December 2019

PR19 final determinations

PR19 final determinations: Thames Water final determination

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About this document

This document supports the 'Notification of the final determination of price controls for Thames Water' and sets out further details about the final determination price control, service and incentive package for Thames Water for 2020 to 2025. All figures in this document are in 2017-18 prices except where otherwise stated.

The final determination documentation sets out:

- the outcomes for Thames Water to deliver;
- the allowed revenue that Thames Water can recover from its customers; and
- how we have determined allowed revenues based on our calculation of efficient costs and the allowed return on capital.

This final determination is in accordance with our PR19 methodology (as updated), our statutory duties[1] and the UK Government's statement of strategic priorities and objectives for Ofwat[2]. We have also had regard to the principles of best regulatory practice, including the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted.

Our final determination carefully considers all of the representations we received from companies and stakeholders on our draft determination and takes account of the most up-to-date information available where appropriate. Where appropriate, we explicitly set out our response to points and issues raised by respondents. Where information was provided late and we have not been able to take full account of this in the final determination, this is explicitly stated.

There are eight appendices to this document on cost efficiency, outcomes performance, past delivery, allowed revenue and, where relevant, additional information. For all documents related to the Thames Water final determination, please see the final determinations webpage. Where we reference other documents related to our final determinations we do not include the 'PR19 final determinations' prefix to the document title, for documents relating to our initial assessment of plans or draft determinations the full document title is referenced.

If Thames Water accepts our final determination, it will be accepting that it has adequate funding to properly carry out the regulated business, including meeting its statutory and regulatory obligations, and to deliver the outcomes within its final determination.

[1] See the 'Policy summary' for more information.
[2] See 'UK Government priorities and our 2019 price review final determinations' for more information.

Contents

Amendment	Date
Page 36 – Amendment to first bullet in grey box to remove reference to draft determination. Page 42, Table 3 – Amendment for bioresources costs replacing £627.3 million with £697.2 million. Page 53, Table 3.8 – Amendment to figures for: • Grants and contributions before the deduction of income offset (£m) for Network plus – water from £236.8m to £187.0m and Network plus – wastewater from £188.7m to £86.4m. • Amendment to Abstraction charges and business rates (£m) for Water resources from £0m to £81.7m, for Network plus – water from £0m to £353.0m and Network plus – wastewater from £0m to £131.3m. • Amendment to Net allowed totex subject to cost sharing reconciliation (£m) for Water resources from £459.2m to £377.5m, for Network plus – water from £3,620.0m to £3,316.8m and Network plus – wastewater from £3,575.0m to £3,546.0m.	18 May 2020

1 Summary

The water sector faces challenges of climate change, a growing population and increasing customer expectations, while improving affordability of an essential service. The 2019 price review (PR19) enables and incentivises companies to address these challenges both in 2020-25 period and longer term.

To do this the sector needs to innovate and challenge itself to deliver better performance for customers and the environment. Companies need to engage and work with customers and other companies, the supply chain and with other stakeholders.

Our PR19 methodology sets out a framework for companies to address the challenges facing the sector with a particular focus on improved service, affordability, increased resilience and greater innovation. We published our draft determination for Thames Water on 18 July 2019, based on our detailed review of the revised plans submitted to us on 1 April 2019. The company and a number of stakeholders provided representation responses on our draft determination on 30 August 2019. Other stakeholders provided further representations after 30 August 2019.

Our final determination carefully considers all of the representations we received from companies and stakeholders on our draft determination and takes account of the most up-to-date information available where appropriate. We consider the changes we have made in our final determination are in line with our statutory duties.

1.1 What our final determination includes

This section sets out the overall shape of our final determination for Thames Water. We cover the customer bill profile, costs, outcomes for customers, allowed revenues and our decision for Thames Water, as its September 2018 business plan was categorised as significant scrutiny, on the outcome delivery incentive cap and lower cost sharing rate. More detail is provided in the following sections of this document.

Bill profile

Our final determination for Thames Water will cut average bills by 7.1% in real terms in the 2020-25 period compared to the company's proposed 2.8% reduction. Table 1.1 below sets out the difference in bill profile between the company's business plan submission in April 2019, our draft determination and the final determination. Average bills are lower than proposed by Thames Water, reflecting our view of efficient costs and a reduction in the allowed return. Further details on bills are set out in section 6.

Table 1.1: Bill profile for 2020-25 before inflation

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Company plan (April resubmission)	£389	£374	£380	£379	£379	£378
Draft determination	£389	£333	£342	£344	£344	£344
Final determination	£389	£366	£371	£369	£365	£361

Note Thames Water customers pay around £12 per year for the Thames Tideway Tunnel. This revenue is collected by Thames Water on behalf of Bazalgette Tunnel Limited, and is not part of the price controls for Thames Water. This £12 per year is, however, included in bills throughout this document (in our draft determination, this was not reflected correctly in all lines).

Costs

Our final determination allows wholesale totex of £9,252.1 million. This is:

- £795.7 million higher than in our draft determination; and
- £8.0 million lower than stated in the company's representation on our draft determination.

Our final determination allows Thames Water £1,469 million to invest in improvements to service, resilience and the environment. Key parts of this allowance are:

- £474 million for the environmental obligations set out in the Water Industry National Environment Programme (WINEP) across water and wastewater programmes;
- £203 million for a large-scale metering programme;
- £31 million to improve the resilience of its water and wastewater services;
- £94 million for supply-demand balance schemes, to support long-term drought resilience;
- £77 million to reduce the scale of unplanned outages at water treatment works; and
- £67 million to replace lead water pipes.

We make an additional allowance of £179 million in our final determination for strategic water resource development to support the delivery of long-term drought resilience.

We make two conditional allowances relating to water supply infrastructure in London. We allow £180 million to investigate risks to resilience and the mitigation of risk to water supplies in North East London. Further we are stepping in to make an allowance of up to £300 million to improve the performance of the London water network. These two allowances are to ensure Thames Water develops proposals to effectively mitigate risk and significantly improve asset health and service resilience. Both are conditional on Thames Water delivering an agreed scope of work through a gated process.

Thames Water will face greater scrutiny on these allowances than would normally be the case. We will return the allowance to customers unless Thames Water provides a clear and well thought through plan. We expect Thames Water to demonstrate that it understands the challenges facing its network and treatment works resilience and produce well thought-through plans in a defined time frame with clear and measurable deliverables. The plan should identify and commit to new performance standards that capture likely benefits to performance from any planned work.

Specifically in relation to the £300 million allowance to improve network performance, in addition to the conditions above, a further condition is that Thames Water’s plan must also include a commitment from Thames Water’s shareholders to make a substantial contribution to the cost of the improvement works.

We will confirm the appropriate allowance based on the agreed value of the programme, progression through the gates to our satisfaction and the value of the work completed to our satisfaction. In particular, where the conditions of the first gate are not met we will return the full £300 million allowance for performance of the London water network to customers. We will return the full allowance, or part of the allowance, to customers through an end of period reconciliation.

Further details on our cost allowances are set out in section 3.

Outcomes for customers

Our final determination package includes a full set of performance commitments, specifying the minimum level of service that Thames Water must commit to deliver for customers and the environment under this price review. These sit alongside the company’s statutory and licence requirements. Each performance commitment also has a financial or reputational incentive to hold the company to account for delivery of these commitments.

Further details of key performance commitments are set out in Table 1.2 below and in section 2.

Table 1.2: Key performance commitments for Thames Water

Area	Measure
Key common performance commitments	• 20.4% reduction in leakage on a three year average basis. This is at least 15% reduction from PR14 performance commitment levels. • 6.3% reduction in per capita consumption by 2024-25 • 30% reduction in pollution incidents by 2024-25 to 19.5 incidents per 10,000 km sewer • 36% reduction in internal sewer flooding incidents by 2024-25 to 1.34 incidents per 10,000 connections • 53% reduction in water supply interruptions by 2024-25 to 5 minutes
Bespoke performance commitments	• 9.3% increase in renewable energy produced from the company's operational business by 2024-25 • 65 hectares of surface area disconnected from the combined sewer system or attenuated through sustainable drainage systems by 2024-25 • 2.5% increase in the average annual availability of pumps in network catchment sewage pumping stations from 96% to 98.5%. (Equivalent to a 62.5% reduction in the average annual unavailability of pumps)
Overall incentive package	Overall, the likely range of returns from outcome delivery incentive package in our final determination equates to a return on regulatory equity range of – 1.68% (P10) to + 0.76% (P90).

Note the calculations behind these numbers are outlined in the 'Thames Water - Outcomes performance commitment appendix'.

Allowed revenues

Our final determination sets allowances for total revenue or average revenue for each of the price controls. Table 1.3 shows the allowed revenues in the final determination across each price control. Further details on our calculation of allowed revenues are set out in section 4.

Table 1.3: Allowed revenue, 2020-25 (£ million)

	Water Resources	Network plus - water	Network plus - wastewater	Bioresources	Tideway	Wholesale total	Residential retail	Total
Company view of allowed revenue based on April 2019 submission (£m)	461.6	4,317.1	3,978.8	885.9	281.2	9,924.5	769.5	10,694.0
Final allowed revenues (£m)	444.6	4,163.0	3,980.5	807.1	236.9	9,632.0	657.9	10,289.9

Note Thames Water's 30 August representations did not include updated revenue allowances to reflect its new proposed totex. Retail revenue is the sum of the margin, retail costs, and adjustments. The bioresources and residential retail controls are average revenue controls. We have included forecast revenue (in real terms) for these controls to illustrate the total revenue across all controls.

As set out in the 'Allowed return on capital technical appendix', we are updating our assessment of the allowed return on capital for Thames Water final determination. The allowed return is 2.96% (on a CPIH basis, 1.96% on a RPI basis) at the appointee level. After adjustment for the retail margin, the allowed return on capital for the wholesale price controls is 2.92% (on a CPIH basis, 1.92% on a RPI basis), a reduction of 0.16 percentage points from our draft determination, reflecting our assessment of market evidence. The allowed retail margin for the household retail control remains at 1.0%, consistent with the draft determination.

Thames Water's Regulatory Capital Value (RCV) growth in 2020-25 is 11.5% and 61.9% of its RCV will be indexed to CPIH in 2025. We bring forward £125 million of revenue from future periods.

We consider that Thames Water's final determination is financeable on the basis of the notional structure, based on a reasonable allowed return on capital and revenue advanced through pay as you go (PAYG) adjustments. The determination is sufficient to deliver its obligations and commitments to customers. Further detail on our assessment of financeability is set out in section 5.

Putting the sector in balance

We have encouraged companies to take greater account of customers' interests – and to transparently demonstrate that they are doing so in the way they finance themselves, pay dividends to their shareholders, and determine performance related executive pay. Thames Water commits to meeting the expectations set out in our 'Putting the sector in balance position statement'.

Thames Water has high gearing[3] and under its actual financial structure, it expects gearing to be at a level that would trigger sharing payments with customers through the gearing outperformance sharing mechanism. The company proposes an alternative sharing mechanism which we do not accept for the final determination as it does not provide equivalent benefits for customers, in the round, to our mechanism. But we have amended our mechanism to include a transition period in 2020-25

Although the company expects its gearing to reduce by about 5% during 2020-25, through additional equity investments and restriction of dividends, it still expects gearing to be above 76% by the end of the period. The allowed return on capital is lower than the draft determination and this may mean that the company needs to take steps to maintain financial resilience.

To meet our expectations, the company will need to demonstrate to stakeholders that dividends and performance related executive pay policies are substantially aligned to its performance for customers.

In the 'Putting the sector in balance' position statement we also encouraged companies to adopt a voluntary sharing mechanism, particularly where, for example, companies outperform our cost of debt assumptions. Thames Water has not proposed any voluntary sharing mechanisms to share financial outperformance, and does not make company contributions to a social tariff or payment matching scheme. However, the company does voluntarily commit to supporting a charitable trust fund, funded by Thames Water shareholders.

We provide further detail on these issues in section 7.

[3] Based on net debt to regulatory capital value.

Outcome delivery incentive cap and lower cost sharing assessment

We apply the lower significant scrutiny cost sharing rate for Thames Water, but only for underperformance of the final determination totex allowance to provide protection for customers. While we recognise that Thames Water has made a number of improvements since the initial assessment of plans, such as reducing the cost gap and accepting some interventions no performance commitments, there are key material areas where evidence remains insufficient and unconvincing. It has not been timely in submitting important aspects of its plan to us. In its response to the draft determination, it did not confirm which plan it will be delivering until mid-October 2019 and it submitted information late. We are also intervening in a number of important areas in its final determination. We are not applying an outcome delivery incentive cap (see 'Significant scrutiny companies – Application of lower cost sharing rates and outcome delivery incentive cap' technical appendix for details).

1.2 Representations on the draft determination

All companies and stakeholders were invited to make representations on our fast track draft determinations by 24 May 2019 and on our slow track and significant scrutiny draft determinations by 30 August 2019. More detail about the issues raised in the representations by the company and our consideration of those issues can be found elsewhere in this document, the technical appendices and other documents published alongside our final determinations. Table 1.4 highlights the key points made by Thames Water in its representation together with any further submissions after that date and a summary of our response to each of those points.

Table 1.4: Company representation

Key point in Thames Water's representation	Summary of our response
The overall stretch of totex and performance commitments of the draft determination is unachievable. Its central expectation is that the draft determination would not generate sufficient returns and represents a higher risk outcome that is not in customers interests.	Our assessment of cost efficiency takes into account the overall level of stretch across both costs and outcomes. Where appropriate we make adjustments to our approach at draft determination, allowing increased totex, adjusted performance commitments and incentives. We consider that the resulting combination of our requirements on both costs and outcomes are stretching but achievable. Evidence suggests that companies can perform well on both costs and outcomes with some companies performing better than the sector-wide benchmarks we set in the 2015-20 price review period. See the 'Policy summary' and 'Securing cost efficiency technical appendix' for more detail. Where evidence

Key point in Thames Water's representation	Summary of our response
	is sufficient and convincing, we have adjusted its position (see below).
Thames Water proposes totex of around £10 billion, lower than the £11 billion in its April 2019 plan (its September 2018 plan proposed £11.7 billion). It states that this broadly matches Ofwat's base totex levels at the draft determination. Thames Water argues for enhancement claims, changes to our approach to modelling and the overall balance of risk and return. Thames Water says its proposed plan would not allow it to address challenges to renew the infrastructure in London and the South East and to strengthen operational resilience.	The more efficient level of totex Thames Water proposes combined with some changes to our totex allowances in the final determination means the cost gap closes. We increase our allowance for the smart metering programme to a total of £203 million. We make two conditional allowances relating to water supply infrastructure in London. We allow £180 million to investigate risks to resilience and the mitigation of risk to water supplies in North East London. Further we are stepping in to make an allowance of up to £300 million to improve the performance of the London water network. These two allowances are to ensure Thames Water develops proposals to effectively mitigate risk and significantly improve asset health and service resilience. Both are conditional on Thames Water delivering an agreed scope of work through a gated process. See section 1.3 above and section 3 for details. We apply a £100 million challenge to Thames Tideway land sales income. It is Thames Water's responsibility to put forward a plan which meets its statutory and regulatory obligations and it is its responsibility to meet those statutory and regulatory obligations and deliver the expected level of service.
Thames Water accepts draft determination common performance commitment levels for mains bursts, per capita consumption, internal sewer flooding and blockages. The company proposes performance commitment levels that are lower than our draft determination for leakage (20% reduction not 25%), supply interruptions (43% not 72%) and unplanned outages at water treatment works (13% not 16%). Some bespoke performance commitments are removed in light of reduced totex and stretch.	For leakage we are reducing stretch from 25% to 20.4% based on the company's proposal because we consider this to be stretching. This broadly aligns with its section 19 undertaking on leakage. For water supply interruptions we are changing the 2024-25 level to 5 minutes and changing the industry wide glidepath for all companies, which is equivalent to a 53% reduction in water supply interruptions by 2024-25. For unplanned outages at water treatment works we are not reducing levels at final determination, due to the company's poor performance. We are not amending outcome delivery incentive rates, due to the need to recover funding if the company does not deliver improved performance.
Thames Water states that the draft determination is not financeable and the cost of capital should be higher. Thames Water applies an allowed return of 2.6% (appointee level) - the lower end of range in a report from Frontier Economics.	We use an allowed return on capital based on updated market evidence, as set out in our 'Allowed return on capital technical appendix'. We have carefully considered all of our duties, in particular our financing functions and consumer protection duties, and are satisfied that our final determination fulfils our duties in the round. Our

Key point in Thames Water's representation	Summary of our response
	assessment of notional financeability for the final determination is made in the context of changes made to the draft determination in our final determination. We consider the company's final determination is financeable on the basis of the notional structure based on the allowed revenues which include a reasonable allowed return on capital. The final determination is sufficient to ensure the company will be in a position to deliver its obligations and commitments to customers. It is the company's responsibility to maintain financial resilience under its actual financial structure and it must bear the risks associated with its choice of capital and financing structure.

We also received representations on Thames Water's draft determination from other stakeholders as shown in table 1.5, which shows a summary of our response to company-specific comments. Representations from some other stakeholders relate to all companies and are described in the relevant technical appendices. More detail about the issues raised in the representations by stakeholders can be found elsewhere in this document, the technical appendices and other documents published alongside our final determinations.

Table 1.5: Stakeholder representations

Stakeholder representations	Summary of our response
The Consumer Council for Water supports our challenge to Thames Water to go further to help customers most in need. It is concerned about the deliverability of Thames Water's package of performance commitments given its current performance.	In our final determination we reduce the stretch on some performance commitment levels, including on leakage and supply interruptions to align to efficient company and increases allowed costs to support new investment.
The Customer challenge group says that the plan proposed in Thames Water's representation was not tested with customers. Earlier engagement shows that customers are happy with a flat bill or small increase, with improved services. It also challenges whether bill reductions is what customers have asked for, especially if this may lead to a reduction in service levels.	We consider that the company does not present new customer engagement evidence in its representations to our draft determination in August 2019. We consider the level of stretch applied to our final determinations is deliverable for an efficient company. Our cost allowances determine what Thames Water can recover from its customers, they do not prevent Thames Water from investing its own money to improve performance where it falls short of an efficient company. Our interventions at draft determinations increased rather than reduced expected service levels. Therefore the bill reductions are not at the expense of service levels, but are consistent with holding Thames Water to account to deliver high quality performance at efficient costs.

Stakeholder representations	Summary of our response
The Environment Agency sets out its expectation that Thames Water will get leakage under control.	We continue to monitor leakage performance following the statutory undertaking that the company provided to us under section 19 of the Water industry Act 1991, due to it breaching legal obligations in relation to its management of leakage reduction. We expect 20.4% reduction in leakage on a three year average basis. The company will face underperformance payments if it fails to meet the performance commitment level.
The Royal Borough of Kensington and Chelsea and a Thames Water customer have concerns about the lack of sewer capacity and Thames Water's solution to sewer flooding in the Counters Creek area.	We retain our totex adjustment for Counters Creek and include an additional performance commitment.
The Group Against Reservoir Development welcomes our approach to developing strategic water resources. It argues for more stretching per capita consumption levels since it claims the company has not allowed for the greater reduction of per capita consumption that will come from widespread introduction of smart metering and tariff structuring and that Thames Water has a history of persistently over-forecasting per capita consumption in Water Resource Management Plans.	We do not change the per capita consumption level at final determination since our intervention at draft determination took into account Thames Water's smart metering programme. This is discussed in 'Thames Water - Delivering outcomes for customers final decisions'. However, we will allow additional totex for improving water network asset health in North East London.
A number of stakeholders, including environmental, business and developer groups and an MP, have asked us to reconsider aspects of our draft determination in areas to improve environmental outcomes, resilience and growth challenges.	Our final determination allows Thames Water £1,469 million to invest in improvements to service, resilience and the environment. This includes £474 million to improve the environment by efficiently delivering its obligations as set out in the Water Industry National Environment Programme and £211 million for resilience. In making our decisions, we expect each company to be able to demonstrate that it has well-evidenced and justified plans, which it can deliver efficiently. Where the company falls short of the standards, this is not a reason for improvements not to be delivered. It also does not prevent Thames Water from investing its own money to improve.
A Thames Water customer states concerns that it appears Thames Water customers are paying for the large bonuses of £794,000 given to the company's two top executives.	On executive pay, Thames Water falls short of the 60% alignment to delivery for customers we identify as current good practice. We retain our expectation that the company will ensure its dividend and performance related pay policies demonstrate substantial alignment with the customer interest, underpinned by stretching performance levels throughout 2020-25. (See section 7).

1.3 Key changes from the draft determination

Our final determination carefully considers the representations we received from companies and stakeholders on our draft determinations on 30 August 2019. It also takes account of the most up-to-date information available where appropriate. Changes to overall revenue and costs allowances are set out in table 1.6.

Table 1.6: Difference in cost and revenue allowance final to draft determination

	Draft determination	Final determination
Allowed revenues (£m, 2017-18 CPIH deflated)	9,574.9	10,289.9
Wholesale cost allowance[1] (£m, 2017-18 CPIH deflated)	8,456.4	9,252.1
Retail cost allowance (£m, nominal)	753.5	754.0
Wholesale allowed return[2] (% - CPIH basis)	3.08%	2.92%

[1] Note that we include pension deficit recovery costs in the wholesale cost allowances we present in table 1.6 above and in table 3.1 later in this document. At the draft determination we published cost allowances excluding pension deficit recovery costs. The numbers we show here as the draft determination allowances can be calculated by adding the pension deficit recovery costs from draft determination table 3.2 to draft determination table 3.1 total allowances. Our decisions on individual elements of the totex allowance are set out in section 3
[2] The allowed retail margin for the household retail control remains at 1.0%, consistent with the draft determination.

Significant changes from the draft determination for Thames Water are:

- we make two conditional allowances relating to water supply infrastructure in London. We allow £180 million to investigate risks to resilience and the mitigation of risk to water supplies in North East London. Further we are stepping in to make an allowance of up to £300 million to improve the performance of the London water network;
- we increase the mains repairs performance commitment level, we apply industry wide changes to ensure performance commitment levels take account of historical levels of performance and the implications of leakage reduction levels for mains repair;
- we increase the water supply interruptions 2024-25 level to five minutes (making it easier to achieve), with an amended glidepath in the first four years taking account of wider evidence to calibrate the stretch of the performance commitment for an efficient company. We reduce the outcome delivery incentive underperformance rate to be symmetrical with its outperformance rate;
- we amend leakage reduction from 25% to 20.4% for Thames Water which we consider to be stretching, which broadly aligns with the section 19 undertaking the company has on leakage;

- taking account of company representations, we revise our approach to determine the mix of operating and capital expenditure to take better account of the nature of our decisions on cost allowances. We apply the updated approach in our technical intervention to PAYG rates;
- we advance allowed revenue by £125 million to ensure our determinations are financeable on the basis of the notional structure. This compares to £41 million revenue brought forward in the draft determination; and
- we revise Thames Water's average bill profile from a large reduction upfront followed by flat real terms prices, to have a smaller reduction upfront, followed by a gradually falling real price over 2020 – 25.

2 Outcomes

Key changes from the draft determination

The key changes made to the outcomes elements of the draft determination are:

- We make changes to performance commitment levels for mains repairs that apply industry wide to ensure levels take account of historical levels of performance and the implications of leakage reduction levels for mains repairs. We also amend the underperformance payment rate on mains repairs for all companies to industry average. This will provide a more balanced spread of incentives and risks across its performance commitments.
- We increase the water supply interruptions 2024-25 level to five minutes, with an amended glidepath in the first four years, taking account of wider evidence to calibrate stretch of performance commitment for an efficient company. We reduce the outcome delivery incentive underperformance rate to be symmetrical with its outperformance rate. This will provide a more balanced spread of incentives and risks across its performance commitment.
- We amend leakage reduction from 25% to 20.4%, which we consider to be stretching. This broadly aligns with the section 19 undertaking the company has on leakage.
- We amend the deadband on the Compliance Risk Index (which measures compliance with the Drinking Water Inspectorate's (DWI's) water quality standards) to a score of 2.00 throughout the period reducing the risk of underperformance payments in the last three years of the 2020-25 period. This allows more flexibility in performance to take into account the uncertainty created by the ban on the use of metaldehyde, which has been overturned by the High Court and also aligns with the median level of company performance.

Throughout PR19, we have been asking companies to:

- make stretching performance commitments to their customers;
- have stronger incentives to deliver on their commitments; and
- better reflect resilience in their commitments

The outcomes framework is a key component in driving companies to focus on delivering the objectives that matter to today's customers, future customers and the environment in the 2020-25 period and beyond. Outcomes define the service package that companies should deliver for their customers and their incentives to do this.

There are two key elements of the outcomes framework: performance commitments and outcome delivery incentives. Performance commitments specify the services that customers should receive and set out in detail the levels of performance that the companies commit to achieve within the five year period from April 2020 to March 2025. Outcome delivery incentives are the reputational and financial incentives that companies have, to deliver on their performance commitments to customers. They specify the financial or reputational consequences for companies of outperformance or underperformance against each of these commitments (they are referred to as ‘out’ where there is a payment to the company for better than committed performance, ‘under’ where there is a payment to customers where there is worse than committed performance, or ‘out-and-under’ incentives, depending on their design).

Most outcome delivery incentives will be settled at the end of each year to bring incentive payments closer to the time of delivery of the service (‘in-period’ incentives) and some will be settled once at the end of the five year period (‘end-of period’ incentives). The outcomes framework gives companies the freedom to innovate and explore to find the most cost-effective way of delivering what matters to their customers.

The company’s performance raises serious concerns. It is a lower quartile performer on several key measures including internal sewer flooding, the service incentive mechanism, water supply interruptions and leakage. We continue to monitor its leakage performance following the statutory undertaking that the company provided to us under section 19 of the Water industry Act 1991, due to it breaching legal obligations in relation to its management of leakage reduction. Its performance on the performance commitments on asset health is also poor. It has some areas of better performance for example on pollution incidents, low pressure and sewer collapses.

In its September 2018 business plan, Thames Water acknowledged issues with its performance:

‘It was clear that many of our performance failures were directly related to the operating model we adopted in 2015 and the culture it engendered. The combination of three separate business units – wholesale water, wholesale wastewater and retail household – with three alliances, each operating semi-autonomously, resulted in a lack of transparency, lack of coordination and poor control of outcomes.’

It also highlighted trunk mains bursts and the impact of the freeze thaw event that highlighted specific failures with both knowledge of assets and operational responses.

In its September business plan, the company's proposals were not stretching enough on leakage, per capita consumption, supply interruptions and mains repairs. In addition, the company did not provide sufficient evidence that outcome delivery incentive rates adequately incentivised it to improve performance or that rates reflected customer priorities. The company also submitted cost adjustment claims relating to improving poor performance on unplanned outage, leakage, supply interruptions and some bespoke performance commitments such as household accounts on a new billing system.

In its revised plan in April 2019, the company largely provided additional rationale and explanation rather than proposing changes to its proposed levels or outcome delivery incentive rates.

At draft determination we intervened in many areas. We increased the company's performance commitment levels on internal sewer flooding and supply interruptions to reach upper quartile, and per capita consumption and leakage to larger percentage reductions. We also increased its performance commitment levels in areas where the company is currently a poor performer and it was proposing relatively low stretch such as asset health for example on sewer blockages, unplanned outage and mains repairs.

On outcome delivery incentives, we intervened to increase incentives and hence customer protection on mains repairs and supply interruptions (to ensure customer protection in light of poor performance) and unplanned outages (to ensure customer protection and recover the funding given to it to improve performance on unplanned outages). On pollution incidents, low pressure, water quality contacts and some bespoke commitments such as sewage pumping station availability, we removed the company's outperformance rate due to lack of customer support. For bespoke performance commitments we proposed to set stronger incentives for timely delivery of schemes and service improvements.

In its representations to the draft determination the company noted 'In the vast majority of areas, we are proposing to step up to the challenge set out by Ofwat in the draft determination, and we intend to deliver a step-change in performance more ambitious than any five-year plan that has ever been delivered in the English and Dŵr Cymru sector to date'. On common performance commitments the company focuses its representations on performance commitment levels for leakage, supply interruptions and unplanned outages as well as outcome delivery incentive rates on unplanned outages, mains repairs, sewer blockages, supply interruptions and water quality contacts.

In our final determinations we make changes to our draft determination in several areas.

On leakage reduction, the company makes representations to reinstate its proposed leakage reduction to 20% compared to the 25% reduction in the draft determination. We accept the company's proposal and based on the information it provides we set leakage reduction at 20.4% for final determination, which broadly aligns with its section 19 undertaking on leakage.

On water supply interruptions, the company makes representations that it is concerned about the achievability of the performance level of 3 minutes and that it has some specific factors such as slow road traffic, higher density of properties and an old asset base which affect its performance. We consider that the evidence Thames Water provides to justify a different performance level from the sector, is insufficient. However, as part of an industry-wide adjustment, we are increasing the level from 3 minutes to 5 minutes with an amended glidepath in the first four years, taking account of wider evidence to calibrate the stretch of the performance commitment for an efficient company.

On unplanned outages at water treatment works, the company makes representations on both the performance commitment level and the outcome delivery incentive rate. The company proposes a less stretching level and proposes that no financial incentives be applied - a scheme specific performance commitment would recover the funding if the schemes are not delivered. The company considers that the measure is too immature, companies are not compliant with measurement requirements and the metric doesn't take into account company-specific factors. It states that its water supply system is configured so that customers are not impacted by supply interruptions as a result of an outage at its works.

This is an asset health measure and if the number and duration of unplanned outages increases, the risk to service increases, regardless of the existing mitigations or redundancies in the company's system. We consider that the same level of forward-looking performance is appropriate. Unplanned outages is a new metric with only two years of shadow reported data, thus we have limited historical dataset to use to set stretching levels for. A standard level for 2024-25 set at the current median (2.34%) recognises the immaturity of the measure and provides the lowest risk for achievability, whilst still being stretching for some companies. We also do not remove or reduce Thames Water's outcome delivery incentive rate - we consider it still has poor performance and customers should be able to recover the funding allowed if the company does not deliver improvements in performance.

The company challenges our methodology for using the industry reasonable range to intervene on its incentive rates for water supply interruptions on the basis that this overrides evidence from its customer research.

Our methodology for assessing outcome delivery incentive rates considers reasonable ranges based on company business plan submissions. We use reasonable ranges, as companies' proposed outcome delivery incentive rates vary considerable, in ways we are unable to correlate to plausible drivers of underlying customer preferences. Using a reasonable range based on data from across the sector mitigates the risk of methodological differences leading to outcome delivery incentive rates which depart from underlying customer preferences. Our approach uses the reasonable range proportionately and as one element of our analysis, we conscientiously consider companies' research as well as several other factors such as large variance from PR14 rates, comparative performance as well as past performance issues. If the research is considered good quality, it is included in the data we use to set outcome delivery incentive rates for customer facing performance commitments.

Consequently, we consider our use of reasonable ranges to be proportionate and consistent, and that, in setting rates, we balance our use of reasonable ranges with additional information including companies' evidence. We consider that past performance is a relevant consideration when setting outcome delivery incentive rates. There is a risk that companies with poor past performance may propose weak incentives, whereas, we consider they may require stronger financial incentives than in previous periods, to ensure that they place due focus on improving performance in this specific area. As such, we use a range of tests as articulated in our 'Delivering outcomes for customers policy appendix'.

Supply interruptions is an area of poor performance for Thames Water and therefore we intervene to protect customer interests by adjusting rates to increase confidence that the company will meet its performance commitment in 2020-25. The company does not provide a justification or response to our past delivery concerns in its representation. However, we set all companies' underperformance rates symmetrically to outperformance rates to provide a more balanced spread of incentives and risk on water supply interruptions.

The company also challenges our decisions on mains repairs and sewer blockages partly because it considers that its comparative performance is not relatively poor when taking into account the challenges of operating in London for example the higher density of food outlets. In relation to mains repairs the company considers that the outcome delivery incentive rates could distort against customer priorities. We consider that the company is a poor performer for mains repair and sewer blockages and do not consider its evidence to be sufficient to justify its level of performance. On mains repairs we have made industry wide changes in order provide a balanced spread of risks and incentives.

The company also makes representations on a number of outcome delivery incentives where it considers our interventions on its do not reflect customer valuations, see section 2.1 below for details.

On bespoke performance commitments, Thames Water provides an option to remove several of its performance commitments since the company considers that the overall stretch of the draft determination is unachievable (on both totex and performance commitments) and that on an actual basis, it would be unable to finance its statutory functions. We retain all performance commitments as at the draft determination despite the company representation to remove a number due to cost reasons. We consider these performance commitments measure the delivery of benefits expected by customers and that we have allowed sufficient expenditure for an efficient company to deliver these commitments. The final determination increases totex allowances and adjusts outcome performance commitments and incentives in areas the company claimed contributed to the draft determination being unrealistic.

The outcomes framework sits in the broader context of the company's statutory and licence requirements for service delivery. Independently of the outcomes framework, each company also has to ensure that it complies with its legal obligations, or risk enforcement action. If a company's performance falls below the level set for a performance commitment (irrespective of the existence of any deadband or collar), we will consider whether this is indicative of wider compliance issues to the detriment of consumers and whether enforcement action, with the potential for remedial and fining measures, is warranted.

Please see the 'Delivering outcomes for customers policy appendix' for further details on our policy decisions on cross-cutting issues such as common performance commitments and outcome delivery incentive rates.

Reporting on performance in London

Since its 30 August written representation, Thames Water has indicated that it will develop separate reporting to show how it is performing in its London region in 2020-25.

We expect the company to think broadly about which measures to report on separately for London and the rest of its region. This should provide a comprehensive and transparent picture of performance. This reporting should cover a full range of outcomes and operational measures – including the separate reporting of key common performance commitments included in the final determination.

The company needs to consider the information its stakeholders need to understand Thames Water's performance in London and the outcomes for customers and the environment. We expect it to consult with relevant stakeholders in the development of London performance reporting.

The disaggregated performance reporting should be in place in time to provide transparency of performance for the whole of the 2020-25 reporting period.

We will consider the proposed performance reporting as it develops, but expect the company, at an early stage, to share its proposed plan and timetable for delivering this initiative with us and other stakeholders.

Changes to performance commitments

In section 3.3 we explain that we make two conditional allowances relating to water supply services in London. These are conditional on Thames Water delivering an agreed scope of work and demonstrating that it understands the challenges facing its network and treatment resilience and has developed proposals to effectively mitigate risk and significantly improve asset health and service resilience. Thames Water must provide a clear and well thought-through plan. We expect Thames Water to demonstrate that it understands the challenges facing its network and treatment works resilience and produce well thought-through plans in a defined time frame with clear and measurable deliverables. The plan should identify and commit to new performance standards that capture likely benefits to performance from any planned work

Where potential benefits flow from the London water network improvement enhancement allowance and impact on performance commitments set in this final determination, potentially making the performance commitment levels or outcome delivery incentive outperformance payments easier to achieve, we will consider resetting those levels or incentives. This is to reflect the level of stretch and outperformance payment in line with our intention in our final determination. We will consider this and reset as necessary as part of the gated process.

2.1 Customer engagement

In our PR19 methodology we set out our expectations that companies should demonstrate ambition and innovation in their approach to engaging customers as they develop their business plans. This includes direct engagement with customers to develop a package of performance commitments and outcome delivery incentives.

We expected customer challenge groups to provide independent challenge to companies and independent assurance to us on: the quality of a company's customer engagement and the degree to which this is reflected in its business plan.

We continued our assessment of customer engagement evidence following each company's submission of its representations to our draft determination in August 2019. We find variability in both the quality of engagement undertaken by companies and the extent to which customers' views are reflected in company proposals.

In its September 2018 business plan, Thames Water provided evidence to demonstrate elements of high-quality customer engagement although we highlighted areas of concern in our initial assessment of the company's plan, such as failure to fully reflect the view expressed by customers in the design of the package of performance commitments and outcome delivery incentives.

In response to our feedback in our initial assessment of the September 2018 business plan, in its April 2019 revised business plan Thames Water presented new evidence of customer views in relation to its Water Resources Management Plan, water supply resilience in North London, drought resilience and protecting chalk streams, performance commitments and outcome delivery incentives and overall plan acceptability and affordability.

In general, we found the quality of the new research to be of a satisfactory quality given the time constraints within which engagement was undertaken. However, we noted that Thames Water had not provided new evidence of customer support in response to some of the actions set out in our initial assessment of the business plan (for example, the March 2019 outcome delivery incentive research did not demonstrate support for an outperformance payment on the mains repairs performance commitment). We further noted that both Thames Water and its customer challenge group acknowledged that the March 2019 research results cannot be considered to be statistically robust and can only be used to provide an approximate indication of customers' views.

Thames Water's customer challenge group submits a representation to our draft determination in August 2019. It notes that the plan Thames Water proposes in its representation has not been tested with customers. It expresses concern that the combinations of the cost/efficiency challenge coupled with more stretching performance commitments will lead to the company not being able to deliver its plans and importantly in areas that are valued highly by customers, particularly in key areas such as leakage. It also challenges whether bill reductions is what customers have asked for, especially if this may lead to a reduction in service levels. We welcome the Thames customer challenge group representation. We note that our cost allowances determine what Thames Water can recover from its customers, they do not prevent Thames Water from investing its own money to improve performance and that this may well be required where Thames Water falls short of performance expected of efficient and well-run company. We note that our interventions at draft determinations increased rather than reduced expected service levels. We do not therefore accept that proposed bill reductions are at the expense of service levels, but that they are consistent with holding Thames Water to account to deliver high quality performance at efficient costs.

In its representations to our draft determination, Thames Water challenges a number of our draft determination decisions, as it claims we have not taken into account its customer engagement research. Specifically, it disagrees with the removal of the outperformance rate and the adjustment of the underperformance rate in relation to acceptability of water to customers as the company states that it used extensive consumer research in setting its incentive rates. We find that the company has made inappropriate adjustments to the triangulated (averaged) value of its marginal benefit in setting its outcome delivery incentive rates. It has not provided sufficient evidence to justify these adjustments and therefore we do not rely upon its estimates in setting incentive rates. We are therefore setting the underperformance rate at the lower bound of our reasonable range based on industry wide rates taking into account the company's good performance.

The company challenges our argument that its 2018 customer research shows that its customers do not support the use of outcome delivery incentive rates on pollution incidents. The company cites two pieces of previously submitted research in order to evidence this representation. The customer engagement research which the company cites does not show specific customer support for outperformance payments for this performance commitment and their previous submission showed specific lack of support.

The company argues that the outcome delivery incentive rates for power resilience were based on extensive customer research and therefore the removal of the outperformance rate and increase in the underperformance rate is unjustified. We consider that given we are allowing the company's enhancement cost claim, there is a need to protect customers from non-delivery of these resilience schemes through underperformance payments. The company does not provide sufficient evidence of why this customer protection is not required. The company also provided insufficient evidence that the outperformance rate would reflect the benefit to customers or that it has customer support for bills to increase in response to outperformance.

Thames Water argues that the increased underperformance rate and introduction of caps and collars[4] in relation to sewer blockages is inappropriate for a number of reasons, one of them being that it is contrary to its customers' valuations. We find that the company does not provide sufficient or convincing evidence to demonstrate its customers' priorities. In addition, we note that there are significant challenges involved in obtaining accurate customer valuations for non-customer facing performance commitments such as this one and we apply additional tests to assess outcome delivery incentive rates for non-customer facing measures. We have however changed outcome delivery incentive rates for all companies to reflect our use of the median instead of the mean to calculate incentive rates and have therefore revised the company's underperformance rate to reflect this. Further details are in our 'Delivering outcomes for customers policy appendix'.

The company challenges the intervention on the increased collar level for internal sewer flooding, claiming that its April 2019 revised business plan collars respond to customer research. Customer views are important and may be relevant to the design as well the level of incentive, it is also important to consider whether design of the incentive such as the levels of collars provide appropriate incentives for companies to deliver what customers expect, which includes a resilient service. We consider that the collars proposed by the company would not give sufficient incentive to be resilient. The company does not address this issue in its response to the draft determination. We continue to set the collar on a multiple of the service level to provide appropriate incentives for companies to improve and have plans in place to be resilient.

The company presents no new customer engagement evidence in its representations to our draft determination in August 2019.

We set out in our PR19 methodology that we expect companies to reflect their customers' preferences in the levels they propose for performance commitment levels and outcome delivery incentives. We also expected companies to challenge the level of stretch in their performance commitments against a range of approaches (for example, against comparative and historical information). In our PR19

[4] Collars are used to limit financial exposure to companies whilst caps are used to protect customers from large bill increases –the collar or cap multiplied by the incentive rate is the maximum underperformance or outperformance payment. Therefore, performance worse than this level (collars) or better than this level (caps) does not increase underperformance or outperformance payments respectively.

methodology we also expected companies to use customer valuations to set outcome delivery incentive rates and noted that we would compare these valuations and rates and challenge companies where appropriate. Therefore, when making our decisions, we have taken into account several factors in setting our final determination outcome delivery incentive rates including the quality of customer evidence provided. Our suite of final determination documents explains the rationale for our decisions, including the evidence used to inform our decisions.

2.2 Performance commitments and outcome delivery incentives

Thames Water's performance commitments and outcome delivery incentives for the 2020-25 period are listed in table 2.2 and table 2.3. The full details of these performance commitments and outcome delivery incentives are set out in the 'Thames Water - Outcomes performance commitment appendix'.

The key changes we are making in the final determination are set out in table 2.1[5] below. 'Thames Water – Delivering outcomes for customers final decisions' sets out our final decisions in terms of changes to our draft determination for the company's performance commitments and outcome delivery incentives, having considered stakeholder and company representations to our draft determination.

[5] Please note, table 2.1 focuses on policy changes and does not include changes made to correct errors in our draft determinations or changes made as a consequence of other amendments such as updating enhanced outcome delivery incentive rates for amendments to standard outcome delivery incentive rates using the same methodology and approach as at draft determinations.

Table 2.1: Summary of key changes to draft determinations on outcomes

Key changes
Amending the leakage performance commitment from 25% reduction to 2024-25 to 20.4% reduction. This broadly aligns with its section 19 undertaking on leakage
Increasing the water supply interruptions 2024-25 level (making it easier to achieve) to five minutes, with an amended glidepath in the first four years taking account of wider evidence to calibrate the stretch of the performance commitment for an efficient company. We reduce the underperformance rate to be symmetrical with its outperformance rate. Together these two changes provide a more balanced spread of incentives and risks on water supply interruptions.
Retaining the performance commitment levels for internal sewer flooding Amending the outcome delivery incentive rates in relation to internal sewer flooding to be symmetrical with the outperformance rates to provide a balanced spread of incentives and risks.
Increasing the performance commitment levels for mains repairs by a reducing percentage, for all companies, in all years, reducing the stretch. The aim is to allow all companies the flexibility to deliver the step change in leakage reduction, allowing more flexibility in the earlier years to use proactive mains repairs to reduce leakage. We intervened in mains repairs levels for this company at draft determinations since it was lagging the sector, setting the level at the average of the best three years performance. At final determination, we amend the base levels of mains repairs to an average of the best five years' performance, which provides a more representative level and ensures companies maintain good performance to improve the overall health of their assets over the longer-term. We also amend the underperformance payment rate on mains repairs for all companies4 to industry average which will provide a more balanced spread of risks and incentives for the company.
Adjusting the deadband on the Compliance Risk Index to a score of 2.00 throughout the period reducing the risk of underperformance payments in the last three years of the 2020-25. This allows more flexibility in performance to take into account the uncertainty created by the ban on the use of metaldehyde being overturned by the High Court and also aligns with the median level of current company performance.
Decreasing the underperformance rate in relation to water quality contacts at the lower bound of the industry reasonable range. This reflects the concerns we have in regard to Thames Water's customer engagement research.
Partially accepting the stakeholders representation and propose a new performance commitment for surface water management (Counters Creek). This is so the company implements steps to address any unacceptable risks of flooding in the Counters Creek area as quickly as possible.
Accepting the company's proposed level of stretch in relation to achieving BS18477 as it aligns with what we intended at draft determination.
Amending the performance commitment definitions in relation to non-household void properties to ensure that in-period determinations take into account the financial consequences of any retail market mechanism which may be developed, for example, under the Market Performance Framework in the 2020-25 period.
Reducing the level in relation to installing new smart meters in London. This reflects a correction in how the level was measured in our draft determinations.
Partially accepting the company's proposal on low pressure normalising by connected properties. Separately, due to a methodological change we are using the median as the basis for our intervention.

Table 2.2: Summary of performance commitments: common performance commitments

Name of common performance commitment	Type of outcome delivery incentive			
	Financial			Reputational
	Under	Out	In-period	
Water quality compliance (CRI) [PR19TMS_BW06a]	X		X	
Water supply interruptions [PR19TMS_BW03]	X	X	X	
Leakage [PR19TMS_BW04]	X	X	X	
Per capita consumption [PR19TMS_BW05]	X	X	X	
Mains repairs [PR19TMS_BW01]	X	X	X	
Unplanned outage [PR19TMS_BW02]	X		X	
Risk of severe restrictions in a drought [PR19TMS_DW01]				X
Priority services for customers in vulnerable circumstances [PR19TMS_AR06]				X
Internal sewer flooding [PR19TMS_CS03]	X	X	X	
Pollution incidents [PR19TMS_ES01]	X		X	
Risk of sewer flooding in a storm [PR19TMS_DS01]				X
Sewer collapses [PR19TMS_CS02]	X	X	X	
Treatment works compliance [PR19TMS_CS01]	X		X	
C-MeX: Customer measure of experience [PR19TMS_AR01]	X	X	X	
D-MeX: Developer services measure of experience [PR19TMS_AWS01]	X	X	X	

Table 2.3: Summary of performance commitments: bespoke performance commitments

Name of bespoke performance commitment	Type of outcome delivery incentive				
	Financial				Reputational
	Under	Out	In-period	End of period	
Percentage of satisfied vulnerable customers [PR19TMS_AR05]					X
Proactive customer engagement [PR19TMS_AWS02]					X
Properties at risk of receiving low pressure [PR19TMS_BW07]	X		X		
Acceptability of water to consumers [PR19TMS_BW08]	X		X		
Water quality events [PR19TMS_BW09]	X		X		
Reducing risk of lead [PR19TMS_BW10]	X	X	X		
Responding to major trunk mains bursts [PR19TMS_BW11]					X
Clearance of blockages [PR19TMS_CS04]	X	X	X		
Sewage pumping station availability [PR19TMS_CS05]	X		X		
Surface water management [PR19TMS_DS02]	X	X		X	
Security of supply index SoSI [PR19TMS_DW02]	X		X		
Power resilience [PR19TMS_DWS01]	X			X	
SEMD - Securing our sites (2020-25 projects) [PR19TMS_DWS02]	X			X	
SEMD - Securing our sites (legacy projects) [PR19TMS_DWS03]	X				
Unregistered Household Properties [PR19TMS_ER01]	X		X		
Empty household properties [PR19TMS_ER02]	X	X	X		
Households on the Thames Water social tariff [PR19TMS_ER03]					X
Environmental measures delivered [PR19TMS_ES02]	X		X		
Sludge treated before disposal [PR19TMS_ES03]	X		X		
Readiness to receive tunnel flow at Beckton STW [PR19TMS_ET01]	X		X		
Effective stakeholder engagement [PR19TMS_ET02]					X
Critical asset readiness for the London Tideway Tunnels [PR19TMS_ET04]	X		X		

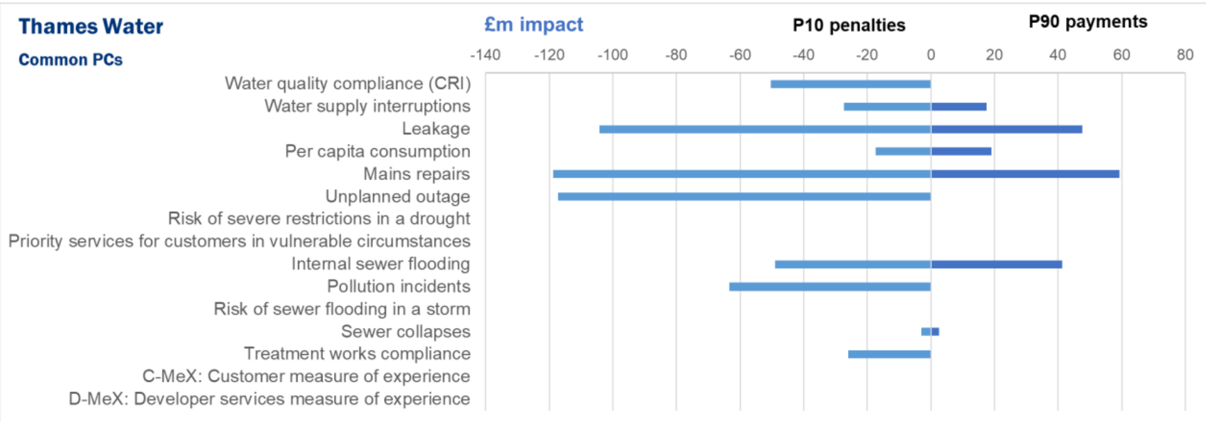
Name of bespoke performance commitment	Type of outcome delivery incentive				
	Financial				Reputational
	Under	Out	In-period	End of period	
Establish an effective system operator for the London Tideway Tunnels [PR19TMS_ET05]					X
Maximising the value of Tideway project land sales [PR19TMS_ET06]					X
Abstraction Incentive Mechanism (AIM) [PR19TMS_EW01]	X	X	X		
Enhancing biodiversity [PR19TMS_EWS01]	X	X		X	
Smarter Water Catchment Initiatives [PR19TMS_EWS02]	X		X		
Renewable energy produced [PR19TMS_EWS03]	X	X	X		
Natural Capital Accounting [PR19TMS_EWS04]					X
Empty business properties [PR19TMS_EWS08]		X	X		
BSI for fair, flexible inclusive services [PR19TMS_AR07]					X
Installing new smart meters in London [PR19TMS_M01]	X			X	
Replacing existing meters with smart meters in London [PR19TMS_M02]	X			X	
WINEP Delivery [PR19TMS_NEP01]					X
Delivery of DWMPs [PR19TMS_DWMP]					X
Understanding the risk of flooding in the Counters Creek catchment [PR19TMS_CC]					X
Managing early handback of Tideway project land [PR19TMS_ET07]	X	X		X	

Figure 2.1 and figure 2.2 provide an indication of the financial value of each of Thames Water's outcome delivery incentives (taking into account the impact of our final determination decisions) showing how much the company would have to return to customers if it underperformed to the P10 level and how much the company would gain if it outperformed to the P90 level. The P90 is the performance threshold at which there is only a 10% chance of outturn performance being better. The P10 is the performance threshold at which there is only a 10% chance of outturn performance being worse.

The figures cover common and bespoke commitments respectively. The estimates are based on the company's own view of the plausible bounds of performance submitted in April 2019 submission. Where we have changed service levels for performance commitments, we have amended these estimates so that the distance between the service level and estimate remains the same.

Our analysis has built on the estimates companies have provided, but there is a range of plausible estimates of what may happen in plausible worst case (P10) and plausible best case (P90). There is inherent uncertainty in forecasting these parameters and the figures presented should be seen as indicative of the likely range of financial impacts for each performance commitment.

Figure 2.1: Projected P10 underperformance payments and P90 payments for common performance commitments over 2020-25 (£ million)



P10 underperformance payments and P90 outperformance payments for C-Mex: Customer measure of experience and D-Mex: Developer services measure of experience are not shown in this figure but are shown in table 5.1 below.

Figure 2.2: Projected P10 underperformance payments and P90 outperformance payments for bespoke performance commitments over 2020-25 (£ million)

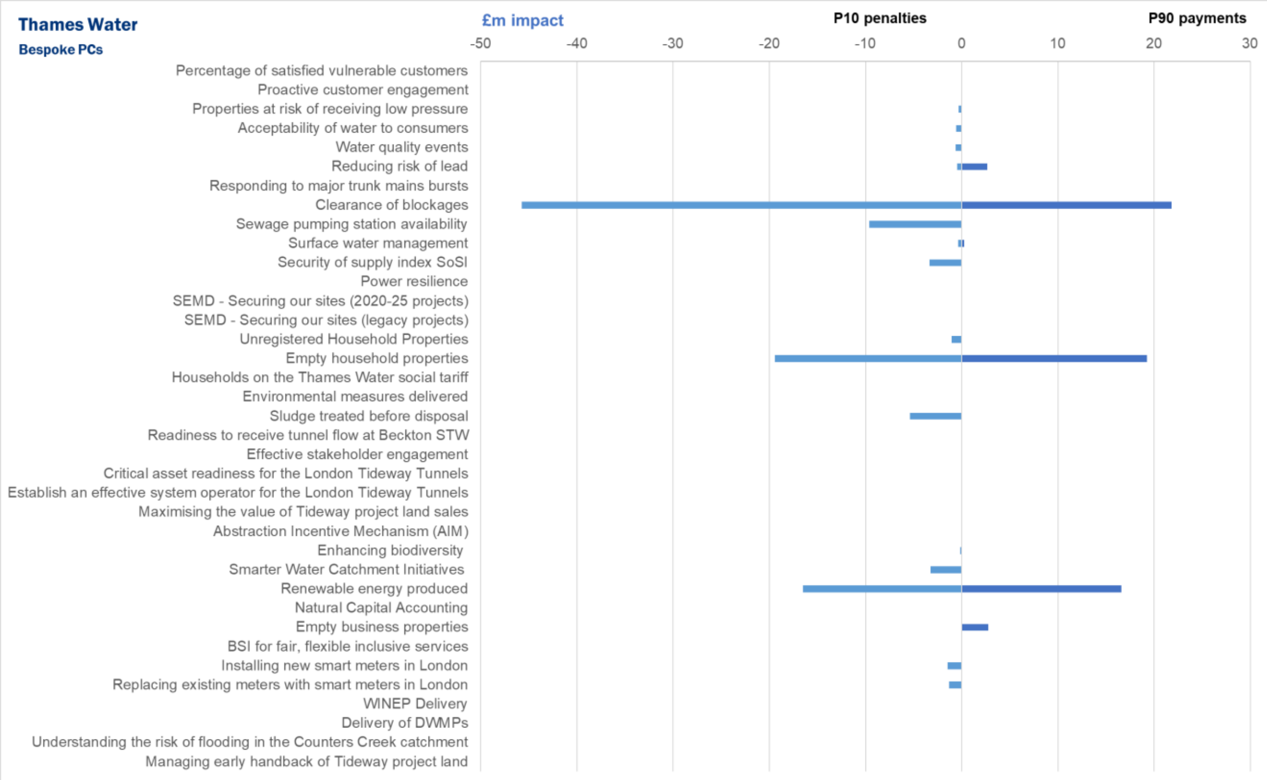


Table 2.4 provides an indication of the financial value of the overall package at the upper and lower extreme levels of performance (expressed as a percentage point impacts on RoRE (return on regulatory equity)) and the overall impact of our final determination decisions. Further information on how we have calculated these values is set out in the 'Delivering outcomes for customers policy appendix'.

Table 2.4: Impact of draft determination and final determination decisions on RoRE range

	Draft determination % of 5 year regulatory equity		Final determination % of 5 year regulatory equity	
	P10	P90	P10	P90
Thames Water	-3.27	+0.53	-1.68	+0.76

The figures in the above tables are estimates. In the PR19 methodology we said that we expect companies to propose approaches to protect customers in case their outcome delivery incentive payments turn out to be much higher than expected. We asked companies, in our initial assessment of business plans 'PR19 initial assessment of plans: Delivering outcomes for customers policy appendix', to put in place additional protections for customers where we considered protections were not adequate.

We are applying caps and collars to financially material and/or highly uncertain performance commitments and allowing caps and collars on other performance commitments where company proposals are supported by high quality customer engagement. Where, through these reasons, the vast majority of companies have caps and collars on a common performance commitment, we will apply caps and collars to all companies.

We are applying a standard sharing mechanism for all companies, where 50% of outperformance payments that exceed 3% of return on regulatory equity (RoRE) in any year are shared with customers through bill reductions in the following year. We set out further detail of the mechanism in the 'Delivering outcomes for customers policy appendix'.

In our PR19 methodology, we decided to replace the existing Service Incentive Mechanism (SIM) with two new common performance commitments to incentivise companies to provide an excellent experience for residential customers (our customer measure of experience, or C-MeX) and developer services customers (our developer services measure of experience, or D-MeX). C-MeX and D-MeX will operate from April 2020 and incentivise companies to improve their performance relative to other water companies and the wider economy.

We set out further details on how C-MeX and D-MeX will operate in the 2020-25 period, including any changes from draft determinations, in the 'Customer measure of experience (C-MeX) and developer services measure of experience (D-MeX) policy appendix'.

2.3 Delivering a framework for resilience in the round

Resilience is one of our four themes for PR19. We set out our expectations for water companies' business plans in our PR19 final methodology. Overall, Thames Water's September 2018 business plan falls significantly short of demonstrating that the company has applied an integrated resilience framework that will deliver resilience in the round. The company's business plan provides some evidence of support from customer engagement and the undertaking of a comprehensive resilience maturity profile. It also assesses a range of mitigation options for the resilience risks identified, although only at a high level, including environmental options and has evidence of support from customers.

We recognise that it may take some time for companies to fully understand best practice approaches to resilience in the round and implementing a systems-based approach to resilience. In our initial assessment of business plans, we set Thames Water an action (TMS.LR.A2) to develop a resilience action plan which demonstrates that it has a framework in place to deliver resilience in the round, and to submit this to us by 22 August 2019. We expected the resilience action plan to build upon the feedback that we provided following our initial assessment of the business plan.

Thames Water submitted its resilience action plan to us more than five weeks late, on 30 September 2019. Overall, Thames Water's resilience action plan falls short of our expectations in many areas. In particular, we are concerned that:

- the company's action plan is high level and does not provide sufficient detail or substance to give us confidence that it provides a framework capable of delivering resilience in the round. We expect the resilience action plan to provide a detailed framework capable of delivering resilience in the round;
- the company does not respond to our feedback from the initial assessment of business plans on areas such as the prioritisation of risks and the maturity assessment. We expect the company to clearly respond to our feedback and demonstrate how this informed the development of its action plan.
- the company does not demonstrate how the maturity assessment has been used to identify the priorities in its action plan. We expect the company to clearly demonstrate how its action plan is influenced by an understanding of its baseline maturity; and
- whilst the company refers to the need to develop a clear line of sight between risks to resilience, planned mitigations and its package of outcomes in its submission, it does not include any actions relating to planned mitigations within the 'Line of sight' work-stream in its action plan. We expect the company's resilience action plan to demonstrate how systems will be developed to provide a clear link between risks to resilience, planned mitigations and the ability to deliver its package of outcomes.

Overall, Thames Water, along with the sector, has further work to do to implement a fully integrated resilience framework. The company should continue to work with the sector, with Ofwat, and across sectors to incorporate best practice and address the concerns highlighted about its resilience framework above. Ofwat plans to engage the sector through its strategy to encourage further joint development of resilience approaches to accelerate best practice through the industry. We also may consider the progress companies have made as part of assessing company business plans in the 2024 price review.

3 Cost allowances

Key changes from the draft determination

- Our final determination wholesale allowance for Thames Water £9,252.1 million. This compares with £8,456.4 million at draft determination. In retail, our final determination allowance is £754 million[6].
- Our base allowance is affected by a number of changes we have made since draft determinations:
  - we include company outturn data from 2018-19 in our econometric models;
  - we exclude non-section 185 diversions costs (i.e., diversions other than those required by section 185 of the Water Industry Act 1991) from our econometric models and allow companies to recover related income outside the price control, from the relevant transport authority
  - we strengthen the catch-up challenge applied to wholesale modelled base costs. We use the 4th placed company in wholesale water and the 3rd placed company in wholesale wastewater as an efficiency benchmark, rather than the upper quartile company at draft determinations;
  - we reduce the frontier shift challenge from 1.5% per year to 1.1% per year, but we extend to all wholesale base costs.
- We make a £27.7 million upward adjustment to our base allowance for water network plus, and a £81.1 million upward adjustment for wastewater network plus. The adjustments are due to a relatively high forecast of population growth in 2020-25 in the company's supply area.
- We make a conditional allowance of £300 million to improve the performance of the water network in London. The allowance is subject to a closely scrutinised gated process where we will confirm the amount and approve proposed deliverables at every stage;
- We make a conditional allowance of £180 million to improve the resilience of water supply to North East London. The allowance is subject to a closely scrutinised gated process where we will confirm the amount and approve the company's plans at every stage.

Throughout price review 2019 we set out that we expect companies to demonstrate an increase in cost efficiency. In our final determinations, we set a cost-outcomes package that provides a strong incentive for companies to invest and operate efficiently and at the same time deliver a marked improvement in their level of performance, particularly on outcomes that matter to customers and the

[6] Amendment to first bullet to remove reference to draft determination.

environment. Our cost-outcomes package is demanding but achievable. It will incentivise companies to innovate, which will pave the way for a more efficient, higher performing sector, with a more meaningful, trusted relationship with customers.

In its September 2018 business plan and the April 2019 revised business plan, Thames Water's total requested costs were significantly above what it has incurred historically. To ensure customers pay only for efficient costs we challenge the company's proposed costs and investment programme where appropriate. Thames Water revises its business plan in its representations to the draft determination. This plan substantially reduces its required base and enhancement expenditure. As a consequence, our overall totex allowance at final determinations is marginally greater than the expenditure the company requests. However, when we factor in our expectation of a higher income gained from land sales associated with the Tideway Tunnel than the company assumes, we allow a net totex slightly lower than the company's request.

The final determination includes £480 million of conditional allowances relating to water supply infrastructure in London. We allow £180 million to investigate risks to resilience and the mitigation of risk to water supplies in North East London. We are also stepping in to make an allowance of up to £300 million to improve the performance of the London water network. These two allowances are to ensure Thames Water develops proposals to effectively mitigate risk and significantly improve asset health and service resilience. Both are conditional on Thames Water delivering an agreed scope of work through a gated process.

Thames Water will face greater scrutiny on these allowances than would normally be the case. We will return the allowance to customers unless Thames Water provides a clear and well thought through plan. We expect Thames Water to demonstrate that it understands the challenges facing its network and treatment works resilience and to produce well thought-through plans in a defined time frame with clear and measurable deliverables. The plan should identify and commit to new performance standards that capture likely benefits to performance from any planned work. Specifically in relation to the £300 million allowance to improve network performance, in addition to the conditions above, a further condition is that Thames Water's plan must also include a commitment from Thames Water's shareholders to make a substantial contribution to the cost of the improvement works.

We provide more information about the additional £480 million allowances and other cost matters in an additional document where we explain our assessment and decisions in more detail.

Our approach to setting total expenditure (totex) allowances is detailed in our publication 'Securing cost efficiency technical appendix'. In addition to challenging companies to be more efficient we have also, where appropriate, set safeguards to protect customers if specific investments are not delivered as planned.

In the 'Thames Water – Cost efficiency final determination appendix' we provide more detailed information on our cost challenge for enhancement expenditure, our allowance for cost adjustment claims and transitional expenditure and our unit cost adjustments related to uncertain schemes in WINEP.

3.1 Allowed expenditure for wholesale services

Table 3.1 shows total expenditure (totex) allowances by year and by wholesale price control for the period 2020-25. We phase our allowed totex over 2020-25 using the company business plan totex profile.

Table 3.1: Totex[1] by year for wholesale controls, 2020-25 (£ million, 2017-18 CPIH deflated prices)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total	Company August 2019 - total
Water Resources	105.6	114.1	139.1	140.6	94.3	593.7	670.5
Water network plus	944.0	964.1	911.0	869.6	809.3	4,498.0	4,338.6
Wastewater network plus	793.9	828.5	823.2	765.2	689.9	3,900.7	3,756.4
Bioresources[2]	93.3	135.3	138.4	119.9	103.4	590.3	705.0
Tideway	22.6	34.4	20.1	-191.0	-216.7	-330.6	-210.3
Total	**1,959.4**	**2,076.3**	**2,031.9**	**1,704.4**	**1,480.2**	**9,252.1**	**9,260.1**

[1] Totex includes all costs. This includes pension deficit recovery costs, third party costs, operating lease adjustments, allowances related to the development of strategic regional water resource solutions and costs that are assumed to be recovered through grants and contributions.
[2] The bioresources control is an average revenue control. The totex allowance in our draft determination is based on a forecast level of tonnes of dry solids.

Table 3.2 sets out the components of our totex allowance. The main components are base and enhancement costs. Base expenditure refers to routine, year on year costs, which companies incur in the normal running of their business to operate, maintain and incrementally improve service to customers. Enhancement expenditure refers to investment for the purpose of enhancing the capacity or quality of service beyond base level.

Our base costs for wholesale water include operating costs (excluding enhancement opex) and maintenance costs. In wholesale water, base costs also include costs associated with the connection of new developments (i.e. new developments and new connection costs) and costs for addressing low pressure. In wastewater, base costs include new connections and growth, growth at sewage treatment works and costs to reduce flooding to properties that were previously assessed as enhancement expenditure.

We adjust allowed costs to reflect a change in the accounting treatment of leases as discussed in the 'Securing cost efficiency technical appendix'. We use the adjustment to operating costs that the company proposed in its business plan.

Our draft determination allowance included all revenues and costs in relation to diversions. This approach was criticised by companies who said that it did not take into account forecast step changes in diversions costs for some companies as a result of large infrastructure projects such as High Speed 2 (HS2). Following our draft determinations consultation, we exclude revenue relating to diversions other than those required by section 185 of the Water Industry Act 1991 ('non-section 185 diversions').

Non-section 185 diversions costs are included in table 3.2. Companies will be able to recover most of the non-section 185 diversions costs directly, usually from transport authorities, outside of the price control. This is in addition to our total revenue allowance.

Table 3.2: Wholesale price control - a breakdown of totex, 2020-25 (£ million, 2017-18 CPIH deflated prices)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Thames Tideway	Total
Base expenditure	342.4	3,357.8	3,413.8	583.3	-324.8	7,372.5
Enhancement expenditure	119.2	988.5	361.2	-	-	1,468.9
Operating lease adjustment	-2.4	-9.7	-11.3	-0.8	-5.8	-30.0
Gross allowed totex for calculation of cost sharing rates	**459.2**	**4,336.6**	**3,763.8**	**582.5**	**-330.6**	**8,811.4**
Strategic regional water resources solutions and other cash items	116.3	62.9	-	-	-	179.2
Third party costs	14.8	18.7	20.0	0.7	-	54.1
Non-section 185 diversions	-	49.9	93.6	-	-	143.5
Ex-ante cost sharing adjustment	-	-	-		-	-
Gross totex	**590.2**	**4,468.1**	**3,877.4**	**583.2**	**-330.6**	**9,188.3**
Grants and contributions after adjustment for income offset[1]	-	180.5	188.7	-	-	369.2
Net allowed totex (used in PAYG calculation)	**590.2**	**4,287.6**	**3,688.6**	**583.2**	**-330.6**	**8,819.0**
Pensions deficit recovery costs[2]	3.4	30.0	23.3	7.1	-	63.8
Total	**593.7**	**4,317.5**	**3,712.0**	**590.3**	**-330.6**	**8,882.9**

[1] Includes price control and non-price control grants and contributions.
[2] We are displaying pension deficit recovery costs separately as they are not included in the calculation for PAYG (see section 4).

Movement in allowed wholesale expenditure between draft and final determinations

Table 3.3 compares our totex allowance at final determination to our allowance at draft determination. The table only includes base and enhancement expenditure. That is, it excludes pension deficit recovery costs, third party costs, and costs for strategic regional water resources development where relevant.

Following the change in approach to non-section 185 diversions costs discussed above, for final determinations, our allowance also excludes non-section 185 diversions costs of the amount stated in table 3.2. Our draft determinations allowance does not exclude these costs.

Table 3.3 also provides the company's requested costs in its April 2019 submission, and its revised requested costs in August 2019, in response to our draft determinations for slow-track companies.

Thames Water significantly reduces its requested costs in its representations across both wholesale water and wholesale wastewater. For final determinations we have also increased our allowance. Table 3.4 provides further detail.

Table 3.3: Totex by service, 2020-25 (£ million, 2017-18 CPIH deflated prices)

Price Control	Company April 2019	Company representations, autumn 2019	Draft determination allowance	Final determination allowance
Wholesale water	5,300.3	4,710.9	4,163.9	4,807.9
Wholesale wastewater	5,005.1	4,313.5	4,346.0	4,358.4
Thames Tideway	-210.3	-210.3	-327.7	-324.6
Total	**10,095.1**	**8,814.1**	**8,182.2**	**8,841.6**

Table 3.4: Totex by type of cost, 2020-25 (£ million, 2017-18 CPIH deflated prices)

	Draft determination allowance	Final determination allowance
Base expenditure	7,523.3	7,697.3
Enhancement	986.6	1,468.9
- Environmental obligations (WINEP)	447.9	474.0
- Supply-demand balance and metering enhancement	267.7	296.8
- Resilience enhancement[1]	86.9	30.8
- Other enhancement[2] (including raw water deterioration, sludge quality and growth, meeting lead standards and improving taste/odour/colour.)	184.0	667.4

[1] in its representations Thames Water removes its request for funding to improve resilience beyond what we allowed for in draft determination. We are providing conditional funding to address resilience risks.
[2] This shows the conditional enhancement allowance we make for improving water network performance in London which is not in the costs the company requests.

3.2 Wholesale base expenditure

Table 3.5 shows a comparison between the company's requested and our allowed base expenditure.

Table 3.5: Base expenditure, 2020-25 (£ million, 2017-18 CPIH deflated prices)

Price Control	Company August 2019	Final determination allowance
Water Resources	347.8	342.4
Water Network plus	3,080.4	3,357.8
Wastewater Network plus	3,119.3	3,413.8
Bioresources	697.2[7]	583.3
Total	**7,174.8**	**7,697.3**

Note company business plan base costs exclude enhancement opex.

For final determinations, we retain our approach of including growth related expenditure in our base econometric models. We also make an adjustment depending on whether the company operates in an area with a relatively high or low forecast of population growth, relative to the historical average for the sector. This

[7] Amendment for bioresources costs to read £697.2 million

follows representations made at draft determinations that the models did not adequately compensate for companies with a high growth forecast. We consider that the models over-compensate for companies that operate in an area with a low growth forecast. We consider that using the symmetrical adjustment approach set out in our PR19 methodology best accommodates for these factors.

As the population growth forecast for Thames Water for the period 2020-25 is higher than the historical average growth rate in the sector, we make a positive adjustment to the company's wholesale water base allowance of approximately £27.7 million, and a positive adjustment to the company's wholesale wastewater base allowance of approximately £81.1 million. More details of our approach can be found in 'Securing cost efficiency technical appendix'.

Thames Water requests £10.9 million for the development of the Drainage and Wastewater Management Plans (DWMPs) in line with the DWMP framework published by Water UK. At draft determination, we did not consider there was sufficient evidence to make an adjustment to our base allowance for costs associated with the development of the DWMPs. Following our review of the outcome of Defra's recent consultations on DWMPs, and the additional information in Thames Water's representation, we agree that some additional investment is required to develop DWMPs to ensure a more consistent basis for long-term planning of drainage and wastewater services as recognised by the 21st Century Drainage Programme supported by Water UK, Defra and the EA. As a result, we make a partial allowance of £5.7 million in line with our DWMPs cost estimate approach, described in the 'Securing cost efficiency technical appendix'.

Thames Water disagrees with our approach of not making an allowance for changes in business rates due to revaluations. We recognise the uncertainty and limited company control over the level of business rates after a revaluation. For final determinations, we maintain our approach to setting business rates allowances without an allowance for revaluations but, to address the risk and limited controllability, we allow for an uncertainty mechanism – see section 4.4.5 for more details. Our approach to setting allowances for business rates is set out in the 'Securing cost efficiency technical appendix'.

3.3 Enhancement expenditure

For wholesale enhancement expenditure we challenge the scope of work, the evidence provided to support solution options and the efficient delivery of programmes. We cost benchmark with the rest of the industry where we can.

Table 3.6 summarises our allowances for enhancement expenditure.

Table 3.6: Enhancement expenditure, 2020-25 (£ million, 2017-18 CPIH deflated prices)

Price Control	Company August 2019	Final determination allowance
Water Resources	187.8	119.2
Water Network plus	1,094.9	988.5
Wastewater Network plus	497.0	361.2
Bioresources	0.0	-
Total	**1,779.7**	**1,468.9**

Our final determination allows Thames Water £1,469 million to invest in improvements to service, resilience and the environment. Key parts of this allowance are:

- £474 million for the environmental obligations set out in WINEP across water and wastewater programmes
- £203 million for a large-scale metering programme
- £31 million to improve the resilience of its water and wastewater services.
- £94 million for supply-demand balance schemes, to support long-term drought resilience
- £77 million to reduce the scale of unplanned outages at water treatment works
- £67 million to replace lead water pipes

We also make two conditional allowances relating to water supply infrastructure in London. We allow £180 million to investigate and mitigate risks to the resilience of water supplies in London. Further we are stepping in to make an allowance of up to £300 million to improve the performance of the London water network. These two allowances are to ensure Thames Water develops proposals to effectively mitigate risk and significantly improve asset health and service resilience. Both are conditional on Thames Water delivering an agreed scope of work through a gated process. Thames Water will face greater scrutiny on these allowances than would normally be the case.

Below we discuss key areas of our determination on enhancement cost proposals. Our document 'Thames Water - Cost efficiency final determination appendix' sets out in more detail the cost allowances by investment area for each price control, and we give full reasoning in our published cost assessment models (enhancement feeder models and cost claims feeder models).

Water network improvement

In our final determination we are stepping in to make an allowance of up to £300 million to improve the performance of the London water network. We make this allowance, over and above its existing capital maintenance mains replacement programme, for a programme of works in the period 2020-25 to deliver better service for customers. Thames Water is a clear outlier in the performance of its water network. The scale of the issue is such that we do not think it is in the best interests of customers to wait another five years for Thames Water to provide better evidence, meaning progress would not begin until 2025 at the earliest. We are therefore stepping in to provide an allowance to first produce a plan and then start to improve service in the 2020-25 period, protect customer's interests, promote long-term asset health, learning and innovation in the company and supply chain.

This allowance is not funding Thames Water to achieve delivery of its commitments in PR14 and PR19. We expect a clear delineation of reporting of its outputs and network performance under this framework, reporting on London and the rest of its region separately. We do not necessarily expect companies to achieve common service levels on all network asset health measures or leakage as we accept that performance may partially lie in the levels of service we asked it to meet in the past, reflecting performance levels in previous periods, and legacy network condition and investment, and not just the management and operation of the network. In previous price reviews, Thames Water was set a lower (but improving) level of service than other companies, meaning for example Thames Water was expected to have a higher number of mains bursts per km of main than its peers. However more recently the scale and impact of the deficiency in asset health causes us serious concern, and we consider that inefficient planning and delivery of work contributed to this poor performance, and this was reflected in Thames Water business plan. At PR19 we are setting performance commitments that require improved performance, taking account of good performance in the sector and the company's historical actual and targeted performance. We do not allow poor performance against earlier targets in a previous period to result in less stretching performance in the future. We therefore protect customers against risk of 'catch 'up' spend.

We will return the allowance to customers unless Thames Water provides a clear and well thought through plan. We expect Thames Water to demonstrate that it understands the challenges facing its network and to produce a well thought-through plan in a defined time frame with clear and measurable deliverables. The plan should identify and commit to new performance standards that capture likely benefits to performance from any planned work.

We consider that inefficiency contributed to Thames Water's current poor network performance. Thames Water's plan must also include a commitment from its shareholders to make a substantial contribution to the cost of the performance improvement works.

We will confirm the appropriate allowance based on the agreed value of the programme, progression through the gates to our satisfaction and the value of the work completed to our satisfaction. In particular, where the conditions of the first gate are not met we will return the full £300 million allowance for performance of the London water network to customers. We will return the full allowance, or part of the allowance, to customers through an end of period reconciliation.

We set out further details of our expectations in 'Thames Water - Cost efficiency additional information'. We expect the company to define and take full ownership of the programme of works, its governance and its reporting.

Resilience

At final determination we include a conditional allowance of up to £180 million to investigate risks to resilience and the mitigation of risk to water supplies in North East London. This allowance is conditional upon Thames Water undertaking further analysis of the risks to resilience and its approach to the mitigation of risks within a gated-process. We consider that it is vital to ensure water supplies are resilient, however we do not consider that the evidence Thames Water provides is sufficient to allow us to endorse its proposed plan of work in North East London. We have concerns regarding how Thames Water identifies risks and mitigations, their prioritisation and the timetable for delivery.

We consider that the risks that Thames Water identifies may present some serious risks to water supply and if following further scrutiny, they are confirmed to be so serious, we are not convinced that delaying investing to mitigate them until the 2025-30 period is in the best interest of customers. We are therefore stepping in to make an allowance that is higher than the company requests in its representation business plan. We will use a gated process to progress work to improve resilience whilst also protecting customers from inefficient costs and poorly targeted investment. We base our allowance on Thames Water's April 2019 business plan submission but we expect the plan in this area to be fully re-evaluated. We will scrutinise the analysis and any planned capital programme and challenge the level of investment through the gated process.

Our approach requires Thames Water to deliver an agreed scope of work to progress through a series of gates. Through this process we expect to agree with the company an appropriate risk analysis methodology and a baseline against which to consider service failure scenarios and risk management measures. Through a screening process we expect the company to arrive at a preferred set of intervention options and then deliver these interventions. We will confirm the appropriate allowance based on the agreed value of the programme, progression through the gates to our satisfaction and the value of the work completed to our satisfaction. We will return the full allowance, or part of the allowance, to customers through an end of period reconciliation.

We require Thames Water to propose a customer protection mechanism to incentivise its timely and efficient completion of the work. We set out further details of our expectations in 'Thames Water – Cost efficiency additional information'. However, it is for the company to define and take full ownership of the programme of works and its governance.

The company does not raise substantive issues regarding its draft determination allowance for power resilience at water and wastewater sites, for which we apply a cost challenge based on our assessment of options and evidence that supports that costs are efficient. We allow £13.2 million of investment to protect against power outages at wastewater treatment works and sewage pumping stations and £17.6 million to protect power supplies of 31 water sites. As a result, we maintain our draft determination allowance for this investment.

Our final determination allows Thames Water to invest up to £210.6 million in resilience enhancement across water and wastewater.

Leakage

We expect an efficient company to achieve its stretching performance commitments from our base allowance. Only where the company's performance commitment goes beyond the industry forecast upper quartile leakage performance, do we make an enhancement allowance for leakage reduction. As this is not achieved by Thames Water, our allowance is unchanged from draft determination and we do not allow any of the requested £157.0 million under enhancement. In 'Securing cost efficiency technical appendix' we set out our policy on the funding of leakage reduction costs, including how we derive the upper quartile threshold for leakage enhancement costs.

Metering

The company requests £326.8 million to install new meters and provide supporting infrastructure. The company considers it has factors unique to its operating region, such as a high proportion of flats requiring internal installations that increase its costs of installing meters. We assess the breakdown of the components the company provides, challenging where there is insufficient evidence for higher costs. We make an allowance based on a unit cost that is higher than that specified by our industry metering model to reflect company-specific factors. We also consider an efficient uplift for replacing existing meters with smart meters due to the company-specific factors. As a result we allow £203.3 million which is an increase of £25.2 million from draft determination. We provide further details of our assessment in the ‘Thames Water - Cost efficiency additional information’

Internal interconnections

At final determination we assess the company’s request for £18.9 million, for an interconnection within its Guilford water resource zone, in our supply-demand balance enhancement assessment. At draft determination the company included these costs in its growth enhancement proposals which we considered within our base allowance. For final determination we change our approach in response to the company’s representation. We make an allowance of £14.4 million after challenging costs because the company provides limited justification for the scheme’s size and insufficient evidence it has considered a full range of options or demonstrably efficient costs.

Our allowance for enhancing the supply demand balance investment that delivers benefits in 2020-25 is unchanged from draft determination.

Security

The company requests £121 million enhancement funding to improve the security at its water sites to meet the requirements of the Security and Emergency Measures Direction (SEMD). The funding it requests in its representation is higher than it proposed in its April 2019 business plan. The company provides further clarity around which ‘uncertain’ sites it now includes within its 2020-25 programme.

We allow the company £14.4 million which is unchanged from our draft determination. The additional sites it includes within its representation plan have already been funded through our 2015-20 price control allowance. The company states that it did not have full knowledge of the security scope and costs associated with its 2015-20 plan. We do not consider this to be a sufficient and convincing evidence to demonstrate why we should allow additional funding for these sites.

Performance related enhancement

We do not allow Thames Water its requested £70.5 million enhancement expenditure relating to the water quality compliance risk index. There is no new statutory obligation in this area, and that Thames Water already has a duty to maintain wholesomeness, minimise supply interruptions, and operate effective strategies and efficient processes for customers. The allowance for this is within base costs.

We do not make an allowance for Thames Water to reduce supply interruptions. The company requests enhancement funding of £45 million to improve its supply interruptions performance. Funding for the company to catch-up with upper quartile performance is within our base allowance. Any outperformance is rewarded through the outcome delivery incentive.

As at draft determination we make an allowance of £77 million for Thames Water to improve its unplanned outage performance to ensure that the company provides resilient supplies to its customers. We consider that this allowance, in addition to that within our base allowance, is sufficient for the efficient delivery of the stretching performance commitment. The company must achieve unplanned outage of 2.34% in 2024-25 from the starting level in 2020-21 of 6%, as presented by the company. The outcome delivery incentive rates are adjusted so that the £77 million amount is returned if the reduction over the period to 2.34% is not achieved.

We do not make any enhancement allowance for Thames Water to reduce pollution incidents. Funding for Thames Water to meet upper quartile performance is within our base allowance. Any outperformance is rewarded through the outcome delivery incentive framework.

Wastewater environmental obligations (WINEP)

The company requests £381.1 million and our overall allowance for the wastewater programme within WINEP is £328.1 million. Our comparative assessment shows Thames Water's proposals to be inefficient in a number of areas including the flow to full treatment and phosphorus removal programme, but relatively efficient in enhancing storage volumes at sewage treatment work programme.

Strategic water resource development

In addition to the enhancement programme above, we allow Thames Water £179 million to progress the development of strategic regional water resource solutions, including Abingdon reservoir and the River Severn to River Thames transfer

3.4 Thames Tideway costs

The Thames Tideway Tunnel is the main component of a solution to reduce overflows of untreated sewage into the tidal River Thames in order to achieve compliance with the Urban Wastewater Treatment Directive. The tunnel is being delivered by Tideway, a third-party infrastructure provider and is expected to be completed by 2027.

Thames Water has an important role on the project during construction and into the tunnel's operation, particularly on disposing of surplus land after construction activities have finished and preparing for the tunnel's operation.

Thames Water has a separate price control for its activities related to the Thames Tideway Tunnel.

Table 3.7: Totex expenditure for Thames Tideway, 2020-25 (£ million, 2017-18 CPIH deflated prices)

Service	Company view August 2019	Final determination allowance
Costs	134.3	119.8
Land sales	-344.6	-444.6
Total	**-210.3**	**-324.8**

We assess the Thames Tideway Tunnel costs associated with the construction, system commissioning and system operation of the tunnel. Our view is that there is additional income available from the sale of land associated with the tunnel. We also consider that costs associated with the future construction and operation of the tunnel are likely to be lower than the company presents. On land, we have completed our own analysis and conclude that the land values proposed by Thames Water are appropriate assuming land is sold without any planning permission, but we consider there is further value in pursuing additional ways to maximise revenue from selling the land.

3.5 Cost sharing

In the water resources, water network plus and the wastewater network plus controls we have a cost sharing arrangement. In these controls, when a company overruns its totex allowance, the additional cost incurred above our allowance will be shared between its investors and customers. When a company spends less than its totex allowance, it will share the benefits with customers.

Thames Water's September 2018 business plan was assessed as requiring significant scrutiny at the initial assessment of plans. In our PR19 methodology we set out that for companies whose plans are assessed to need significant scrutiny, we will set a reduced cost sharing rate of 75% for underperformance and 25% for outperformance. When we published our view of costs at the initial assessment of plans we said we would decide at the final determination whether to apply a reduced cost sharing rate, or calculate the rates based on our approach for slow track companies, to reflect whether the company had engaged positively to address our concerns with the plan over the remainder of the price review process.

For the final determination, we confirm that we are applying the reduced cost sharing rate for Thames Water, but only in respect of underperformance. For outperformance we are calculating the sharing rate as we do for slow track companies. While the company makes substantive progress in some areas, its engagement has not been appropriate. For example, it submitted two revised plans in April 2019 and did not confirm which plan it will be delivering until October 2019. It also submitted late information and we are intervening in a number of important areas in its final determination (see 'Significant scrutiny application of lower cost sharing rates and outcome delivery incentive cap' technical appendix for details).

We calculate the outperformance sharing rate based on a 50% weight of the company's final cost proposals in its August 2019 representation to the draft determination and 50% weight on the September 2018 business plan. We explain our approach to calculating cost sharing rates in the 'Securing cost efficiency technical appendix'.

Table 3.8 sets out the cost sharing rates for PR19 and net totex that is subject to cost sharing at the end of the 2020-25 period. We calculate cost sharing rates based on totex gross of grants and contributions (but after making adjustments for operating leases and excluding costs of strategic regional water resources development costs, third party costs and pension deficit recovery costs). At the end of the 2020-25 period, we will apply cost sharing to totex net of grants and contributions.

The cost sharing for Thames Tideway is not presented in the table. We calculate the cost sharing for Thames Tideway based on the ratio of the company's August 2019 view of totex to our allowance, before deduction for land sale. The cost sharing is 42.2%.

For final determination we introduce an uncertainty mechanism for business rates and abstraction charges. Under the uncertainty mechanism these costs are subject to different cost sharing rates. We discuss the uncertainty mechanism in section 4.4.5. Our allowance for business rates and abstraction charges costs are excluded from table 3.8.

Table 3.8: Cost sharing rates for 2020-25 and totex for end-of-period reconciliation

	Water resources	Network plus - water	Network plus - wastewater
Totex for cost sharing rates – September 2018 business plan (£m)	538.4	5,092.8	4,346.2
Totex for cost sharing rates – August 2019 (£m)	535.5	4,175.4	3,616.4
Weighted company view of totex for cost sharing rates (£m)	**537.0**	**4,544.2**	**3,981.3**
Gross allowed totex for cost sharing rates (£m)	**459.2**	**3,856.8**	**3,763.8**
Cost sharing ratio	1.18		1.06
Cost sharing rate – outperformance	32%		44%
Cost sharing rate – underperformance	75%		75%
Grants and contributions before the deduction of income offset (£m) [8]	-	187.0	86.4
Abstraction charges and business rates (£m) [9]	81.7	353	131.3
Net allowed totex subject to cost sharing reconciliation (£m) [10]	**377.5**	**3,316.8**	**3,546.0**

[8] Amendment to Grants and contributions before the deduction of income offset (£m) for Network plus – water and Network plus – wastewater
[9] Amendment to Abstraction charges and business rates (£m) for Water resources, for Network plus – water and Network plus – wastewater
[10] Amendment to Net allowed totex subject to cost sharing reconciliation (£m) for Water resources, for Network plus – water and Network plus – wastewater

3.6 Note to calculate the cost sharing rates for wholesale water we remove the £480 million conditional allowances from our gross allowed totex for cost sharing rates. We also remove the £180 million conditional resilience allowance from the company's September 2018 business plan totex for cost sharing rates.Allowed expenditure in residential retail

Thames Water requests costs in residential retail for 2020-25 that are less efficient than our efficient baselines. We challenge the company's proposals and set an allowance for the company that is 8% lower than it requests. We note that the company is among those most significantly underperforming on its residential retail allowances for 2015-20 despite allowing a glide path as part of PR14 final determinations. We maintain our view that our residential retail allowance provides an appropriate basis for setting cost allowances for Thames Water.

Thames Water submitted two cost adjustment claims in residential retail. One relates to the impact of high population transience on retail costs and the other to an investment in a billing system. For population transience, we consider the changes we made at draft determinations related to transience – modifying the sign of the coefficient to positive and adding transience as a variable to one total retail cost model – were sufficient to fully account for transience costs and therefore make no further adjustment.

Customer Relationship Management database

Thames Water submits a cost claim of £43.8 million, related to depreciation costs on an investment in a customer relationship and management billing system, which it undertook within our PR14 allowance. The company argues that since this investment was allowed by us at PR14, we should allow the continued depreciation on this investment.

We disagree with the company's premise that, because we allowed this investment at PR14, we should accept the claim and make an adjustment to our allowance for Thames Water at PR19. The company has to justify the cost claim in the context of our PR19 approach and demonstrate that the claim is material. We therefore do not accept the company's argument that it is inappropriate to apply the materiality threshold for a retail cost claim to this investment, and assess this proposal against our framework for a cost adjustment claim.

At PR14, the average cost to serve (ACTS) approach for the residential retail control did not include depreciation costs. We made separate allowances for depreciation, and under our PR14 approach we automatically allowed depreciation costs as long as they were below our materiality threshold. For this reason we allowed Thames Water's depreciation for its proposed investment in a billing system over the period 2015-20. In our PR19 framework for assessing residential retail costs, depreciation costs are included in the calculation of efficient baselines, and companies' allowance therefore includes an allowance for depreciation. We expect Thames Water to demonstrate that our depreciation allowance is insufficient, taking into consideration the long term. While there may be periods when a company has higher investment requirements, it will have periods with lower investment requirements. Companies should take a long-term view of our allowance and balance expenditure requirements between multiple regulatory periods.

We maintain the rejection of this cost claim. Our residential retail allowance includes an allowance for depreciation, which is implicit within our overall retail allowance, which we estimate to be in the range of £20- £40 million. This provides Thames Water sufficient funding to recover the depreciation of its billing system for the period 2020-25 as well as covering routine depreciation costs. In addition, the claim does not pass the materiality threshold for a residential retail claim after deducting the value of the implicit allowance, even if we applied a conservative estimate of the implicit allowance range.

Table 3.9 sets out our total expenditure allowance for residential retail. Our allowance does not include any of our allowed pension deficit recovery costs. These costs have been wholly allocated to wholesale controls.

Table 3.9: Expenditure, residential retail, 2020-25 (£ million, nominal)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Residential retail	143.7	147.5	151.1	154.3	157.4	754.0
Company view	182.8	170.8	165.3	161.5	155.5	819.5

Note the residential retail control is an average revenue control. Allowed cost and the associated allowed revenue is based on a forecast of the number of customers. There will be an end-of-period true up based on the actual number of connected households.

3.7 Direct procurement for customers

We set out in our PR19 methodology that we expect company business plans to consider direct procurement for customers where this is likely to deliver the greatest value for customers. Direct procurement for customers promotes innovation and resilience by allowing new participants to bring fresh ideas and approaches to the delivery of key projects. Companies are to consider direct procurement for customers for discrete, large-scale enhancement projects expected to cost over £100 million, based on whole-life totex.

North East London Resilience scheme

In section 3.3, we explain that at final determination we include an allowance to enhance the resilience of the London water supply system. This allowance is conditional upon Thames Water undertaking further analysis of the risks to resilience and its approach to the mitigation of risks. We consider that it is vital to ensure water supplies are resilient, however we do not consider that the evidence Thames Water provides is sufficient to allow us to endorse its proposed plan of work in North East London. We set out further details of our expectations in ‘Thames Water – Cost efficiency additional information’.

Thames Water recognises that interventions to enhance the resilience of the London water supply system may be suitable for a direct procurement for customers process under which a project is delivered by procuring a third-party (a competitively appointed provider) to design, build, finance, operate and maintain infrastructure.

We expect Thames Water, in re-evaluating its plan in this area and arriving at a preferred set of intervention options, to consider the use of a direct procurement for customers process. If interventions are delivered via direct procurement for customers, we will apply an end of period reconciliation as detailed in ‘Thames Water – Cost efficiency additional information’.

Consideration of representations on our draft determination

Table 3.10 lists the representations we have received that are specific to direct procurement for customers and the North East London Resilience scheme and shows where to find more information on our responses in this document.

Table 3.10 Representations specific to the North East London Resilience scheme

Area	Company-specific representations	Detailed commentary in this appendix
Uncertainty mechanism	Requirement for an uncertainty mechanism for North East London Resilience scheme	Delivering value for customers in large projects

Overall, we consider that the procurement of preferred intervention options through a direct procurement for customers process may identify the best value for customers and protect customers' interests due to improved transparency.

Developments to facilitate direct procurement for customers

We will consult on the licence modifications, necessary to enable the delivery of direct procurement for customers schemes, in 2020. Our expectation is that any competitively appointed provider would be procured in the 2020-25 price control period and the contract would cover construction and operation for a period no less than 20-years.

Under the direct procurement for customers process the need to include regulatory mechanisms to manage uncertainty as a result of change is recognised. If changes in external factors dictate that a scheme may no longer demonstrate value for money through a direct procurement for customers process, a scheme could instead, with our agreement, be delivered through a traditional in-house procurement process. We discuss the uncertainty mechanism further in 'Delivering value for customers in large projects'. As at final determination we include a conditional allowance to enhance the resilience of the London water supply system we do not consider that an uncertainty mechanism is required.

For the North East London Resilience scheme, no bespoke outcomes for direct procurement for customers are proposed by Thames Water. We have determined that additional outcomes specific to direct procurement for customers are not appropriate for this period 2020-25 given the further work that the company needs to do to re-evaluate its plan in this area.

Thames Water identified a number of potential strategic regional water resource solutions that may be suitable for direct procurement for customers, for example Abingdon reservoir, London effluent reuse and the River Severn to River Thames transfer schemes. We expect these schemes and any other major schemes which may arise due to significant changes to Thames Water's business plan to be reviewed against the direct procurement for customers criteria, as detailed in the PR19 methodology. If the criteria are met, we expect Thames Water to undertake further work to review detailed costs and commitments to ensure delivery is via the most efficient route, and to assess delivery via direct procurement for customers, to ensure that customers receive the best value.

4 Calculation of allowed revenue

Key changes from the draft determination

The key changes we are making to the calculation of allowed revenue in the draft determination are:

- We allow £10,289.9 million of revenue across all price controls for Thames Water in the final determination, compared to £9,574.9 million in the draft determination and £10,694.0 million in the company's April 2019 revised business plan.
- The allowed return on capital for the wholesale price controls is 2.92% (on a CPIH basis, 1.92% on a RPI basis), a reduction of 0.16 percentage points from our draft determination, based on our assessment of market evidence. The allowed retail margin for the household retail control remains at 1.0%, consistent with the draft determination.
- We make a technical intervention to PAYG rates to maintain Thames Water's approach and take account of our view of the mix of operating and capital expenditure. We also revise our approach to determining this mix to take better account of the nature of our interventions to cost allowances.
- We increase PAYG rates to bring forward allowed revenue by £125 million to address a notional financeability constraint. This compares to £41 million of PAYG revenue advanced in the draft determination.
- Allowed revenue includes Thames Water's contribution to the innovation competition.
- We revise our approach to calculating grants and contributions.
- We reflect Thames Water's latest information on its actual performance in 2018-19 and expected performance in 2019-20 from its 15 July submission.

This section sets out the calculation of allowed revenue for each of the price controls, based on our assessment of efficient costs. We set out in section 4.1 the components of allowed revenue for each of the price controls. We then set out information relevant to the calculation of the components of that allowed revenue in sections 4.2 and 4.4.

4.1 Allowed revenue

We calculate revenue separately for each of the wholesale controls and for the residential retail control. We set out the calculation of five year revenues for each of these controls in this section.

4.1.1 Wholesale controls

For the wholesale controls (that is water resources, water network plus, wastewater network plus and bioresources), allowed revenue is calculated based on the following elements, not all elements are applicable to all wholesale controls as set out in table 4.1.

- Pay as you go (PAYG) – this reflects the allocation of our efficient totex baseline to costs that are recovered from revenue in 2020-25. The proportion of totex not recovered from PAYG is added to the regulatory capital value (RCV) which is recovered over a longer period of time.
- Allowed return on capital – this is calculated based on our assessment of the allowed return on capital multiplied by the average RCV for each year.
- RCV run-off – this reflects the amount of RCV that is amortised from the RCV in the period of the price control.
- PR14 reconciliations – this reflects the application of out/underperformance payments from PR14 through revenue adjustments in 2020-25.
- Corporation tax allowance – this is estimated from projected corporation tax rates, profit forecasts and assumed levels of tax relief contained in our financial model for the draft determination.
- Grants and contributions – this represents revenue that we expect to be received from developers in respect of work undertaken by companies to service new developments. It includes income from connection charges, infrastructure charges and section 185 diversion recharges. The total grants and contributions amount deducted from totex may not agree to this amount, as we only include grants and contributions income relating to the price control (and some income is outside the price control).
- Non-price control income – income from charges excluded from the price controls. For example, this includes bulk supplies, standpipes, unmeasured cattle troughs, and other services. In a change from our draft determination, we also now include diversions recharges which are in respect of the New Roads and Street Works act 1991 activities and other non-section 185 diversions. We deduct the forecast income from these charges from the allowed revenue, because costs relating to these charges are included in the calculation of allowed revenue.

- Innovation competition – this represents the additional revenue that the company will collect from its customers for the purpose of a collectively funded innovation competition for the period 2020-25. The amount each company's customers will contribute will be proportionate to individual company revenue at draft determinations. We expect the revenue collected from customers to be ring-fenced and administered so that it will not be used for purposes other than the innovation competition.
- Revenue re-profiling – this reflects the change in revenue in 2017-18 prices as a result of adjustments made to annual revenues to smooth the final bill profile consistent with customer preferences. The financial model calculates revenue adjustments on a net present value (NPV) neutral basis.

We set out the calculation of the allowed revenue for Thames Water's wholesale controls in table 4.1. We summarise the total of the build up of allowed revenue as five year totals, however our financial model calculates the allowed revenue on an annual basis for the purposes of our draft determination. We state the allowed revenue for each price control on an annual basis in section 6.

We explain how we calculate PAYG, RCV run-off and the allowed return on capital in section 4.2, the revenue adjustments for PR14 reconciliations in section 4.3, and other elements of allowed revenue in section 4.4.

Table 4.1: Calculation of allowed revenue (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway	Total – Final determination	Total - Draft determination
Pay as you go	326.8	1,907.1	1,768.1	231.5	8.6	4,242.1	3,491.1
RCV run-off	85.2	1,397.3	1,468.8	388.2	0.3	3,339.8	3,357.3
Allowed return on capital	50.3	812.6	662.1	187.5	152.3	1,865.0	1,989.9
Revenue adjustments for PR14 reconciliations	0.5	-73.1	29.0	0.0	73.1	29.5	3.5
Fast track reward	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tax	0.0	0.0	0.7	0.3	2.7	3.8	5.1
Grants and contributions after adjustment for income offset (price control)	0.0	130.6	86.4	0.0	0.0	217.1	171.8
Deduct non-price control income	-18.1	-25.5	-51.2	0.0	0.0	-94.8	-94.8
Innovation competition	0.0	15.9	18.4	0.0	0.0	34.3	0.0
Revenue re-profiling	-0.2	-2.0	-2.0	-0.4	-0.1	-4.7	1.2
Final allowed revenues	444.6	4,163.0	3,980.5	807.1	236.9	9,632.0	8,925.0

We set out the calculation of allowed revenue for each wholesale control on an annual basis in the ‘Thames Water - Allowed revenue appendix’ in table 1.1 to Table 1.5.
In our new strategy for regulating water and wastewater companies in England and Wales, we highlight that innovation is crucial for meeting the challenges the sector faces.

The adoption of innovative approaches is key to delivering long-term resilience and great customer service at an affordable price, and the sector will need to step up and increase innovation in order meet the strategic challenges it faces in a cost-effective and sustainable way. We also want to see companies work more effectively together and with their supply chain to better tackle these challenges.

Our outcomes and total expenditure approach facilitate this innovation, by giving companies the flexibility and freedom to adopt innovative means of delivering services. We are promoting innovation by setting Thames Water stretching outcome performance commitments. Our outcome delivery incentives approach means that companies have to return money to customers where they fall short, but it also gives companies the opportunity to earn additional financial payments if they successfully improve performance and deliver for customers above and beyond the level expected of most companies. This encourages companies to look for innovative ways of delivering better services to customers and improving the environment.

However, as well as our existing package of measures which encourages companies to innovate individually, we have been considering how we can stimulate innovation more widely in the sector and encourage collaborative innovation initiatives.

In our new strategy consultation[11], we explored options for customer-funded interventions designed to drive innovation to benefit customers in the longer-term. Having reviewed the responses to the consultation, we are publishing our decision in ‘Driving Transformational Innovation in the Water Sector’ alongside the PR19 final determinations, confirming that we are making up to £200 million available for innovation activities for the period 2020-25 through the introduction of an innovation competition. We will work together with companies and other stakeholders in the sector to set up a competition which will effectively drive innovation in the sector to the benefit of customers across England and Wales.

[11] Ofwat’s emerging strategy: Driving transformational innovation in the sector.

4.1.2 Residential retail control

For the residential retail control, allowed revenue is calculated as:

- Retail cost to serve – this reflects our efficient view of costs per customer for the retail business.
- Net margin on wholesale and retail activities – this is calculated based on the wholesale revenue applicable to residential retail customers, plus the retail cost to serve, with a net margin applied. Net margins are calculated excluding any adjustments to residential retail (see table 4.2 below) – the full calculation is set out in our financial models.
- Our methodology set out an early view of the retail margin that applies for the retail price controls. This was used by Thames Water in its business plan and is unchanged in our final determinations.

Allowed revenue for the residential retail control is set on a nominal basis. We present the make-up of the allowed revenue in nominal prices in table 4.2.

Table 4.2: Retail margins, 2020-25 (nominal price base)

	Draft determination	Final determination
Total wholesale revenue - nominal (£m)	9,645.0	10,424.0
Proportion of wholesale revenue allocated to residential (%)	78.6%	78.5%
Residential retail costs (£m)	753.5	754.0
Bazalgette Tunnel pass-through costs (£m)	448.0	450.5
Total retail costs (£m)	**8,336.4**	**9,295.2**
Residential retail net margin (%)	1.0%	1.0%
Residential retail net margin (£m)	**87.5**	**93.7**
Residential retail adjustments (£m)[1]	-121.7	-119.6
Residential retail revenue (£m)[2]	**719.3**	**728.1**

[1] Residential retail adjustments for the PR14 residential retail service incentive mechanism and residential retail revenue reconciliations are set out in table 4.11. The figures in table 4.2 are in nominal prices, and the figures in 4.11 are in 2017-18 FYA CPIH deflated prices. The difference between the two tables is due to the difference in price bases.
[2] Residential retail revenue is the sum of the net margin, retail costs, and adjustments. Company view may not sum as this may include other adjustments.

We set out the calculation of residential retail revenue on an annual basis in the 'Thames Water - Allowed revenue appendix' in table 1.6.

4.2 Cost recovery now and in the long term for the wholesale controls

Our totex cost allowances are sufficient to meet an efficient company's operating and capital expenditure. Companies recover this expenditure either in period from current customers using PAYG or add it to the RCV and recover from future generations of customers using the RCV run-off rates. Consistent with our methodology, we assess how each company's choice of PAYG and RCV run-off rates reflect the levels of proposed expenditure, bill profiles, affordability and customer views relevant to the short and the long term.

To determine the allowed revenue, the PAYG rate is applied to the totex allowance for each wholesale control for each year of the price control. The proportion of the totex allowance that is not recovered in PAYG is added to the RCV and recovered from customers in future periods. For the final determinations we revise our approach to the calculation of PAYG rates to better reflect the source of changes we make to costs claimed by companies as a result of our totex cost assessment. Our revised approach follows a process of further consultation with companies following the submission of representations on the draft determination. We explain our revised approach in ‘Securing cost efficiency technical appendix.

In this section we set out our approach to calculating the PAYG rates, the RCV to which the allowed return on capital is applied and the RCV run-off rates.

4.2.1 PAYG in allowed revenue

We calculate total PAYG totex for each year of each wholesale price control based on the totex allowance for each year multiplied by the relevant PAYG rate for that year. To this we add allowed pension deficit recovery costs to derive total PAYG revenue.

We summarise in table 4.3 the average PAYG rates across 2020-25 for each wholesale control, and the calculation of total PAYG revenue. The PAYG rates shown in the table are a weighted average across the five years 2020-25, the annual PAYG revenue and PAYG rates for each wholesale control are shown in the ‘Thames Water - Allowed revenue appendix’, tables 2.1 to 2.5.

To PAYG totex we add the allowed costs for pension deficit recovery set out in table 3.2 to derive the total amount to be recovered in 2020-25 for each price control.

Table 4.3: PAYG allowances for each wholesale control (5 year)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway[1]	Total
Totex allowance (£m)	590.2	4,287.6	3,688.6	583.2	-330.6	8,819.0
Final determination PAYG rate (%)	54.8%	43.8%	47.3%	38.5%	-2.6%	47.4%
Pay as you go totex (£m)	323.4	1,877.2	1,744.8	224.3	8.6	4,178.2
Pension deficit recovery cost (£m)	3.4	30.0	23.3	7.1	-	63.8
Total pay as you go (£m)	**326.8**	**1,907.1**	**1,768.1**	**231.5**	**8.6**	**4,242.1**

[1] The net totex allowance for the Tideway control is negative taking account of the net effect of operating costs (which produces a positive pay as you go totex) and income from sale of land. The final determination PAYG rate is a negative input to the financial model to provide the required total pay as you go allowance.

Table 4.4: PAYG rates for each wholesale control (5 year)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway[1]
April 2019 company plan (%)	62.2%	40.1%	39.3%	37.5%	-9.1%
Draft determination (%)	46.5%	40.9%	38.9%	37.5%	-9.1%
Final determination (%)	54.8%	43.8%	47.3%	38.5%	-2.6%

[1] See footnote to table 4.3.

In the draft determination, we applied Thames Water's approach to PAYG rates of recovering in each year an amount equivalent to operating costs. In its representations, Thames Water agrees it is appropriate to use the underlying rates however, this may vary depending on the overall scale of the totex programme. Thames Water provides recalculated PAYG rates within the representations with a reduced capex scope which increases the natural PAYG rate. Within the representation plan, Thames Water propose natural PAYG rates based on the overall totex allowance and the scope of capex.

Taking account of company representations, we have revised our approach to the calculation of the mix of operating and capital expenditure following our totex interventions.

In order to calculate the mix of operating and capital expenditure we follow the approach set out in ‘Securing cost efficiency technical appendix’. We set out how we apply the technical intervention in the ‘Aligning risk and return technical appendix’ and we have published our calculation of the PAYG rates for each company alongside our determinations.

Following our assessment of notional financeability of the final determination, we are increasing PAYG rates for all years for all wholesale controls by 1.68% to increase cash flows in the 2020-25 period and to align to credit ratios targeted by the company on a notional basis, bringing forward £125 million of allowed revenue from future periods. We set out our financeability assessment in section 5.2.

The movements in PAYG rates between the company plan, the draft determination and final determination reflect the differences in the mix of operating and capital expenditure in our totex allowance along with the increase to PAYG rates for notional financeability in the final determination.

4.2.2 Opening RCV adjustments

As part of its business plan Thames Water proposed allocations of the RCV for both water resources and bioresources price controls based on Ofwat guidance. We are allocating the company’s RCV between the existing wholesale controls and these new controls in accordance with the proportions proposed by Thames Water.

We make reconciliation adjustments (‘midnight adjustments’) related to the company’s performance against incentive mechanisms from previous price reviews and for land sales in order to determine the opening RCV for the period of the PR19 controls. We also adjust the RCV upwards to reflect a change in the accounting treatment of leases, which causes some assets formerly recognised as operating leases to be recognised on the company’s Balance sheet. In doing so, we follow the approach set out in IN 18/09 Guidance for reporting operating leases in PR19 business plans. We use the adjustment proposed in the company business plan.

Table 4.5: Opening RCV, 1 April 2020 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources
RCV – 31 March 2020	5,915.1		6,717.3	
% of RCV allocated by control	4.76%	95.24%	77.56%	22.44%
RCV – 31 March 2020	281.6	5,633.5	5,210.0	1,507.4
Midnight adjustments to RCV	9.5	189.6	-269.8	N/A
Midnight adjustments relating to operating leases	5.6	22.4	26.1	1.9
Opening RCV – 1 April 2020	296.7	5,845.4	4,966.3	1,509.3

Table 4.5a: Opening RCV, Thames Tideway, 1 April 2020 (£ million)

	Thames Tideway
RCV – 31 March 2020	1,459.6
Midnight adjustments to RCV	-184.7
Midnight adjustments relating to operating leases	6.1
Opening RCV – 1 April 2020	1,281.0

4.2.3 Allowed return on capital

Companies are allowed a return on the RCV, equal to the allowed return on capital.

In its representation, Thames Water incorporates an allowed return on capital for the wholesale price controls of 3.5% - CPIH deflated (2.5% - RPI deflated). This estimate is higher than our draft determination estimate of 3.08% - CPIH deflated (2.08% - RPI deflated). The company bases its higher estimate on a report by Frontier Economics, which estimates a range for the wholesale controls of 2.2% to 2.9% (RPI deflated).

The allowed return on capital for the wholesale price controls in our final determinations is 2.92% – CPIH deflated (1.92% – RPI deflated). We set out the basis for the allowed return on capital in our 'Allowed return on capital technical appendix'.

The PR19 methodology confirmed we are transitioning to CPIH as our primary inflation index from 2020. At 1 April 2020, we will index 50% of RCV to RPI; the rest, including totex that is added to the RCV, will be indexed to CPIH. Table 4.6 and table 4.7 set out the opening and closing balance for each component of RCV as of 1 April 2020 and 1 April 2025 respectively.

The PR19 methodology confirms our protection of the value of the RCV as at 31 March 2020 across each of the wholesale price controls. This applies to the RCV that is defined as 'RPI inflated RCV' and 'CPIH inflated RCV' in tables 4.8 and 4.9; this RCV is run-off (or amortised) over time. Totex that is added to the RCV from 1 April 2020 is stated as 'post 2020 investment'.

In determining the 'Allowed return on capital' revenue building block, we apply the relevant deflated allowed return on capital to the average RCV for the year for each component (RPI inflated, CPIH inflated and post 2020 investment). This results in an allowed return on capital for each wholesale control over the period 2020-25 as set out in table 4.8.

Table 4.6 Opening RCV by wholesale control for each component of RCV, 1 April 2020 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway	Total
RPI inflated RCV	148.4	2,922.7	2,483.2	754.6	640.5	6,949.4
CPIH inflated RCV	148.4	2,922.7	2,483.2	754.6	640.5	6,949.4
Other adjustments	-	-	-	-	-	-
Total RCV	**296.7**	**5,845.4**	**4,966.3**	**1,509.3**	**1,281.0**	**13,898.7**

Table 4.7: Closing RCV by wholesale control for each component of RCV, 31 March 2025 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway[1]	Total
RPI inflated RCV	126.1	2,497.0	1,978.8	620.3	670.2	5,892.4
CPIH inflated RCV	120.4	2,335.1	1,874.7	592.7	640.3	5,563.3
Post 2020 investment	238.2	2,151.4	1,689.8	298.6	-339.2	4,038.7
Other adjustments	-	-	-	-	-	-
Total RCV	**484.7**	**6,983.4**	**5,543.4**	**1,511.6**	**971.3**	**15,494.4**

[1] Post 2020 investment is negative for the Tideway control due to the sale of land.

Table 4.8: Allowed return on capital by wholesale control for each component of RCV, 2020-25 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway	Total
RPI inflated RCV	13.1	261.6	213.3	66.2	63.0	617.3
CPIH inflated RCV	19.5	382.1	315.7	98.3	93.5	909.1
Post 2020 investment	17.7	168.9	133.2	23.0	-4.2	338.6
Other adjustments	-	-	-	-	-	-
Allowed return on capital	**50.3**	**812.6**	**662.1**	**187.5**	**152.3**	**1,865.0**
Company April 2019 – return on capital	53.3	962.8	804.2	222.5	181.7	2,224.5

Note allowed return on capital is calculated by multiplying the annual average RCV for each element of RCV (RPI inflated, CPIH inflated and post 2020 investment) by the wholesale WACC for each control. The allowed return on capital for each year of the price control for each wholesale control is shown in the 'Thames Water - Allowed revenue appendix' in tables 4.1 to 4.5.

4.2.4 RCV run-off

RCV run-off is the proportion of the RCV which is recovered in the 2020-25 period. Companies are able to propose different run-off rates for RPI inflated and CPIH inflated RCV and also, for the water resources and bioresources controls, for post 1 April 2020 investment. Table 4.9 sets out the resultant RCV run-off revenue for each component of RCV for each wholesale control.

Table 4.9: RCV run-off on the RCV (5 year) (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway	Total
CPIH inflated RCV	27.9	587.6	608.4	161.9	0.2	1,386.1
RPI inflated RCV	28.6	550.7	606.3	166.0	0.2	1,351.7
Post 2020 investment	28.7	259.0	254.1	60.3	0.0	602.1
Total RCV run-off	**85.2**	**1,397.3**	**1,468.8**	**388.2**	**0.3**	**3,339.8**

Note total RCV run-off is calculated by multiplying the opening RCV by the relevant RCV run-off rate for each element of RCV (RPI inflated, CPIH inflated and post 2020 investment) by the RCV run-off rate for each control (50% of run-off is applied to post 2020 investment in the year of additions).

For the draft determination, we applied Thames Water's RCV run-off rates which are based on current cost depreciation within each wholesale control. Thames Water does not make any representations in relation to RCV run-off rates and we continue to apply the company's RCV run-off rates for the final determination.

Table 4.10 sets out the average RCV run-off rates across 2020-25 for each wholesale control proposed in the company's business plan and for our draft and final determinations.

Table 4.10: RCV run-off rates for each wholesale control (5 year)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway
Company April 2019 (%)	4.23%	4.21%	5.40%	5.01%	0.005%
Draft determination (%)	4.29%	4.20%	5.40%	5.04%	0.004%
Final determination (%)	4.26%	4.21%	5.40%	4.97%	0.003%

Note RCV run-off (%) reflects the average of the rates applied to the CPIH and RPI inflated RCV components across the 5 years 2020-25. Changes to totex allowances and PAYG rates for individual controls can result in small changes to the average RCV run-off rates presented in the table above.

The annual rates for each wholesale control are set out in the 'Thames Water - Allowed revenue appendix' in table 5.1 to table 5.5.

4.3 PR14 reconciliations

In PR14, we set mechanisms to incentivise companies to do the right thing for their customers. These financial incentives cover cost efficiency, outcomes performance, revenue forecasting (wholesale and retail), customer service (the service incentive mechanism), water trading and land sales. It is important to reconcile the financial impacts of these mechanisms in PR19 to ensure that customers only pay for the service the company delivers.

We are also applying adjustments to reflect performance in the final year of the 2010 to 2015 period, which could not be fully taken into account in PR14, and the inflation correction to the RCV from the capital expenditure incentive scheme (CIS). These adjustments apply to the RCV (the 'midnight adjustment') and revenue for the 2020-25 period. These adjustments are made in line with the 'PR14 reconciliation rulebook'.

We are publishing models for each of these reconciliations, and for the overall RCV and revenue adjustments on our website. 'Thames Water - Accounting for past delivery final decisions' provides a detailed explanation of all policy interventions we are making in the models. Table 4.11 summarises our interventions. Table 4.12 sets out the resulting adjustments to revenue and the RCV. The 'Thames Water - Accounting for past delivery appendix' sets out how these adjustments are allocated across controls and how the RCV adjustment feeds into the midnight adjustments to RCV set out in table 4.5.

The 'Accounting for past delivery technical appendix' sets our further details on our reconciliation of PR14 incentives, the residential and business retail service incentive mechanisms and our deliverability assessment.

For outcome delivery incentives, the information we use to reflect performance in 2019-20 is based on the company's latest expectations. Final figures for 2019-20 will not be able to be taken into account in PR19. We set out in the 'PR14 reconciliation rulebook' that we plan to complete the reconciliation for 2019-20 outcome delivery incentives at PR24 for 2025-30 so that we use final information.

However, most outcome delivery incentives for the 2020-25 period are in period and will have been reconciled before this date. In light of this we consider it would be more appropriate to complete this reconciliation in the autumn of 2020 and apply any change to bills for 2021-22 as part of the new in-period process. We are designating all of the financial PR14 performance commitments as being in-period for this purpose. Any adjustment between the 2019-20 forecast and actual figures should be modest and we do not expect a significant impact on bills. If, contrary to expectations the bill impact is more significant, we expect companies to take measures to smooth the impact for their customers. The new PR19 mechanism to share benefits with customers from unexpected high outcome delivery incentive payments in a year will not apply to PR14 outcome delivery incentives. Instead the PR14 protection that caps the impact across the five years 2015-20 will apply.

The above applies equally to the company's 2015-20 in period outcome delivery incentives and we use forecast information for 2019-20 to reconcile these outcome delivery incentives. For the avoidance of doubt, no application is required in 2019 for in period determinations.

Table 4.11: Reconciliation of PR14 incentives, interventions (2017-18 prices, unless otherwise stated)

Incentive	Intervention(s)
Outcome delivery incentives	We are retaining our intervention to include an underperformance payment of - £130.056 million (2012-13 prices, net of tax) for performance commitment SB3 (Counters Creek). Having reviewed the information and actively considered all issues raised in the representations provided to us, we consider Thames Water provide sufficient or convincing evidence for us to change our draft determinations. We maintain our view that Thames Water cancelled the Counters Creek scheme for reasons within Thames Water's control. We explain our assessment in detail in 'Thames Water - Accounting for past delivery additional information'. Our intervention reduces the wastewater RCV at the end of the 2015-20 period by - £148.801 million. To avoid double counting when returning the allowed expenditure back to customers for Counters Creek, we are removing the downward adjustment of £86.351 million Thames Water makes to the wastewater RCV in its business plan table App8. Our intervention changes the other wastewater RCV adjustment at the end of the 2015-20 period from – £87.503 million (2017-18 FYA CPIH deflated price base) to £0.000 million.
Residential retail revenue	No interventions required.
Wholesale revenue forecasting incentive mechanism	We are intervening to recalculate the values of the adjustments relating to the early payment of the end of period outcome delivery incentive penalties using the RPI data from table App23 of the 15 July submission Our intervention reduces the total WRFIM adjustment at the end of the 2015-20 period from £141.528 million (£74.787 million for water, £64.778 million for wastewater and £1.963 million for Tideway) to £141.480 million (£74.734 million for water, £64.782 million for wastewater and £1.964 million for Tideway).
Totex	We are intervening to change the 'Water: Final menu choice,' 'Sewerage: Final menu choice' and 'Sewerage: Final menu choice for the TTT' figures to full decimal accuracy as calculated in the PR14 populated final determination models. Our minor interventions increase the water totex revenue adjustment at the end of the period from - £5.118 million to - £5.165 million and reduces the wastewater totex revenue adjustment at the end of the period from - £1.017 million to - £0.996 million. For Thames Tideway, our intervention reduces the wastewater totex menu revenue adjustment from £72.260 million to £72.255 million. As mentioned above, to avoid double counting when returning the allowed expenditure back to customers for Counters Creek, we are removing the downward adjustment of £86.351 million Thames Water makes to the wastewater RCV in its business plan table App8.
Land sales	No interventions required.
Residential retail service incentive mechanism	We are intervening to set Thames Water's residential retail service incentive mechanism adjustment to -12.00% of residential retail revenue to reflect its performance from 2015-16 to 2018-19. This equates to -£102.823

Incentive	Intervention(s)
	million in total revenue over the period. This reduces revenue relative to the company's estimate of the mechanism's impact and is driven by updating our analysis to take account of companies' finalised scores for 2018-19.
Water trading	We are retaining our intervention to disallow the water trading import incentive claim for the trade with Northumbrian Water. We consider that Thames Water's representation does not present any new evidence compared to the evidence provided in its April 2019 revised business plan. The policy intent of the PR14 water trading incentives was to encourage new transfers of water between water companies. We do not consider that the trade between Northumbrian Water and Thames Water is a new transfer. The effect of the updated bulk supply agreement is to reduce the amount of water exported to Northumbrian Water which is a reduction in an existing trade. We consider that this reduction of an existing export cannot qualify as an import for Thames Water. We consider that water resources capacity was increased through the expansion of Abberton reservoir beyond the near-term needs. As a result, Northumbrian Water took the rational and efficient decision to enter into an agreement with Thames Water to reduce the amount of water it imports. We would have also disallowed the incentive if the companies had agreed a contract with no reference to the legacy contract or had duplicated the existing transfer infrastructure because the net effect would still be to reduce an existing trade as it reduces exports to the Essex and Suffolk Water region. As in the draft determination, we are allowing the incentive claim in respect of the import of water from RWE, as this is a new import agreement and consistent with the criteria set out in the trading and procurement code. Overall, our interventions reduce the total PR14 water trading revenue payment at the end of the 2015-20 period from £0.909 million to £0.470 million.
PR09 blind year adjustments	No interventions required.

Table 4.12: Reconciliation of PR14 incentives, 2020-25 (£ million, 2017-18)

Incentive	RCV adjustments		Revenue adjustments	
	Company view[1]	Ofwat view[1]	Company view[1]	Ofwat view[1]
Outcome delivery incentives	0.0	-148.8	-148.1	-148.1
Residential retail revenue	N/A	N/A	1.1	1.1
Wholesale revenue forecasting incentive mechanism	N/A	N/A	141.5	141.5
Totex	236.6	236.6	66.1	66.1
Land sales	-49.0	-49.0	N/A	N/A
Residential retail service incentive mechanism	N/A	N/A	-98.6	-102.8
PR09 blind year adjustments[2]	-267.8	-267.8	-25.4	-25.4
Water trading	N/A	N/A	0.9	0.5
Other adjustments	-113.9	-26.5	0.0	0.0
Total	**-194.0**	**-255.4**	**-62.5**	**-67.2**
Total post profiling[3]	N/A	N/A	-63.1	-68.0

[1] The company view is based on data from the 15 July 2019 company submissions. It does not reflect impacts of the subsequent representations. The Ofwat view is based on the 15 July 2019 company submissions and takes account of representations and any interventions we are making.
[2] PR09 blind year adjustments includes the CIS RCV inflation correction. We show these separately in 'Thames Water - Accounting for past delivery appendix'.
Note 3: Total post profiling is the total revenue over the period, taking account of the time value of money and the company's choices of how it wishes to apply revenue adjustments either in the first year or spread over a number of years.

4.4 Other allowed revenue

Other components of allowed revenue are:

- The fast track reward, where applicable;
- Corporation tax allowance – this is estimated from projected corporation tax rates, profit forecasts and assumed levels of tax relief contained in our financial model for the final determination.

- Grants and contributions – this represents revenue that we expect to be received from developers in respect of work undertaken by companies to service new developments.
- Non-price control income – this forecast income is deducted from the total allowed revenues, as this revenue is not recovered from the charges covered by the price control – but is expected to cover some of the costs included in the calculation of the price control.

Table 4.13: Calculation of other allowed revenue (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway	Total
Fast track reward	0.0	0.0	0.0	0.0	0.0	0.0
Tax	0.0	0.0	0.7	0.3	2.7	3.8
Grants and contributions (price control)	0.0	130.6	86.4	0.0	0.0	217.1
Deduct non-price control income	-18.1	-25.5	-51.2	0.0	0.0	-94.8

4.4.1 Taxation

We calculate a tax allowance reflecting the corporation tax that the company expects to pay in 2020-25. We calculate the tax allowance using our financial model based on the projected taxable profits of the appointed business and the current and enacted UK corporation tax rates and associated reliefs and allowances as at 30 September 2019. Any future changes to tax rates and allowances will be taken account of in the tax reconciliation model, further details are set out in the 'Aligning risk and return: technical appendix'.

Thames Water provided information in data tables relevant to the calculation of the expected tax charge. We accept Thames Water's updated tax information to remove the element of the tax adjustment relating to the intercompany loan. Following further information provided in response to a query we understand that part of the remaining adjustment to taxable profits included in the revised business plan relates to deficit repair pension contributions that are funded by shareholders. As our financial model only reflects the deficit repair payments that are funded by customers through price limits (consistent with the expectations set out in IN 13/17), further adjustments are not required.

We also remove the element of the adjustment relating to deficit repair pension contributions from the tax information and apply this to the final determination.

Table 4.14: Tax (£ million) – Breakdown by price control

	Water resources	Water network plus	Wastewater network plus	Bioresources	Tideway	Total
Tax	0.0	0.0	0.7	0.3	2.7	3.8

4.4.2 Grants and contributions

Companies receive grants and contributions from developers towards company expenditure to:

- reinforce the network as a consequence of new properties being connected;
- connect a new property (e.g. the meter and connection pipe);
- provide new water mains or public sewers (i.e. requisitions); and
- move an existing main or sewer or other apparatus at the request of a third-party (i.e. diversions).

Grants and contributions (price control)

Grants and contributions before the deduction of income offset allowances (i.e. ‘gross’ grants and contributions) are used to calculate net totex for cost sharing and within the developer services reconciliation adjustment, as explained in ‘Our approach to regulating developer services’.

Grants and contributions after the deduction of income offset allowances (i.e. ‘net’ grants and contributions) are used to calculate net totex for use in the financial modelling. This ensures that income offset allowances, that are funded by existing customers rather than developers, are captured within net totex that is used to calculate pay-as-you-go revenue and RCV additions. Developer services costs that are funded by developers are excluded from net totex, and are instead treated as grants and contributions within the financial model (as shown in tables 3.2 and 4.1).

Our approach to calculating 'gross' and 'net' grants and contributions is outlined in 'Cost efficiency technical appendix'. The main difference from draft determinations is that we no longer estimate a cost recovery rate for each company. The starting point for each calculation is 'gross' grants and contributions reported in companies' business plans. To arrive at 'net' grants and contributions we deduct company-specific income offset allowances rather than assume a common recovery rate for all companies. We also apply the modelled base cost efficiency challenge to grants and contributions to ensure alignment between grants and contributions and cost assessment.

Table 4.10 below shows our assumed amounts of 'gross' grants and contributions (price control) that is used to calculate net totex for cost sharing.

Table 4.156: Grants and contributions before the deduction of income offset allowances (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
Grants & contributions (price control; before deduction of income offset allowances)	0.0	187.0	86.4	0.0	273.4

Table 4.11 below shows our assumed amounts of 'net' grants and contributions (price control) that is captured within net totex that is used to calculate pay-as-you-go revenue and RCV additions.

Table 4.16: Grants and contributions after the deduction of income offset allowances (price control) (£ million) – breakdown by price control and category

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
Grants & contributions (price control)	0.0	130.6	86.4	0.0	217.1

Grants and contributions (non-price control)

For final determinations, we set non-section 185 diversions income outside of the price control, as explained in 'Our approach to regulating developer services'.

Table 4.17 below shows our assumed amounts of grants and contributions (non-price control) that are made up of non-section 185 diversions income.

Table 4.17: Grants and contributions (non-price control) (£ million) – breakdown by price control and category

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
Grants & contributions (non-price control)	0.0	49.9	102.3	0.0	152.2

4.4.3 Non-price control income

Non-price control income is income from the excluded charges defined in licence condition B. For example, it includes bulk supplies, standpipes, unmeasured cattle troughs, and other services. For the final determination we confirm that diversions which are not requested under section 185 of the Water Industry Act 1991, for example, works under the New Roads and Street Works Act 1991 or those associated with High Speed 2, are also excluded from the price control. These are capital contributions and so do not get shown in tables 4.1 and 4.13.

This is deducted from the total allowed revenues, as this revenue is not recovered from the charges covered by the price control – but is expected to cover some of the costs included in the calculation of the price control. We have reviewed the company forecast of 'non-price control income' and use this in the final determination.

Table 4.18: Non-price control income (£ million) – Breakdown by price control

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
Non-price control income	-18.1	-25.5	-51.2	0.0	-94.8

Note negative numbers represent a deduction from the allowed revenue.

4.4.4 Uncertainty mechanisms

Given the range of risk mitigation measures included in price controls, the PR19 methodology said that final determinations would only include bespoke uncertainty mechanisms where robust and compelling evidence was presented for that item. Thames Water does not propose any uncertainty mechanisms.

We are including a PR24 reconciliation mechanism for business rates in our final determination for Thames Water along with all other companies because:

- There is uncertainty about business rates costs because the Valuation Office Agency (VOA) will be carrying out revaluation exercises during 2020-25, and increases (or decreases) in cost levels could be material.
- Companies can only exercise limited control over cost levels by engaging with the VOA and, possibly, by considering the business rate implications of asset development choices.

We are also including a PR24 reconciliation mechanism for Environment Agency abstraction licence costs in our final determination for Thames Water along with all other companies serving England[12] because:

- The Environment Agency expects to consult on changes to its basis for setting abstraction licence fees during 2020 meaning that there is material uncertainty about company cost levels in 2020-25.
- Companies can only exercise limited control over cost levels by engaging with the consultation process and providing accurate information when required for licence fee setting purposes.

In each case, the cost variance to the company's PR19 cost allowance will be subject to a 75 (customer share):25 (company share) symmetrical sharing rate in the totex reconciliation at PR24. This means that the company will still be incentivised to manage costs efficiently, whilst receiving appropriate protection against material cost increases. Conversely, customers will receive a benefit if outturn costs are lower than the allowance levels we have set.

[12] The Environment Agency's responsibilities apply only to England.

5 Risk analysis and financeability

Key changes from the draft determination

The key changes made to the risk analysis and financeability elements of the draft determination are:

- For the final determination, we apply our view of a sector risk range for totex, C-Mex, D-Mex and financing costs (including embedded debt) as part of our assessment of risk ranges for our final determination. We also apply updated views on risk ranges for outcome delivery incentives, determined under our Outcomes Framework.
- We revise our notional dividend yield to 3.00% (from 3.15% in the draft determination) and apply a dividend growth of 1.18. This takes account of the allowed cost of equity in the final determination. For Thames Water we restrict the base dividend yield to 1.79% in our notional financeability assessment due to the high level of RCV growth in the final determination.
- We revise our approach to pension deficit recovery costs in our financial modelling of the notional company to match cash out flow for pensions deficit recovery costs to the allowed funding.
- For the final determination we advance allowed revenue by £125 million to ensure our determinations are financeable on the basis of the notional structure. This compares to £41 million revenue brought forward in the draft determination.

We consider the final determination is financeable on the basis of the notional capital structure.

Thames Water is responsible for ensuring it delivers its obligations and commitments in the context of its choice of capital and financing structure. The company proposes to remain highly geared in 2020-25 and may need to take further steps to improve its financial resilience. We will closely monitor changes in levels of the company's gearing, credit ratings and other key financial metrics during 2020-25.

In this section we discuss the possible range of returns for the notional financial structure. In section 5.1 we present the risk ranges of our final determinations for Thames Water. We comment also on the financeability of the final determination and any adjustments that we have made to the bill profile in section 5.2. We comment on the financial resilience of the actual company in section 5.3.

5.1 Risk analysis

The PR19 methodology set out that we expect companies to demonstrate a clear understanding of financial risk to the delivery of their business plans and to explain and demonstrate how they manage and mitigate that risk. It required companies to use return on regulatory equity (RoRE) analysis to assess the impact of upside and downside risk on the basis of their notional capital structures based on a prescribed suite of scenarios using the company's assessment of P10/P90 confidence limit values[13].

RoRE is calculated as the return on equity for the equity portion of the RCV based on our notional gearing assumption. A company's base RoRE is aligned with our allowed real post-tax cost of equity, but it can differ between companies because the blended real cost of equity will vary according to the proportion of the RCV (and notional regulatory equity) that is indexed to RPI or CPIH[14]. The proportion of RCV (and notional regulatory equity) that is linked to RPI or CPIH varies between companies according to factors that include the size of the investment programme, the proportion of totex that is capitalised and RCV run-off rates.

In addition, base RoRE includes the margin for the retail price control. While the retail margin is 1% on retail and wholesale costs for all companies, it varies between companies when measured against regulatory equity.

Table 5.1 and figure 5.1 sets out the annual average risk ranges for Thames Water in our final determination. The risk ranges show the plausible range of company returns based on Thames Water's RCV and cost data for 2020-25, the allowed equity return and a notional gearing level of 60%. The final determination ranges reflect our approaches to the assessment of risk ranges for outcome delivery incentives and our approach to apply a common approach to the assessment of risk ranges for totex and financing costs for the sector.

Our PR19 methodology aims to increase the strength of financial incentives to better align the incentives placed on companies with the interests of customers. Our determinations aim to be stretching to encourage companies to deliver further

[13] P90 is the performance threshold at which there is only a 10% chance of outturn performance being better. P10 is the performance threshold at which there is only a 10% chance of outturn performance being worse.

[14] RPI is the retail price index; CPIH is the consumer price index including owner-occupiers' housing costs; both are published by the Office for National Statistics.

efficiencies and better levels of service to customers. The incentives we put in place incentivise companies to outperform the cost allowances and performance commitments set in our determinations, our incentive mechanisms also aim to protect customer interests where companies underperform.

Thames Water has a significant scope to earn upside from outperformance as well as the risk of lower returns from underperformance with modest negative skew overall to its overall risk range, driven primarily by outcome delivery incentives. Our view is that an efficient company should be able to achieve the base return on the notional structure. The onus is on companies to manage the risk and effect of any downside scenarios while maintaining financial resilience.

We asked companies to update their risk ranges in their representations. We state those risk ranges in table 5.1 against the cost allowances and base return on regulatory equity in our final determinations. These risk ranges are not fully comparable with our final determination ranges as they take account of company views of the cost efficiency and outcome delivery incentive stretch in our draft determinations which we revise for the final determinations.

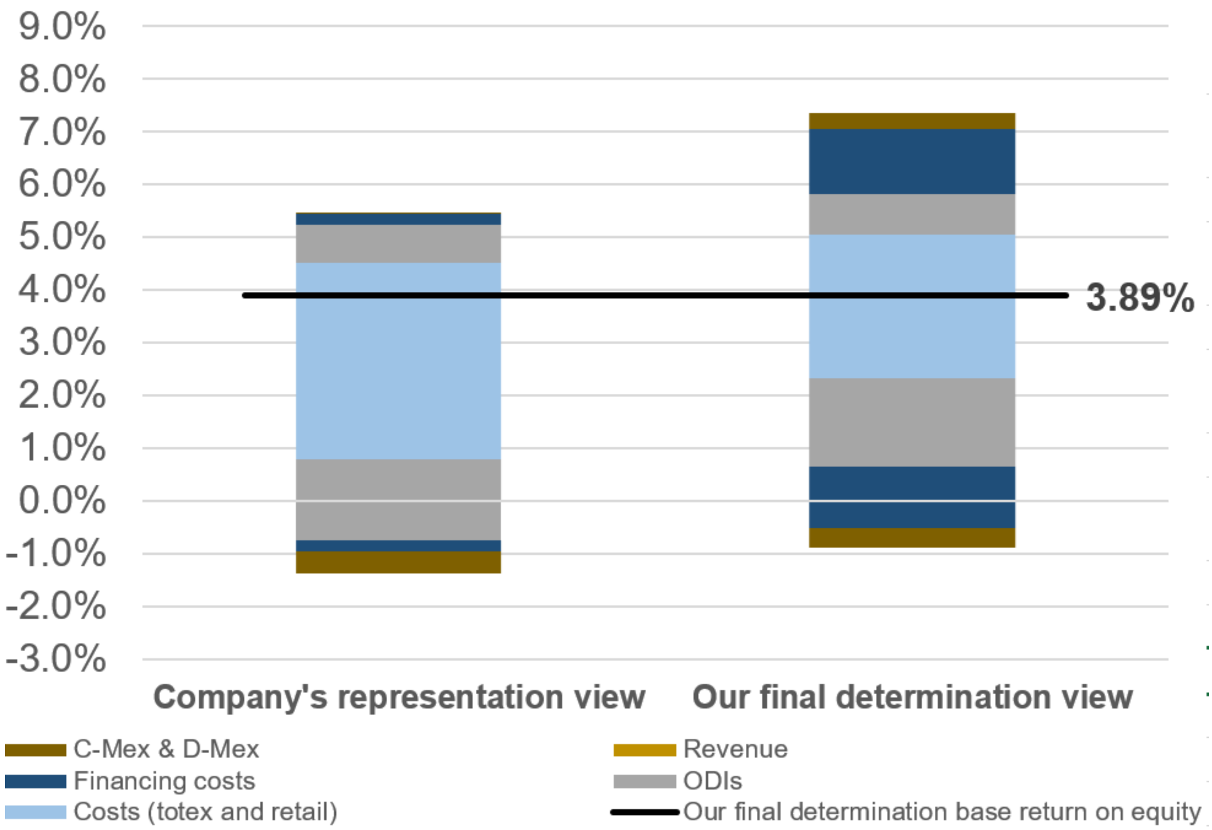
Table 5.1: Thames Water final determination risk ranges[15]

	Range implied in company representation		**Final determination ranges**	
Base RoRE	-		3.89%	
Risk ranges	**Lower bound**	**Upper bound**	**Lower bound**	**Upper bound**
Totex	-2.87%	0.56%	-1.33%	0.94%
Outcome delivery incentives	-1.54%	0.72%	-1.68%	0.76%
Financing costs	-0.21%	0.21%	-1.16%	1.23%
Retail costs	-0.24%	0.07%	-0.24%	0.24%
C-MeX and D-MeX	-0.42%	0.02%	-0.37%	0.32%
Revenues (includes Retail)	0.00%	0.00%	0.00%	0.00%
Total	**-5.27%**	**1.59%**	**-4.77%**	**3.48%**

[1] We calculate the company's range based on the resubmitted ranges the company states in its representation that are in monetary terms. As we have calculated the ranges in the financial model used for the final determination we have not stated the company's view of the base equity return.

[15] Wholesale controls – excludes Thames Tideway

Figure 5.1: Company representation and final determination RoRE ranges for Thames Water



Note representation view is based on Ofwat's calculation of the RoRE ranges for the company using the final determination financial model and is based on the company submission that accompanied its representation. To facilitate comparison with our final determination, we present the risk range around the base allowed return on equity for Thames Water's final determination.

The final determination risk range reflects the following interventions that we make for all companies:

- The totex range is our assessment of the plausible range based on evidence of the historic sector performance and taking account of the company's cost sharing rates that apply in its final determination.
- The financing cost risk range is based on our assessment of the range for a notional water company including both embedded and new debt.
- The outcome delivery incentive risk range has been determined under our Outcomes Framework as set out in table 2.4.
- The C-MeX risk range is calculated as 12% upside and 12% downside of Residential Retail Revenue, reflecting the cap and collar limits for this incentive.
- The D-Mex risk range is calculated as 6% upside and 12% downside of developer services revenue, reflecting the cap and collar limits for this incentive.

We note that Thames Water has increased its bad debt provision in its forecast costs for 2020-25, but this is alongside an expectation of falling bills in 2020-25. We are not convinced that Thames Water's risks should be so skewed to the downside therefore, for Thames Water's final determination we have revised the upside risk range to be symmetrical with its downside.

We set out further details on the issues above in the 'Aligning risk and return technical appendix'.

5.2 Financeability

Companies in the water sector must make significant investment both to maintain and deliver required enhancements to the asset base. Therefore it is important that companies are able to access finance on reasonable terms if they are to meet their obligations and commitments to customers. In recent price review periods, almost all of the new investment in this sector has been funded by debt and retained earnings, however, there may be a requirement for direct equity investment where there is a very significant investment requirement, to ensure companies maintain good credit quality.

We must set our determinations in the manner which we consider best calculated to satisfy our duties. Our financeability assessment considers whether the allowed revenues, relative to efficient costs, are sufficient for an efficient company to finance its investment on reasonable terms and to deliver its activities in the long term, while protecting the interests of existing and future customers. In carrying out our financeability assessment, we assume that an efficient company is able to deliver a level of performance that is consistent with our efficient cost allowances.

Our financeability assessment assumes there is no out/underperformance with respect to the levels of service provided to customers. Our approach protects the interests of customers as it ensures companies and their investors bear the consequences of inefficiency and underperformance in delivery of their obligations and commitments to customers.

We carry out our financeability assessment on the basis of the notional capital structure that underpins our allowed return on capital as companies are entitled to determine the financial structure appropriate for their circumstances, provided they bear the associated risks. For example, if a company's choice of financing structure results in it incurring higher debt costs than reflected in our view of efficient allowed returns, the company will bear this cost. The approach is consistent with meeting all of our regulatory duties and with the approach we and other regulators have taken in previous reviews.

Our PR19 methodology requires companies to provide Board assurance that the business plan is financeable on both the notional and their actual capital structures and requires companies to provide evidence to support these statements, including evidence supporting the target credit rating and that this is supported by the financial ratios that underpin the plan.

In its April business plan, Thames Water sets out that the company remains financeable on both actual and notional basis and supports this with independent assurance. The company states that its plan targets a credit rating of Baa1 on a notional basis.

Subsequently, we asked companies to provide additional Board assurance, in their representations in response to our draft determination, that they will remain financeable, taking account of the reasonably foreseeable range of plausible outcomes of their final determination including evidence of further downward pressure on the allowed return. Companies also took account of these issues in the risk analysis presented in section 5.1.

In its representations, Thames Water states the draft determination is not financeable under any reasonable set of resilience tests. Thames Water provides assurance on a representation plan that is underpinned by an allowed return on capital for the wholesale price controls of 2.50% - RPI deflated as discussed in section 4.2.3. The assurance sets out the representation plan is financeable and provides long-term resilience and Thames Water is satisfied it is maintaining customers' expectations.

The company states the representation plan targets Baa1 (Moody's) and BBB+ (S&P) on a notional basis and the actual capital structure however, states the plan is financeable on the notional balance sheet at Baa2 (Moody's) and BBB (S&P). Thames Water concludes that the representation plan requires no use of PAYG or RCV run-off levers to support notional financeability. The company sets out it can improve financial ratios to achieve the target credit rating by reducing notional dividends accordingly. Thames Water provides representations that for the final determination, following the assessment of notional financeability if the financial ratios are below appropriate metrics then it recommends the use of the PAYG rate to improve cash flows through 2020-25.

We have carefully considered the representations made by Thames Water including the qualifications on the assurances provided. We have considered this in the context that the allowed return which is based on market data is lower than our draft determination and the basis on which the company provided assurance about the financeability of its plan. However we are satisfied that the market data supports our view that allowed returns are sufficient to reward investors for the risks they face in a sector that already benefits from significant risk protections[16]. We set out the revisions we are making to our performance commitments and cost allowances elsewhere in this document. We consider the revenues allowed in our final determination, which reflect our assessment of efficient allowed costs, are sufficient for Thames Water to meet its obligations and commitments to customers on the basis of the notional structure. We comment on the financial resilience of the actual structure in section 5.3.

Our financeability assessment uses a suite of financial metrics based on those used in the financial markets and by the credit rating agencies. The key financial ratios are primarily cash flow measures of a company's earnings, leverage and ability to service its debt interest and principal repayments. We provide further detail of the key ratios in the 'Aligning risk and return technical appendix'.

The draft determination included an uplift to PAYG rates to improve notional financeability. In assessing financeability for the final determination, we remove any PAYG or RCV run-off revenue advanced in our draft determination.

RCV growth in Thames Water's final determination exceeds 10%. Therefore consistent with our policy approach set out in the 'Aligning risk and return technical appendix' we consider it is appropriate for equity to contribute to the funding of this growth. In our financeability assessment we restrict the base dividend yield to maintain gearing around the notional level of 60% in 2025, consistent with the gearing level that underpins the calculation of our allowed return. The resulting dividend yield we assume is 1.79% with dividend growth of 1.18%.

In table 5.2 we set out some of the financial ratios provided by the company in its business plan, and in our draft and final determinations.

Our financial modelling of the notional company suggests that Thames Water continues to face a financeability constraint. Therefore, consistent with the approach in the PR19 methodology, our final determination increases PAYG rates to bring

[16] These protections include appointments that confer effective monopolies for specified geographic regions; our commitment to remunerate efficient investment in the RCV as at 31 March 2020; price limit reopeners; inflation indexation; totex cost sharing; allowances for special cost factor claims; outcome delivery incentives; and reconciliation mechanisms for wholesale revenue, the cost of new debt and tax

forward £125 million of revenue to improve cash flows and financial ratios. The financial ratios stated in table 5.2 include the effect of the increase to PAYG rates.

Our in the round assessment of notional financeability is made on the basis of the financial ratios from our financial model. It takes account of the evidence that the company provides regarding the levels and thresholds of the financial ratios that underpinned its assurance statement on the notional financeability in its business plan (also stated in table 5.2). We note that the Board assurance statement that accompanied the company's representations was made in the context of the draft determination and its representation plan. Our assessment of notional financeability for the final determination is made in the context of changes made in our final determination. We consider that Thames Water's final determination is financeable based on the allowed revenues which include a reasonable allowed return on capital. The final determination is sufficient to ensure it will be in a position to deliver its obligations and commitments to customers.

Table 5.2: Ofwat calculation of key financial ratios – notional structure before reconciliation adjustments (5 year average)

	Business plan	Draft determinations	Final determinations
Gearing	62.01%	60.89%	60.52%
Interest cover	3.59	3.63	3.81
Adjusted cash interest cover ratio (ACICR)	1.46	1.46	1.50
Funds from operations (FFO)/Net debt	8.64%	8.80%	8.88%
Dividend cover	0.64	0.44	0.91
Retained cash flow (RCF)/Net debt	6.85%	6.82%	7.76%
Return on capital employed (RoCE)	3.36%	3.14%	3.11%

The basis of the calculation of the ratios is set out in the PR19 methodology.
Net debt represents borrowings less cash and excludes any pension deficit liabilities.
FFO is cash flow from operational activities and excludes movements in working capital.
Cash interest excludes the indexation of index-linked debt.

We set out the average PAYG and RCV run-off rates along with the RCV growth over 2020 to 2025 for Thames Water in table 5.3. RCV growth for the final determination is lower than in the company's April plan and the draft determination. Overall, changes to allowed expenditure, the revised approach to determining the mix of operating and capital expenditure and the uplift to the PAYG rates means less expenditure is added to RCV. We are not amending Thames Water's RCV run-off rates in our final determination.

Table 5.3: PAYG rates, RCV run-off and growth

	PAYG	RCV run-off	RCV growth
Company April 2019	40.9%	4.77%	29.77%
Draft determinations	40.2%	4.35%	11.71%
Final determinations	45.6%	4.75%	11.48%

The PAYG and RCV run-off rates are averages across five years and across all wholesale controls. We set out the changes we make to PAYG and RCV run-off rates along with the five year average for each control in section 4.2 and annual PAYG and RCV run-off rates in the 'Thames Water - Allowed revenue appendix'. Changes to totex allowances and PAYG rates for individual controls can result in small changes to the average RCV run-off rates presented in the table above.

In assessing the financeability of the notional company, we consider the headroom available in the final determination to allow the company to continue to meet its annual interest costs. We estimate 5 year headroom of £661 million above an adjusted cash interest cover of 1.0 times, providing headroom to our totex downside of £230 million and outcome delivery incentives downside of £302 million calculated as 1% return on regulatory equity. We set out further detail in relation to our approach to assessing headroom within final determinations in the 'Aligning risk and return technical appendix'.

5.3 Financial Resilience

It is the responsibility of each company to choose and manage its financial structure to maintain financial resilience in the long term. A company's financial resilience can be impacted by its financing choices, for example, where a company chooses a structure with a high level of gearing, this can reduce available headroom to withstand cost shocks. Interest costs, levels of dividends paid and company performance in delivering obligations and commitments to customers can also impact on financial resilience.

Thames Water is responsible for the financeability of the company and the maintenance of long-term financial resilience under its actual structure. We comment further on the financial resilience of Thames Water's actual structure in figure 5.2.

Figure 5.2: Financial resilience of Thames Water's actual financial structure

Thames Water is a highly geared company. It reported gearing of 81.9% at 31 March 2019. It proposes a small reduction in gearing to 80.6% in 2021 and 76.9% in 2025. Since March 2019 the company has received an equity injection of £250 million and it has indicated that it will restrict the payment of external dividends to support its proposed gearing reduction.

At the time of our determination Thames Water has a corporate family credit rating of Baa1 (negative) from Moody's and a credit rating of BBB+ (negative) from S&P.

The Board provided assurance that the company is financially resilient under its business plan. In its representations, Thames Water provides assurance on a representation plan that is underpinned by an allowed return on capital for the wholesale price controls of 2.50% (RPI deflated). The assurance sets out the representation plan is financeable and provides long-term resilience and Thames Water is satisfied it is maintaining customers' expectations.

As stated in section 5.2 we consider the company to be financeable on the notional basis and there is a need for companies to ensure that that they are also financially resilient under their actual structures.

However, we have not accepted all of the company's representations and the allowed return is lower in the final determination reflecting market expectations on the cost of finance. The company may need to take further steps to improve its financial resilience.

As set out in section 7, the company has proposed a base dividend for 2020-25 that is consistent with its intention to reduce gearing. When considering the payment of any dividend we expect the Board to take account of the financial resilience of the company.

We will closely monitor changes in levels of the company's gearing, credit ratings and other key financial metrics during 2020-25 to test that adequate steps are being taken by management and that financial resilience is being maintained.

In its future reporting, we expect the company to explain clearly in its long term viability statement how the Board has identified and assessed the potential risks to its financial resilience and the mitigating actions it is taking to address those risks. Thames Water has committed to assess its financial resilience beyond 2025 in its next long-term viability statement.

6 Affordability and bill profile

Key changes from the draft determination

The key changes made to the affordability elements of the draft determination are:

- We revise Thames Water's average bill profile from a large reduction upfront followed by flat real terms prices, to have a smaller reduction upfront, followed by a gradually falling real price over 2020-25.

6.1 Bill profile

Thames Water proposes an average bill profile with a 2.8% reduction. Our bill profile contains a greater reduction of 7.1% over 2020-25. In its August 2019 representations to our draft determination, Thames Water states that its draft determination bill profile would make the company unfinanceable and submits a new bill profile based on its revised business plan at representations. Thames Water's customer challenge group points out that in the company's research customers expressed a preference for service enhancements rather than bill cuts. We do not accept this representation reflects customer views for the following reasons;

- Our assessment allows for efficient expenditure including additional investment where there is sufficient evidence of need. Thames Water's customers were not told that the independent regulator found the company was inefficient. And they were not asked whether they preferred the expenditure, bills and outcomes in its plan versus the expenditure, bills and outcomes in our draft determination.
- Equally, Thames Water's customers were not asked whether they preferred the expenditure, bills and outcomes in its plan versus the expenditure, bills and outcomes that will be delivered by other companies. This would be a better way for them to gain an understanding of the true support for their plans.
- Our approach ensures customers only pay for efficient costs, Thames Water has not provided sufficient evidence to demonstrate that its customers are willing to pay for inefficient costs. Shareholders are able to fund the additional expenditure required to bring the company to required service levels if they wish or the company may be able to increase efficiency to obtain reasonable levels.

We are changing our approach to setting average bill profiles from draft determinations, where the majority of companies were set profiles that included upfront bill cuts followed by flat real terms profiles, which would increase in nominal terms once inflation is taken into account. Thames Water's bill profile changes to a gradual reduction to provide customers with as much stability as possible in what they actually pay, post inflation (i.e. nominal bills). We set bills in this way for the following reasons;

- Research shows customers prefer consistent, predictable bills;
- Flat nominal bills will help households, particularly those who are financially vulnerable, to plan their finances;
- Profiling in this way is easy to understand and communicate to customers;
- Profiling bills in this way has extensive support from stakeholders including water companies, customer challenge groups and the Consumer Council for Water;
- Company revenues fall less sharply in 2020 with a gradual bill reduction, reducing impact of any step change in allowances.

It is important to note that, consistent with our draft determination, we have allowed within the bill profile a greater reduction in 2020-21 and 2021-22 to reflect the rebate secured for customers as a result of the section 19 undertakings accepted following Thames Water's underperformance on leakage and security of supply.

Table 6.1: Average bills (2017-18 CPIH deflated)

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Company April 2019	£389	£374	£380	£379	£379	£378
Draft determinations	£389	£333	£342	£344	£344	£344
Final determinations – before reprofiling	£389	£360	£368	£370	£368	£367
Final determinations	£389	£366	£371	£369	£365	£361

Throughout the price control we have put a strong emphasis on companies planning for the long-term, both in terms of their goals and their bills. Following actions we set out at initial assessment of business plans, nine companies including Thames Water undertook additional customer testing on their long-term bill profiles with several making adjustments as a result. We expect companies to continue to pay attention to this issue, taking customer views into account and planning in a way that ensures they control costs into the future.

6.2 Help for customers who are struggling to pay

Our final determination for Thames Water will deliver a real terms reduction to its average bill between 2020 and 2025.

In addition, Thames Water commits to:

- increase the capacity of its social tariff so that it can support 200,000 customers per year by 2024-25;
- increase its social tariff cross subsidy to support more people, which it has customer support to do. We note the company has support for a cross subsidy of £11 per customer but only plans to spend £5.50. We encourage Thames Water to help as many customers as possible, given the level of resource it has available;
- introduce a new social tariff with tiered levels of 25, 50 or 75% discounts, depending on the customers' situation;
- increase the number of customers helped through its Customer Assistance Fund by 15,000; and
- introduce payment breaks to assist customers who are temporarily unable to pay their bills.

Thames Water has three bespoke performance commitments on affordability and vulnerability, which will require it to:

- reach 200,000 customers through its social tariff;
- maintain high customer satisfaction with its priority services; and
- maintain the BSI standard for accessible services throughout 2020-25.

Companies will be reporting their performance against the Priority Services Register (PSR) common performance commitment and their bespoke affordability and vulnerability performance commitments to us and their customers on an annual basis during the price control period. In addition, companies put forward in their business plans further measures for addressing affordability and vulnerability issues. We expect companies to report periodically to their customers on their progress in addressing affordability and vulnerability concerns. We will also be considering how we will scrutinise and report on companies' progress in this important area, including working with other stakeholders in the water sector and beyond.

6.3 Total revenue allowances and k factors

Table 6.2 summarises the allowed revenue for each control. This is expressed in a 2017-18 CPIH price base so that this can be compared with the rest of this document.

Table 6.2: Allowed revenue by year (£ million, 2017-18 prices)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Water resources	86.0	89.3	88.4	88.9	92.0	444.6
Water network plus	786.5	823.4	843.3	853.9	855.8	4,163.0
Wastewater network plus	810.7	804.8	790.9	787.7	786.4	3,980.5
Bioresources	151.2	158.3	164.7	165.0	167.9	807.1
Tideway	48.1	50.3	51.6	45.8	41.0	236.9
Residential retail	130.7	131.3	131.3	130.6	129.9	653.8
Total	**2,013.2**	**2,057.5**	**2,070.2**	**2,072.0**	**2,072.9**	**10,285.8**

The water resources, water network plus and wastewater network plus controls are in the form of a percentage limit (inflation plus or minus a number that we determine for each year of the control (the ‘K’ factor)) on the change in allowed revenue (R) from the previous charging year (t-1). This is based broadly on the formula:

$$R_t = R_{t-1} \times \left[1 + \frac{CPIH_t + K_t}{100}\right]$$

Table 6.3 sets out the K factors in each year for each of these three controls. For the first year, we have set a ‘base’ revenue which will be used as the starting revenue for calculating 2020-21 allowed revenues.

Table 6.3: Base Revenue and K factors by charging year (2017-18 prices)

	Base (£m)	2020-21	2021-22	2022-23	2023-24	2024-25
Water resources	86.0	0.00%	3.90%	-1.00%	0.67%	3.51%
Water network plus	786.5	0.00%	4.80%	2.54%	1.30%	0.22%
Wastewater network plus	810.7	0.00%	-0.72%	-1.69%	-0.40%	-0.16%
Tideway	N/A	-19.73%	4.64%	2.78%	-11.51%	-10.68%

In addition to these controls, we have set a modified average revenue control for bioresources. We recognise that a proportion of bioresources costs are fixed, so we allow for this in setting the average revenue control. The revenue control ensures that where sludge production varies the incremental change in revenues that arises is aligned to incremental costs. The 'modified average revenue' control includes a revenue adjustment factor, which applies if there are differences between the forecast and measured quantities of sludge.

To ensure companies' allowed revenues reflect their costs, we are intervening to implement a standard approach across companies to this classification. We have set out our methodology and our reasons for intervening in the appendix 'Our methodology for the classification of bioresources costs and revenues'. Further details of how we have applied the methodology to Thames Water is set out in the 'Bioresources revenue to remunerate fixed costs – Thames Water' model.

Table 6.4 sets out our view of the share of revenue to remunerate fixed costs.

Table 6.4: Classification of proportion of revenue to remunerate fixed costs and variable costs for bioresources

	Company view	Draft Determination	Final Determination
Part 1: Revenue to remunerate fixed costs £ million 2017-18 FYA CPIH deflated prices (2020-25)			
Total return on capital	N/A	207.7	187.5
Total run-off	N/A	407.5	388.2
Revenue to service RCV	N/A	615.2	575.7
Local authority and Cumulo rates for both treatment and disposal	N/A	46.6	46.6
Fixed share of other direct costs of treatment and disposal	N/A	50.0	41.3
Fixed share of other indirect cost of treatment and disposal	N/A	26.2	21.7
Fixed PAYG revenue	N/A	122.7	109.5
Fixed share of revenue to cover tax	N/A	0.0	0.0
Pension deficit repair contributions	N/A	7.1	7.1
Other fixed costs	N/A	7.1	7.1
Revenue to remunerate fixed costs	836.2	745.1	692.4
Part 2: Variable revenue (£/TDS) 2017-18 FYA CPIH deflated prices (2020-25)			
Unadjusted revenue (£m)	885.9	897.3	807.1
Revenue to remunerate fixed costs	836.2	745.1	692.4
Revenue to remunerate variable costs (£m)	49.6	152.2	114.7
Forecast volume of sludge (TDS)	2,013,210	2,013,210	2,013,210
Variable revenue (£/TDS)	24.6	75.6	57.0

The modified average revenue in each year is calculated by a formula that we set out in the 'Notification of the PR19 draft determination of Price Controls for Thames Water', which includes some components set now in this determination and some components which relate to out-turn performance (such as the actual volume of sludge in future years).

Table 6.5: Bioresources control

	2020-21	2021-22	2022-23	2023-24	2024-25	2020-25
Unadjusted revenue (£m)	158.9	160.8	161.6	162.5	163.3	807.1
Forecast volume of sludge (TDS)	396,330	401,020	403,150	405,290	407,420	2,013,210
Variable revenue (£/TDS)	N/A	N/A	N/A	N/A	N/A	57.0

7 Putting the sector in balance

Key points

- Thames Water reported gearing of 81.9% as at 31 March 2019. It forecasts that its level of gearing (80.6% by 2021 and 76.9% by 2025) will trigger sharing of financing gains with customers on account of high gearing as set out in the 'Aligning risk and return technical appendix'. We are updating the gearing outperformance mechanism to introduce a glidepath to the gearing level that the triggers sharing payments as set out in the 'Aligning risk and return technical appendix'.
- We do not accepted the company's proposal of a tiered gearing outperformance sharing mechanism with step-tiered sharing rates and an increase in the reference point to 70% provides equivalent benefits in the round to our glidepath sharing mechanism.
- Consistent with the lower allowed return on equity in our final determination, we are revising our calculation of the dividend yield as a guide to the reasonable base dividend yield in the absence of out/underperformance in 2020-25. We set out that the acceptable level of base dividend yield can be expected to vary depending on the scale of a company's RCV growth in 2020-25 and future investment needs.
- Our current assessment of the company's proposed dividend policy indicates that the company is falling short in a number of areas and we expect greater transparency from the company when reporting on dividends paid over 2020-25 in the annual performance report.
- On executive pay, Thames Water falls short of the 60% alignment to delivery for customers we identify as current good practice. We retain our expectation of the company that it will ensure its dividend and performance related pay policies demonstrate substantial alignment with the customer interest, underpinned by stretching performance targets throughout 2020-25.

In July 2018 we published our 'Putting the sector in balance: position statement'. The position statement sets out the steps we expect companies to take to demonstrate they strike the right balance between the interests of customers and their investors. In summary, we expect that:

- company dividend policies for actual financial structures and performance related executive pay policies show appropriate alignment between returns to owners and executives and what is delivered for customers[17];
- companies with high levels of gearing share financing gains from high gearing with customers; and
- companies provide assurance and supporting evidence to demonstrate their long-term financial resilience and management of financial risks for the actual financial structure, taking account of their future investment needs.

We also encourage companies to adopt voluntary sharing mechanisms, particularly where, for example, companies outperform our cost of debt assumptions.

In our final determinations, we have amended our gearing outperformance sharing mechanism to contain a glidepath. We explain this in the final determination 'Aligning risk and return: technical appendix'.

Our assessment of Thames Water's proposals is in table 7.1. We comment on the financial resilience of Thames Water in section 5.2.

Table 7.1: Our assessment of Thames Water's proposals to balance the interests of customers

Our assessment of the company's proposals to balance the interests of customers
Gearing outperformance benefit sharing mechanism
In its representation, the company set out it disagrees with the underpinning principles and design of our gearing outperformance sharing mechanism and propose the same alternative mechanism which we did not accept at draft determination. Thames Water propose a tiered sharing mechanism with step-tiered sharing rates and an increase in the reference point to 70%. In its representations the company explains its mechanism has incentive properties for companies to reduce gearing, furthering customer's interests. We observe that the company expects to remain highly geared in 2020-25. We do not consider the gearing reduction to 76.9% in 2024-25 from the reported 81.9% in its annual performance report 2018-19 to be convincing evidence of incentive properties in the mechanism to reduce gearing. The mechanism also reduces sharing payments significantly. Most of the gain relative to our default mechanism is achieved without having to reduce gearing at all. We do not consider that Thames Water's mechanism, with step-tiered sharing rates and increase in reference point, provides benefits that are equivalent, in the round, to our glide path sharing mechanism.
Voluntary sharing mechanisms Thames Water has not proposed any voluntary sharing mechanisms to share financial outperformance, and does not make company contributions to a social tariff or payment matching scheme. However, the company does voluntarily commit to supporting a charitable trust fund, funded by Thames Water shareholders, which is designed to help customers by providing grants for emergency funds in order to provide essential living items, and by supporting charitable organisations that provide debt advice across the region.

[17] We explain more fully our expectations in the 'Aligning risk and return technical appendix' that accompanies this draft determination.

Our assessment of the company's proposals to balance the interests of customers
Dividend policy for 2020-25 Thames Water confirms that it is committed to the expectations on dividend policy as set out in our 'Putting the sector in balance' position statement but under our current assessment it falls short in a number of areas as set out below. The company indicates a gross base dividend yield of circa 3% (2.2% after netting off inter-company loan interest income) for 2020-25. The company's dividend policy refers to all the areas included in the 'Putting the Sector in balance' position statement (out/underperformance & benefit sharing, employee interest & pension obligations, actual capital structure, need for future investment and financial resilience). The company confirms that when assessing the impact of any dividend payments on customers its Board will consider both past performance and expected future performance on issues such as customer service and performance commitments and provides sufficient detail on the specific obligations and commitments to customers that will be considered. In subsequent correspondence the company confirms that the level of performance delivery considered will be as set out in the final determination. The revised base dividend yield is in our view reasonable for a company performing in line with its price determination but the company has not indicated that dividends may be either increased or lowered from the base depending on the actual performance of the company and the company provides insufficient detail on how performance delivery will impact on dividends paid. The company sets out that when paying dividends, it will be clear about their level, how they positively relate to delivery for customers, and which factors the Board has considered when making its assessment. It has also committed to communicate any changes to its dividend policy to all stakeholders. Consistent with the lower allowed cost of equity in our final determination, we have revised our calculation of the dividend yield that we consider to be reasonable for assessing the base dividend for water companies in 2020-25. We consider the acceptable level of base dividend yield of up to 4% but can be expected to vary depending on the scale of a company's RCV growth and future investment needs. We set out further details in 'Aligning risk and return: technical appendix'. We expect Thames Water to be transparent when explaining its dividend policy and reporting on dividends paid over 2020-25 to demonstrate how it has delivered on the commitments in relation to its dividend policy and to ensure it meets the expectations we set out in 'Putting the sector in balance' as updated in the final determination 'Aligning risk and return: technical appendix'. Specifically, the company should provide further transparency on: • how performance delivery has impacted on the dividends paid.
Performance related executive pay policy for 2020-25 In our Aligning risk and return technical appendix we identify that 60% alignment to delivery for customers is current good practice among the companies that we regulate. Based on our calculations, Thames Water's measures that are directly aligned to customer delivery falls short of good practice, and therefore we consider that there is scope for it to improve this position. We expect Thames Water's policy on performance related executive pay to demonstrate a substantial alignment to the delivery of service for customers throughout 2020-25. Thames Water states that it is committed to meeting the expectations as set out in our 'Putting the sector balance' position statement, and that its proposed incentives for AMP7 would be planned to contain elements relating to: • Customer service (e.g. C-Mex) • Customer delivery (e.g. leakage, sewer flooding, supply interruptions) • Financial (e.g. EBITDA) • Corporate priorities • Personal objectives

Our assessment of the company's proposals to balance the interests of customers

While the specific schemes may change depending on customer and business priorities, the design and weighting of these elements across the short term (annual bonus) and long-term incentives would be expected to broadly reflect the current basis, as follows:

- Annual bonus based on 30% customer service (20% customer complaints, 5% sewer flooding and 5% supply interruptions), 30% EBITDA, 20% other corporate priorities and 20% personal objectives.
- Long-term bonus based on 40% customer service (20% C-Mex and 20% net promoter score), 40% customer delivery (20% leakage and 20% environmental performance assessment) and 20% RoRE.

In addition, the AMP7 policy is expected to include the following:

- A commitment that targets will be stretching as metrics will reflect those used in the final determination taking account of the performance levels specified. In addition, where appropriate, the remuneration committee and TWUL Board may consider historical or cross sector benchmarks to ensure targets are sufficiently stretching. The remuneration committee and TWUL Board has complete discretion to adjust any incentive schemes and outcomes where appropriate.
- The remuneration committee retains discretionary powers to reduce in part or full any payment for exceptional circumstances i.e. failure to hit minimum regulatory or health and safety standards. The remuneration committee and the TWUL Board expect to strengthen this approach further as part of the full review of the remuneration policy in 2019.
- A commitment that full details of the policy will be published in the annual report and accounts including any changes and the underlying reasons.

We expect the company's remuneration committee to ensure there is on-going rigorous challenge as to how the policies are applied and to ensure that only truly stretching performance is rewarded. In so doing, we expect it to be equipped with the appropriate powers to carry this out, including for example, the use of withholding periods, clawback arrangements and underpin / gateway arrangements.

We expect Thames Water to be transparent when explaining and reporting against its performance related executive pay policy in 2020-25, to ensure it meets the expectations we set out in 'Putting the sector in balance' as updated in the final determination 'Aligning risk and return: technical appendix'.

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales.

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