process flow 'Stream A' of the treatment works must be completed and commissioned in order to comply with the consent. Stream A completion is due between January and March 2017 (it differs between the two plans submitted) with testing and commissioning running beyond the consent date on one of the project plans presented.

- There is limited or no headroom available within the project plan as presented to achieve this goal (at best this is only six weeks).

We had sought clarity from the company with regard to the penalties on the contractor should the consent date not be met and maintained. The company stated that these provisions were considered onerous and that damages were not capped, but has not provided evidence about the scale and magnitude of such provisions. Without further understanding of these incentives it is difficult to understand whether Thames Water's statements provide effective assurance that mechanisms are in place to mitigate delivery risks efficiently.

In reaching our conclusions on this issue, we consider that the burden of proof that the project will be delivered efficiently on time must lie with the company. Given the above, we are not convinced that the Deephams project is on schedule to meet the relevant consent standard and that there remains substantial risk that the company will not meet this output.

11.3.2 Is the actual spend on the Deephams project sufficiently close to that allowed at PR09 such that it must fail the IDoK triviality test?

Thames Water stated that expenditure within the period will still total £78 million compared with the £88.4 million that we assumed at our PR09 final determinations. We asked the company to demonstrate the relationship between its project plans and the expenditure profiles it had submitted to us, and we have examined the evidence Thames Water presented in response to our queries to its representation as provided in TW Exhibit 187.

The evidence the company provided shows that [redacted] of the £78 million it claims it will now spend in 2010-15 relates to the design and construction activities detailed within the contract and project plans (characterised by Thames Water as design, IFAS, tertiary treatment plant, B&C bolstering, Andritz screens, storm overflow and demolition of digesters). The remaining [redacted] detailed by the company relates to activities which are not specific (characterised by Thames Water as general works, management, general items, historic costs, OPC and risk, contribution to other projects and Thames overhead). While some of these costs and overheads will relate to the specific construction activity within the period, we do not consider that all of these costs are substantiated.

As stated above, it is for Thames Water to show that the costs it forecasts it will incur in 2010-15 are or will be prudently and economically incurred. Given that only a third of the costs proposed by Thames Water have been effectively substantiated, we are not convinced, on the balance of probabilities, that all the costs the company says it will incur in 2010-15 will be prudently and efficiently incurred on the Deephams project.

In our draft determination we estimated that £41.4 million should be returned to customers, based on our reassessment of the profile of costs for projects of this nature. Based on the evidence Thames Water has provided, we assess that costs appropriate to the Deephams project which are likely to be prudently and economically incurred are in the region of £45-50 million for 2010-15. This aligns with the estimate we had made at the time of our draft determination. On this basis, we see no reason or evidence to amend our judgement between our draft and final decisions.

We consider that because the company has not fully substantiated its expenditure for the period, that only £47 million should be funded for the Deephams project between 2010-15. Based upon the information provided by Thames Water, and on the balance of probabilities, we consider that this is sufficient for the company to continue with its programme of delivery for the early works and full rebuild design elements.

The remaining £41.4 million funded at PR09 final determinations should be returned to customers through the IDoK process. But relevant efficient expenditures can still be remunerated by future customers in prices limits, through the established mechanisms in the forthcoming price review, whereby companies can include schemes where expenditures span price limits periods in their business plans.

The £47 million assumed to be funded reflects the substantiated and reasonably attributable costs for the project associated with the construction and detailed design activities set out in the evidence provided, some of which we have only very recently received in response to follow-up queries. We consider this supports the construction activities associated with the construction partner, and reasonably attributable overheads associated with this activity.

Our challenge relates instead to the Thames Water costs that remain unsubstantiated in the evidence provided. Generally, these are costs outside the relationship with the contract partner and reflect the management of the project internally by Thames Water. It is these costs we are concerned about –both with regard to their economy and efficiency, and whether they are clearly attributable to the Deephams project.

11.3.3 If Ofwat's proposed spend profile were to be implemented, would it lead to both customer and environment detriment?

We asked Thames Water to evidence and quantify its claims of customer and environmental detriment associated with the delay it said would occur in the absence of funding being provided by existing price limits. The company stated that the funding profile set out at our draft determination would delay the project by eight to nine months and that there would be subsequent impact on properties close to the works from odour. It has not set out any analysis to demonstrate this position or carried out any cost-benefit analysis to quantify the claimed detriment. As noted above, we are aware that Enfield Council has sought such analysis from the company.

Given our assessment of costs we do not consider that the funding set out in our draft and now final determinations will result in any further delay of the delivery of the scheme, as Thames Water's proposals for early works and full rebuild design elements would remainfully funded. So, we consider that there will be no detriment to the environment or customers as a result of this determination.

Like Enfield Council, we remain concerned that Thames Water has not fully assessed the costs and benefits with relation to odour control at the works or fully considered these as part of its plan. We expect the company will have considered these issues as part of its business plan submission for 2015-20, due to be submitted to Ofwat on 2 December 2013, following relevant customer engagement.

While we have assumed a reduction in 2010-15 expenditure for the efficient delivery of the Deephams scheme, we remain committed to the delivery of this project. We expect that the expenditure returned to customers in 2010-15 will still need to be incurred in for delivery of the Deephams scheme in 2015-20 and so would expect that relevant funding proposals would be included in Thames Water's business plan for PR14.

Given the substantive changes to the timing of Deephams project from the assumptions originally set out at PR09, and the issues highlighted through this IDoK, we consider it appropriate that the company provides relevant information on this project in its business plan as an input to the PR14 price review. The implications of our final determination for allowed expenditure relevant to the IDoK are set out below.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view						0.0
Our view	-2.4	-0.3	0.5	-6.8	-32.3	-41.4
Difference	-2.4	-0.3	0.5	-6.8	-32.3	-41.4

12. Serviceability – Ofwat's claim

12.1 The claim in our notice and our draft determination

Serviceability assessments reflect the ability of company assets to deliver an expected level of service to consumers and to the environment, both now and into the future.

The serviceability assessment process currently operates within our wider regulatory framework applied to existing price limits, which currently uses defined measures of success, reference levels and control limits across four sub-service categories:

- water infrastructure;
- water non-infrastructure;
- sewerage infrastructure; and
- sewerage non-infrastructure.

These measures were defined for the sector at PR09 and associated delivery targets agreed by companies as part of the price setting process at that time.

At PR09, we set out our expectation that all companies should achieve and maintain stable serviceability, as assessed through this framework, during 2010-15. We explained that if companies did not achieve stable serviceability across the sub-service categories, we would apply reductions in allowed prices at the next price review through 'shortfalling adjustments'. This means that we would make a downward adjustment to the RCV that was proportionate to detriment to customers and hence the level of any service failure, which would lower prices to customers in future periods.

Using this agreed framework, Thames Water assessed the performance of its sewerage infrastructure as being marginal in 2012-13, so that it failed the relevant output targets for that year.

The serviceability assessment for the wider sewerage infrastructure sub-service is measured according to performance measures across six specific individual areas governed by their own 'control limits'. For stable serviceability, we require that the company's performance to be within acceptable ranges around the reference level. For two of these specific measures in the sewerage infrastructure sub-service – 'flooding other causes' and 'pollution incidents' – Thames Water's performance was worse than the permitted upper control limit in 2012-13. It was this under-performance against the control limits in these two specific areas that led to the company's overall output failure (that is, the marginal assessment which it made for the sewerage infrastructure subservice overall) in 2012-13.

We considered whether this performance failure, and a less important breach of only one control limit in 2011-12, should lead to an earlier price limits adjustment affecting 2014-15 customers' bills (as opposed to carrying out this assessment at PR14 and reflecting any consequences in future bills), given the increases in 2014-15 bills that Thames Water proposed in its application. The company invited us to consider how to spread the impacts of different changes in circumstances over different price limits periods. As the potential adjustment to 2014-15 prices was non-trivial, we included it in the Notice we issued to Thames Water on 13 September 2013.

In our draft determination, we assumed funding in existing price limits of £24.4 million capital expenditure should be returned to customers in light of the performance of Thames Water's sewerage infrastructure assets. On the basis of the information provided in response to our queries, we could not be certain that the company's expenditure in relation to the areas of performance failure was above, in line with, or below the levels required to ensure delivery of the specific outputs concerned, which was funded in setting price limits at PR09. As the company had reported that its performance was below the level we expected and funded it to achieve, we decided that we should include a proposed reduction in the amount allowed in customers' bills to reflect this performance shortfall.

Thames Water has now increased expenditure levels in the overall sub-service areas, and has advised us that it is seeking to return its serviceability performance for sewerage infrastructure to stable in 2013-14 and 2014-15. We will review the success of the company's actions in relation to these years in our assessment for the next price review, in the way we propose to do for all companies.

12.2 Summary of new evidence and responses from stakeholders

In responding to our draft determination, Thames Water said that we should have stated the performance of the sewerage infrastructure service in 2011-12 as stable and not marginal.

The company also argued that the scale of the proposed shortfall within our draft determination was disproportionate, contrasting it to shortfalls we applied at the last price review to other water companies. It said these shortfalls were between £10 million and £15 million in value and that the maximum value of shortfall applied was 8.5% of sub-service assumptions at the 2004 price review final determinations. It said our draft determination applied 11.3% of PR09 final determination assumptions. It said this level of shortfall was therefore disproportionate, extreme and materially above values applied at the previous price review. Although it did not set out the exact nature of the calculation concerned, Thames Water also proposed its own view of an appropriate shortfall for the period 2010-11 and 2012-13. It suggested £5.4 million, with a view of £9.7 million for the 2010-15 period in total.

In its response to the consultation CCWater stated:

"The maintenance of sewerage infrastructure is a crucial component of a sewerage undertaker's investment activity. Funding is provided to ensure assets are appropriately maintained and a stable level of serviceability achieved. Under performance in this area should not be tolerated. We therefore support Ofwat's view that the identified underspend should be returned to customers."

12.3 Our final assessment and what we have allowed in our final determination

We reviewed all the information Thames Water submitted to us and based on this drew the following conclusions.

- We understand and recognise Thames Water's position on 2011-12 serviceability. Although an upper control was breached, failure at the overall sub-service level did not occur, and consequently we accept the argument put forward that a shortfall would be inconsistent with the approach we had signalled for the next price review. This related to £2 million of our overall proposal in this area in the draft determination.

- We still consider the value of the remaining proposed shortfall for the failure at the overall sub-service level in 2012-13 in our draft determination (£22.4 million) to be broadly proportionate. The comparison to previous shortfalls, made by Thames Water in its response, was not on a like for like basis. We defined more clearly the output targets companies had to achieve during 2010-15, with our targets covering four years rather than the single year used for 2005-10. This renders comparison very difficult, as any shortfall applied will be across four years, albeit remaining consistent with the position that we set out in RD15/06 that the maximum shortfall should not exceed 50% of the expected expenditure in the sub-service for the 2010-15 period.

- We note that Thames Water suggested "the correct calculation of the shortfall" was £5.4 million for the period 2010-11 to 2012-13 and £9.7 million for the 2010-15 period in total. Although we understand the basis and principles that Thames Water used to derive its estimate, we have not seen the detailed calculations and do not consider the estimate to appropriately represent the impact on customers of the level of failure concerned.

In making our final determination, we considered the fact that, despite requests, Thames Water could not provide us with the level of expenditures undertaken in the specific activity areas where the serviceability failures had occurred. This meant that we had to make a judgement on our proposed shortfall in the draft determination in absence of relevant supporting information on expenditures from the company.

In addition to this, we also considered the fact that such shortfalls will be addressed at PR14 and so form part of the business plans submitted by all companies in December this year. This should include the latest information from each company on any serviceability failures and their proposed remedies for customers, through shortfalls, for the failures. Access to this wider set of information will help to reduce the judgments we would otherwise have to determine a shortfall level for a single year for Thames Water as part of the IDoK, and thereby help to address the concerns over the proportionality of such an individual judgement raised by the company.

We have explained that, as part of our methodology for setting price limits, where we consider that companies have not properly reflected performance failures through proposing appropriate shortfalls within their business plans, we will take this into account as part of our risk-based review of the business plans concerned. In this way, customers of all companies, including Thames Water, will continue to receive compensation for under-delivery in future price limits, in the way we set out in setting existing price limits.

We took into account the representations we received, the difficulties of establishing the specific expenditure undertaken by the company to recover stable serviceability, which in turn make it more difficult to establish an appropriate course of regulatory action. Also, given the fact that customerswill be protected through the forthcoming price review, we have therefore decided not to include a claim for serviceability failure in our final determination.

13. Additional items

In its application, Thames Water referred to four items which it claimed qualified for the interim determination process, but which it had not included in its submitted claim for price increases. It told us that "items have been referred to in our application, but not included in our claim as part of achieving an appropriate balance with customers". But it also said in its application that if we were minded to determine that not all of the items in the company's proposal could be included as part of the IDoK, we should then consider these items in our determination. These items were expenditure related to:

- Thames Tideway Tunnel non-land costs (£258.5 million capital expenditure);
- Counters Creek (£25.8 million capital expenditure);
- Shaft G (£35.2 million capital expenditure) and

CRC charges (£35.0 million operating expenditure). In its response to our draft determination, Thames Water argued we should have taken these items into account. In total, the additional expenditures covered by these items amount to an additional £320 million capital expenditure and £35 million operating expenditure that the company wanted us to include in our final determination, equivalent to a bill impact of around £15.

Our view was that we did not consider that the basis on which the company included a reference to these items in its application was reasonable, or that the items would necessarily qualify for an IDoK (even to the extent we have had sufficient evidence to allow us to reach a view on the efficient expenditure incurred).

In its response to our draft determination, the company did not provide any further details to substantiate the efficiency with which these additional expenditures were being incurred, such that it would not have been practical then for us to review these expenditures in the time available and adequately safeguard the interests of customers.

In addition to the lack of relevant evidence being made available, we do not think these items should be considered as being eligible for our determination. Our reasoning for this conclusion in relation to each item is set out below.

13.1 Thames Tideway Tunnel 'non-land' costs

Thames Water claimed that additional costs of £259 million arising from Thames Tideway qualify under RCC1 because the wording of the licence does not necessitate a 'change' in legal requirements. It says that the relevant legal requirement is section 94(1) of the WIA91. The company argued that the wording of the licence allows RCC1 to be triggered by situations where an undertaker is not funded at the last price review.

We disagree with Thames Water's legal interpretation. RCC(1) covers **changes** of circumstance that involve "the **application** to the Appointee of any legal requirement" (that is, a new legal requirement) and "any change to any legal requirement which applies to the Appointee". For these purposes, the term "legal requirement" is defined in paragraph 13.2 of condition B. Thames Water has not identified any new or changed legal requirement (and we are not aware of any relevant new or changed legal requirement). So, this item does not fall within the definition of RCC(1).

We put an explicit notified item in place for Thames Tideway Tunnel land costs at PR09 for Thames Water alone, following discussion with the company. Had we or Thames Water considered at PR09 that these costs were already covered by RCC(1) for IDoK purposes, the notified item would not have been necessary. The specific PR09 notified item for the Thames Tideway Tunnel related only to the purchase price and transaction costs for land acquisitions above amounts included in price limits. As the notified item was specifically for land acquisitions, non-land related Thames Tideway Tunnel costs could not justifiably be considered under this notified item. We set out our views on this issue to Thames on 14 January 2013.

13.2 Counters Creek

Thames Water argued Counters Creek would qualify for an IDoK under RCC(1) because the increased sewerage outputs funded in existing price limits from PR09 crystallised an obligation to undertake specific works under section 94(1) of the WIA91.

Our view is that Counters Creek instead relates to a customer-driven change in the number of sewer flooding outputs to be delivered by the company in 2010-15. Items are only eligible for inclusion in an IDoK under RCC(1) if a new or changed legal requirement (as defined in Condition B) applies to the Appointee. Thames Water has not identified any new or changed legal requirement (and we are not aware of any relevant new or changed legal requirement). So, in our view, this item does not fall within the definition of RCC(1).

13.3 'Shaft G'

Thames Water argued that this item is covered by the change protocol and so also meets the criteria for RCC(1). The company's change protocol application (January 2013) requested a variation to the funding of its Lee Tunnel project costs, by moving a shaft from the Thames Tideway Tunnel project to the Lee Tunnel project, bringing forward construction of the shaft to the current price control period. The application was made in order to produce environmental benefits (as it will reduce the time the Lee Tunnel will be out of operation while it is connected to the Thames Tideway Tunnel).

But costs that qualify for the change protocol do not automatically qualify for an IDoK under RCC(1). Even if costs are agreed for the change protocol outside of the licence, they still need to be eligible under the licence to qualify for an IDoK. As the Environment Agency postponed the completion date for the Lee Tunnel on the National Environment Programme to 31 December 2015, to accommodate the proposed variation, Thames Water asked us whether the variation would be eligible for inclusion in an IDoK under a RCC. We have previously discussed this issue with the company, and confirmed that the variation was **not** eligible for inclusion in an IDoK under a RCC. We wrote to Thames Water on 8 February 2013 to confirm that the cost will instead be logged up at PR14.

13.4 Carbon reduction commitment (CRC)

Thames Water claimed this item qualifies under RCC(1) as it must pay Government initial grant emissions allowances under the CRC Efficiency Scheme (Allocation of Allowances for Payment) Regulations 2012. These came into force in May 2012 and required Thames Water, as a participant in the scheme, to pay government for the initial grant of emissions allowances. Thames Water considers AMP5 CRC costs will comprise £34.9 million in outturn prices and so are sufficient to qualify for the purposes of the IDoK.

To qualify under RCC(1), legislation must apply to Thames Water "in its capacity as a water and sewerage undertaker". The company has not demonstrated this, in particular as CRC is payable by a wide range of sectors and companies. This is consistent with the approach we have adopted in previous interim determinations. For example, we disallowed an IDoK claim by South West Water in 2001 based on the obligation to pay the Climate Change Levy because it was a general fiscal obligation.

14. Overall conclusions

We consider that any decision by a company to request an increase in existing price limits is one that should not be taken lightly. Where a company has requested an increase in price limits for its customers, we expect the company to provide all relevant evidence that its claims are legitimate and that the costs they are claiming are efficient. In demonstrating this to us, the company should be expected to provide credible evidence in a timely manner and in sufficient detail to enable us to make our decisions.

We closely scrutinised Thames Water's application and its response to our draft determination with this in mind. We considered each item on its own merits, using the information available to us at the time, including evidence from third parties. We have allowed for costs for relevant items where the company has provided sufficient credible evidence to demonstrate that costs result from prudent actions and are being, or planned to be, incurred in an efficient way.

Our conclusion is that Thames Water's application does not pass the materiality threshold defined in condition B of Thames Water's licence, which is that the total value of allowable costs does not exceed 10% of appointed business turnover. On this basis, our final determination is that the existing price limits for 2014-15 should not be adjusted. The price limit for 2014-15 will remain as set at PR09 (that is, an increase of 1.4% before inflation).

This is based upon the following.

- Our revised assumptions on bad debt and Environment Agency charges mean that in present value terms these elements of the total claim are below the required level of 2% for non-triviality, under the rules of condition B. This means these items have not been taken forward for the calculation of aggregate materiality.

- For those remaining items that pass the triviality test we calculate the overall net materiality to be 7.2% of appointed business turnover.

We used the published IDoK model to calculate whether the items were trivial or not, on the same basis as adapted by Thames Water in submitting its application, and, for those that were 'non-trivial', whether, in aggregate, they exceeded the materiality threshold of 10% of appointed business turnover required before we can make an IDoK of changes to price limits. The table below summarises this calculation.

To note, irrespective of this final determination of Thames Water's application, the regulatory framework allows for relevant capital expenditure efficiently incurred in the existing price control period to be recovered from future customers via established processes, as part of the forthcoming price review. These arrangements remain available to water companies including Thames Water, to recover qualifying capital expenditures (such as, for example, those relating to the transfer of private sewers, and in the case of Thames Water, the expenditures it has made on land for the Thames Tideway scheme).

Finally, we also note that we are still examining the possibility of providing Thames Water with a notice in relation to our intention to determine an adjustment to 2014-15 bills in relation to the substantial favourable effects arising from separate changes of circumstances in the current control period. We will continue that examination separately, but with regard to the need to confirm any consequences for customers' bills on a timely basis, as set out in IB 20/13. This consideration does not apply to other companies, where no changes to existing price limits for 2014-15 have been sought or are anticipated.

Item	Triviality water (NPV £m)	Triviality sewerage (NPV £m)	Triviality water (%)	Triviality sewerage (%)	Pass triviality test Y/N	Materiality (NPV £m)	Materiality contribution (%)
Thames Tideway Tunnel land acquisition		269.831		30.4	Y	269.831	15.3
Proceeds from land disposals	-45.097		-2.6		Y	-45.097	-2.6
Bad debt and debt management costs	23.866		1.4		N		0.0
Transfer of private sewers,		105.951		11.9	Y	105.951	6.0
Increases in the Environmental Improvement Unit Charge	11.125		1.3		N		0.0
Sewer flooding		-163.595		-18.4	Y	-163.595	-9.3
Deephams		-40.285		-4.5	Y	-40.285	-2.3
Total for purposes of calculating materiality						**126.806**	**7.2%**

Appendix 1: Summary of Thames Water's concerns on our draft determination

Thames Water claim	Ofwat position
The draft determination is not in customers best interests. Thames Water is working within the regulatory contract put in place at PR09 and recovering money it is due. Ofwat's draft determination increases regulatory uncertainty. Consultants for Thames Water state that increasing regulatory uncertainty can increase the cost of capital by 0.5 to 1.0%	Our decisions are made on the balance of probabilities, and in cases where a price increase is initiated by the company, and where there are material consequences for customers, the burden of proof falls on the company to establish its case and we expect it to provide strong evidence. In reaching our decisions, we have followed the rules set out in Condition B of the licence and had regard to our statutory duties. It is important that we ensure that only the costs that are properly evidenced and supported as being incurred in an efficient and prudent manner are allowed as it is not in customers' best interests to be funding inefficient costs, nor is it consistent with the proper carrying out of a company's functions or the promotion of economy and efficiency There is no evidence that our approach has increased uncertainty. The interim determination process is rarely used and as a result we need to consider how the rules put in place apply in the particular circumstances of each application. It has not been unusual, that in assessing an interim determination application in accordance with our duties, for our view to differ from a company's. There is evidence of this in previous applications and this does not mean that the process is uncertain. External commentary on our draft determination of the existing Thames Water application does not suggest that the decision has increased regulatory uncertainty.
Ofwat failed to meet the 14-day deadline to submit counter-items for Thames Water's IDoK application, and its notice of 13 September 2013 thus constitutes a separate	We do not agree with Thames Water's interpretation of the condition of the licence. We discuss this issue further in section 2.3. It should be noted that, even if Thames Water is correct that the items in both Notices should be considered separately and that the sewer flooding item should be considered as part of Thames Water's Notice (see

stand alone IDoK which cannot be aggregated to Thames Water's application for the purposes of the materiality assessment	chapter 9), the outcome of Ofwat's determination would be the same (that is, no adjustment to price limits as Thames Water's application would still fail to meet the materiality threshold).
Ofwat has failed to allow sufficient time for customers, stakeholders and Thames Water to respond adequately to the draft IDoK determination.	We set out our proposed timeline well in advance and discussed this with Thames Water. The company did not raise any concerns with our proposed timetable in advance. There is no specific legal requirement on us to publish a draft determination, although we do publish one because it is good process. The level of response we received to the consultation is similar to previous IDoKs with longer consultation periods (these responses are available on our website). Publicity at the time of the submission of the application meant we had received more than 200 contacts from customers prior to the draft determination. Thames Water also argued that we had prior knowledge of its application due to engagement ahead of its application being submitted so should have been able to allow more time for consultation. While we were aware of some of the elements the company proposed to include, we could not form a view on the robustness of the evidence supporting its case until we saw the application. Equally we could not comment on whether expenditure was efficiently incurred or whether all the costs included in the submission were directly attributable to relevant items.
Ofwat changed the scope of Thames Water's IDoK without considering the additional four upward items mentioned in its application (Counters Creek, Shaft G, CRC charges and TTT non-land costs)	We did not consider that the basis on which the company included these items in its application was reasonable or that the items would necessarily qualify for an IDoK (even were we to have had sufficient evidence to allow us to reach a view on all of them). See chapter 13 for further details. We are not aware of the company referring to these items as a formal request to increase price limits in public when discussing the application.

Ofwat has incorrectly rejected Thames Water's downwards item in respect of AMP5 sewer flooding	We disagree. The reduction in the register was driven by changes in Thames Water's business processes rather than industry reporting requirements as claimed by Thames Water. So, we included a claim in our Notice based on the appropriate trigger for the RCC. But our concern with, and subsequent challenge of, the delivery of Thames Water's sewer flooding outputs in 2010-15 (discussed in chapter 10) would apply even if it was considered as part of Thames Water's Notice.
The serviceability item does not meet the legal requirements to be included in an IDoK as an RCC (and Ofwat has not provided any evidence that it can meet the requirements) If calculated correctly, the serviceability item would not pass the triviality assessment.	We disagree. But because Thames Water could not provide the actual expenditure in the specific areas of performance failure and because we can take these costs into account at PR14, we have not included this in our final determination. See chapter 12 for details.
Ofwat's conclusions were based on extreme assumptions or factual errors.	Our decisions for the draft determination were based on the information we had available to us at the time. In some cases, we had to make our own assumptions and substitute our own analysis for the company's. This has been the case where, for example, we have not been convinced by the company's arguments or there has been a lack of explanation or the gaps in the evidence available. This was because the company did not explain, or not provide sufficient supporting evidence, for us to be sure whether its own numbers should stand to support the company's case. In such circumstances, it was necessary to make reasonable assumptions of our own. In fact, one of the reasons for publishing a draft determination is to highlight those areas where we have issues and concerns, and how we dealt with them in reaching initial views. The consultation process then provides respondents with an opportunity to comment on our assumptions and provide further supporting evidence. We have considered each instance where Thames Water stated that we used 'extreme assumptions' or made factual errors in our draft determination. We have updated and

	corrected our analysis and our thinking where the company has provided new information on factual accuracy, or presented a convincing case, but we do not accept that our draft determination originally included 'extreme' assumptions.

Appendix 2: Letter from the Environment Agency on the Environmental Improvement Unit Charge (EIUC) and RSA schemes within PR14

Environment Agency

Cathryn Ross
Chief Executive
Ofwat
Centre City Tower
7 Hill Street
Birmingham
B5 4UA

Our ref: PL/pc/4929

Date: 6 November 2013

Dear Cathryn

Environmental Improvement Unit Charge (EIUC) and RSA schemes within PR14

Thank you for your letter of 31 October 2013, confirming that all cost effective solutions to water company unsustainable abstractions should be considered as part of the PR14 price review process.

I welcome your clarification and confirmation that sustainable abstraction proposals, including for the rivers Axford, Og, Mimram, Beane, Overwater and Wyre Calder (Barnacre), can be considered as part of the transition investment mechanism. We would intend that water companies should start to address sustainability issues as a minimum on these six schemes in 2014/15 and that they should plan on this basis.

It would be helpful to understand your intentions and timescales for communicating these clarifications to water companies so that they can include them in their business plans.

On the basis of your clarifications and in the expectation that the Water Bill leads to the removal of water company rights to compensation, I can confirm that we currently do not anticipate charging water companies for EIUC for quarter 4 of 2013/14 or for 2014/15. Should the Water Bill clause not be enacted, we will consider reinstatement of EIUC charges.

Yours sincerely

Dr Paul Leinster CBE
Chief Executive

Environment Agency
Horizon House, Deanery Road, Bristol, BS1 5AH
Tel: 0117 934 5137
www.environment-agency.gov.uk

Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA

Phone: 0121 644 7500
Fax: 0121 644 7533
Website: www.ofwat.gov.uk
Email: mailbox@ofwat.gsi.gov.uk
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