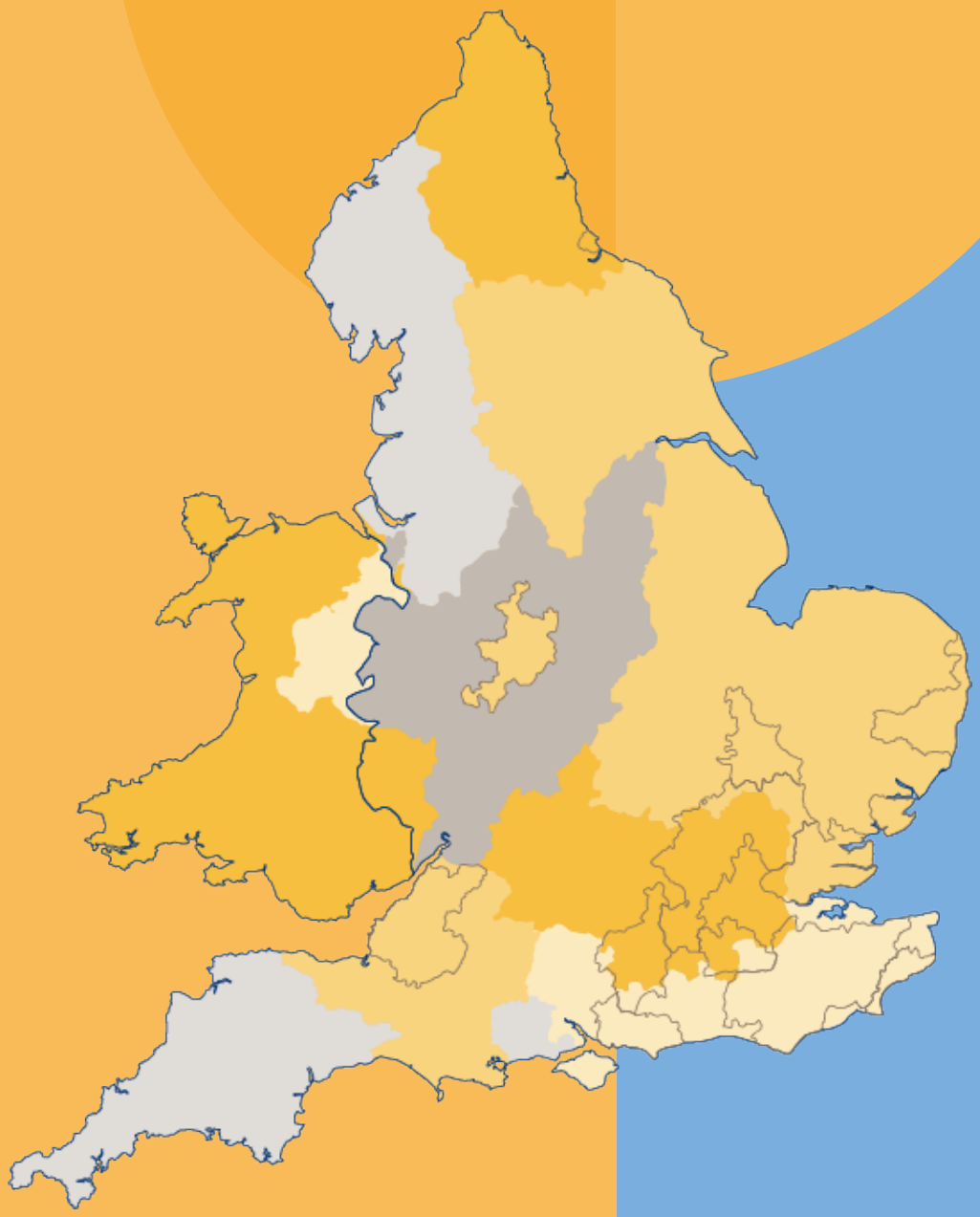
July 2019

Trust in water

PR19 draft determinations

Northumbrian Water draft determination



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PR19 draft determinations: Northumbrian Water draft determination

About this document

This document, together with the 'Notification of the draft determination of price controls for Northumbrian Water', sets out for consultation the details of the draft determination of price controls, service and incentive package for Northumbrian Water for 2020 to 2025. All figures in this document are in 2017-18 prices except where otherwise stated.

The draft determination sets out:

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

The draft determination covers five price controls for the 2019 price review (PR19):

- water resources;
- water network plus;
- wastewater network plus;
- bioresources; and
- residential retail.

This draft determination is in accordance with our PR19 methodology, our statutory duties and the UK Government's statement of strategic priorities and objectives for Ofwat. 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.

All of the responses to the initial assessment of business plans, including all of the companies' revised business plans, provided by 1 April 2019, are taken into account in our decisions where relevant. Where appropriate, we explicitly set out our response to points and issues raised by respondents.

Our decisions also take into account the representations made on the fast track draft determinations where points and issues raised are relevant to the slow track and significant scrutiny draft determinations. We will deal with the other elements of the representations on the fast track draft determinations as part of the final determinations.

We have not necessarily been able to take full account of all late evidence, submitted after 1 April 2019 business plans, and we will consider this information for the final determination.

The appendices to this document provide more detail and form part of the draft price control determination:

- PR19 draft determinations: Northumbrian Water - Cost efficiency draft determination appendix
- PR19 draft determinations: Northumbrian Water - Outcomes performance commitment appendix
- PR19 draft determinations: Northumbrian Water - Accounting for past delivery appendix
- PR19 draft determinations: Northumbrian Water - Allowed revenue appendix

For all other documents related to the Northumbrian Water draft determination, please see the draft determinations webpage.

How to respond

Written representations on the draft determinations should be provided to us by 10am on 30 August 2019. Representations can be made by all stakeholders. Representations can be sent either to our PR19 inbox (PR19@Ofwat.gov.uk) or by post to our Birmingham office address: Ofwat, Centre City Tower, 7 Hill Street, Birmingham, B5 4UA.

To ensure transparency, we expect companies to publish their representations in full. We also intend to publish all the written representations we receive on our website once our final determinations are made.

In view of this, if respondents consider that some of the information in their representations should not be disclosed (for example, because they consider it is commercially sensitive information) they should identify that information and explain why. We would expect strong, robust reasons that are specific to the information concerned. We will take such explanations into account, but we cannot give an assurance that information included in representations will not be disclosed.

Where companies are making representations, they should consider what further evidence may be necessary to submit with their representations as a result of this draft determination. Where companies consider that we have not appropriately considered any points previously raised by the company, companies should include this within their representations. Companies should provide a completed ‘All company representation pro forma’ alongside any representations.

We will publish Northumbrian Water’s final determination on 11 December 2019 after considering representations (from all stakeholders) on the draft determination and other relevant matters. If Northumbrian Water accepts the 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.

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Correction

The discussion of uncertainty mechanisms in section 4.4 was updated on 22 July 2019.

1 Summary

Through PR19 we are enabling, incentivising and challenging water companies to address the key issues facing the sector of climate change, a growing population and ever increasing customer expectations about service. We expect companies to look well beyond the five year price review period to meet needs of future customers and protect and improve the natural environment.

Our PR19 methodology set out a framework for companies to address these challenges, with particular focus on improved service, affordability, increased resilience and greater innovation. Our draft determinations are based on our detailed review of the revised plans submitted to us on 1 April. We are intervening, where required, to protect customers.

1.1 What the draft determination will deliver

Our draft determination for Northumbrian Water will cut average bills by 25.7% in real terms in the 2020-25 period compared to the company's proposed 21.4% reduction. Table 1.1 below sets out the difference in bill profile between the company's business plan submission in April 2019 and our draft determination. Average bills are lower than proposed by Northumbrian Water, reflecting our view of efficient costs. 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)	£429	£350	£346	£343	£340	£337
Draft determination	£429	£319	£319	£319	£319	£319

Our draft determination allows Northumbrian Water £329 million to invest in improvements to service, resilience and the environment. Key parts of this allowance are:

- £159 million to improve the environment by efficiently delivering its obligations as set out in the Water Industry National Environment Programme (WINEP);
- £89 million delivering improved resilience at critical areas of its infrastructure;
- £43 million to install more than 450,000 smart meters and promote water efficiency; and
- £26 million addressing the impact of deteriorating raw water.

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

Our draft determination package includes a full set of performance commitments, specifying the minimum level of service that Northumbrian Water must commit to deliver for customers and the environment. Each performance commitment also has a financial or reputational incentive to hold the company to account for delivery of these commitments.

The performance commitments require Northumbrian Water to deliver service improvements by reducing internal sewer flooding and water supply interruptions. Northumbrian Water will deliver environmental benefits by reducing pollution incidents, greenhouse gas emissions and leakage. The company will also provide more support for vulnerable customers by 2024-25. Further details of performance commitments are set out in Table 1.2 below and in section 2.

Table 1.2: Key commitments for Northumbrian Water

Area	Measure
Overall incentive package	Overall, the likely range of returns from the outcome delivery incentive package in our draft determination equates to a return on regulatory equity range of -3.00% (P10) to + 1.17% (P90).
Key common performance commitments	• 15% reduction in annual level of leakage by 2025 from the 2020 level[1]. • 5% reduction in per capita consumption by 2024-25 • 22% reduction in pollution incidents by 2024-25 • 44% reduction in internal sewer flooding incidents by 2024-25 • 40% reduction in water supply interruptions by 2024-25 • 64% reduction in unplanned outage levels by 2024-25
Bespoke performance commitments	• 25% reduction in external sewer flooding incidents by 2024-2025 • 3% increase in the percentage of designated bathing waters in the company's northern operating area that are classified annually as Good or Excellent by 2024-25. • 28% reduction in greenhouse gas produced by the company by 2024-25

Note: The calculations behind these numbers are outlined in the 'Northumbrian Water - Outcomes performance commitment appendix'

[1]Whilst the figures in the tables of the 'Northumbrian Water - Outcomes performance commitment appendix' which relate to this performance commitment reflect that it is measured on a three-year average to smooth annual variations due to weather, the overall performance commitment target is a reduction in average annual leakage of 15% (from 2019-20 baseline) by 2024-25

1.2 Allowed revenues

Our draft determination sets allowed revenue or average revenue for each of the price controls. Table 1.3 shows the allowed revenues in the draft 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	Wholesale Total	Residential retail
Final allowed revenues (£ million)	377.4	1,471.1	1,046.9	131.6	3,026.9	260.1

Note: 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 'Cost of capital technical appendix', we are updating our assessment of the cost of capital for Northumbrian Water's draft determinations. The updated cost of capital is 3.19% (on a CPIH basis, 2.19% on a RPI basis) at the level of the Appointee, a reduction of 0.21% from our early view set out in the PR19 methodology.

We consider that Northumbrian Water's draft determination is financeable, based on an efficient company, with the notional capital structure, and is sufficient to deliver its obligations, including to ensure a long term resilient service. Each company is responsible for ensuring its capital and financial structure allows it to maintain financial resilience over the short and the long term. We expect Northumbrian Water to take account of this requirement and of the reasonably foreseeable range of plausible outcomes of their final determination, including evidence of further downward pressure on the cost of capital in very recent market data. We expect the company to provide appropriate Board assurance that it will remain financeable on a notional and actual basis and can maintain its long term financial resilience, in its response to our draft determination. Further detail on our assessment of financeability is set out in section 5.

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. Northumbrian Water has committed to meeting the expectations set out in our 'Putting the sector in balance position statement'. It has confirmed it will apply our gearing outperformance mechanism and expects gearing of less than 70%

during 2020-25. The company is taking steps to demonstrate how its dividend and performance related executive pay policies in 2020-25 will align with customer interests. However, we expect the company to continue to take steps in these areas to meet our expectations so that customers can have more trust in the water sector. These include providing further detail about how its dividend policy will take into account performance against commitments made to customers and demonstrating that its policy on performance related executive pay has a substantial link to stretching performance delivery for customers through 2020-25.

In the 'Putting the sector in balance' position statement, we also encouraged companies to adopt voluntary sharing mechanisms, particularly where, for example, companies outperform our cost of debt assumptions. Northumbrian Water has proposed a scheme to reduce water poverty and support customers by donating interest earned on a customer-funded £50 million allowance for a tax liability which has not materialised. The company also proposes to contribute to a social tariff, hardship fund and payment matching scheme.

1.3 Where we intervene

Our initial assessment of Northumbrian Water's plan on 31 January 2019 assessed the plan as slow track. We identified a number of areas where material interventions were required to protect customers' interests. In its 1 April 2019 revised business plan, Northumbrian Water has not adequately addressed our concerns. In our draft determinations, we intervene in Northumbrian Water's plan in the following areas:

- We align total expenditure (totex) allowances to our view of efficient costs using the comparative information available to us and because it did not provide convincing evidence to explain why its proposed costs were higher. This intervention reduces Northumbrian Water totex by 9.2% and saves customers £295 million.
- We reject enhancement proposals on resilience and security because of limited evidence provided in the company's business plan in April.
- We increase the incentive rates on performance commitments such as leakage and internal sewer flooding.
- We reduce the outperformance rates for its performance commitment on mains bursts.
- We reject Northumbrian Water's claim for an incentive payment in relation to a reverse water trade with Thames Water.

We set out further detail of our interventions in this document and in the Northumbrian Water actions and interventions documents.

2 Outcomes

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 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 incentives 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 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.

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 expect 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 continue our assessment of customer engagement evidence following each company's submission of its response to our initial assessment of its plan in April 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.

Northumbrian Water's plan demonstrated high-quality engagement with customers. The company uses a wide range of engagement techniques such as: face-to-face interviews, surveys and co-creation events and a three-phase approach to customer engagement; ongoing engagement with customers, including through its engagement vehicle ('Flo') at community events; running an annual innovation festival and a 'water rangers' scheme.

However, the plan fell short in one area in particular. The company calculated the marginal benefit values for its outcome delivery incentive rates from one source and the company did not provide convincing evidence that this single piece of research is high quality or that it had triangulated with other customer valuation research. In response to our initial assessment of the plan, Northumbrian Water submitted additional evidence of customer views on: cross subsidies for social tariffs as part of zero water poverty ambitions; incentive rates for enhanced outcome delivery incentives; more in depth views on some service measures (interruptions, discolouration, external sewer flooding, voids), and; bill profiles post 2025.

The recent research has been conducted in deliberative workshops with 167 participants (in groups ranging from 22-31). The company has used the research findings to inform changes to the plan following our initial assessment, but it does not address the material gaps in the research that were previously identified. Additionally, due to the sample sizes used, this evidence cannot be considered as having statistical certainty – a view also confirmed by Northumbrian Water's customer challenge group. Results from this research are mixed, with evidence suggesting approximate customer support in response to actions, but this is limited (for example, the research does not provide customer views on the extent of stretch targets).

The customer challenge group concludes that, within the company's pragmatic approach to generating new evidence of customer views, 'whilst we were able to assure the quality of engagement, the impact of any risk to customers as a result of changes to the business plan is a harder aspect for us to ascertain in the timescales. […] we find ourselves limited in how we can provide this aspect of assurance and add the value that Ofwat asks of us'.

2.2 Performance commitments and outcome delivery incentives

Northumbrian Water's performance commitments and outcome delivery incentives for the 2020-25 period are listed in Table 2.2 and Table 2.3. The detail of these performance commitments and outcome delivery incentives are set out in the 'Northumbrian Water - Outcomes performance commitment appendix'. The performance commitments and outcome delivery incentives include the revisions accepted by the company in response to our 31 January 2019 initial assessment of business plans and any additional interventions we are making in the draft determination.

The material interventions we are making in the draft determination are set out in Table 2.1 below. 'Northumbrian Water – Delivering outcomes for customers actions and interventions' sets out in detail our interventions in the company's performance commitments and outcome delivery incentives following our 31 January 2019 initial assessment of plans.

Table 2.1: Summary of key interventions on outcomes

Intervention description
Accepting the company's leakage reduction proposals for its two regions, at 15% on an annual average basis. This will take it to slightly worse than industry upper quartile by 2024-25. Increasing underperformance and outperformance rates in relation to leakage reduction to correct the company derivation of its rates.
Accepting the company's plan to deliver 5% reduction in per capita consumption and achieve PCC of 136 l/h/d by 2024-25, which is below the Department for Environment, Food and Rural Affairs' (DEFRA) aspiration. Accepting the company's proposed outcome delivery incentive rates in relation to per capita consumption.
Accepting the company's proposed improvement in water supply interruptions of 40% by 2024-25 to our forecast industry upper quartile. The company was the frontier performer in 2016-17 and is still above upper quartile in the current year. Setting an industry wide glide path for all years before 2024-25. Accepting the company's proposed outcome delivery incentive rates in relation to water supply interruptions.
Accepting the company's proposal to reduce pollution incidents by 22% by 2024-25. The company is currently at the industry frontier. Accepting the company's proposed outcome delivery incentive rates in relation to pollution incidents.
Accepting the company's proposed reduction in internal sewer flooding by 44% to 2024-25 to achieve our forecast industry upper quartile performance.

Intervention description
Increasing underperformance and outperformance rates in relation to internal sewer flooding to reflect the removal of a downward adjustment applied by the company without any justification or supporting evidence.
Increasing the improvement in unplanned outage to 64% to take it to the industry median by 2024-25. Accepting the company's proposed outcome delivery incentive rates in relation to unplanned outage.
Accepting the company's proposal to improve performance by 10% in relation to mains repairs by 2024-25. Reducing the outperformance rate in relation to mains repairs to ensure it is no higher than the underperformance rate.
Accepting the two further bespoke performance commitments concerning interruptions to supply with an upside of £11.6m and downside of £7.7m, in addition to the common performance commitments.
Accepting the financially material outcome delivery incentive concerning bathing water compliance, with an upside of £3.7m and a downside of £11.0m, to ensure water quality is maintained or improved at beaches for swimming.
Strengthening the five outcome delivery incentives proposed by the company which will protect customers if major investments - such as resilience, lead pipes replacements, and metering - are delayed or not delivered at all.

Table 2.2: Summary of performance commitments: common performance commitments

Name of common performance commitment	Type of outcome delivery incentive	Price controls outcome delivery incentives will apply to
Water quality compliance (CRI) [PR19NES_COM03]	Financial - Under; In-period	Water network plus
Water supply interruptions [PR19NES_COM04]	Financial - Out & under; In-period	Water network plus
Leakage (NW region) [PR19NES_COM05]	Financial - Out & under; In-period	Water network plus
Leakage (ESW region) [PR19NES_COM06]	Financial - Out & under; In-period	Water network plus
Per capita consumption [PR19NES_COM07]	Financial - Out & under; In-period	Water network plus
Mains repairs [PR19NES_COM12]	Financial - Out & under; In-period	Water network plus
Unplanned outage [PR19NES_COM13]	Financial - Under; In-period	Water network plus
Risk of severe restrictions in a drought [PR19NES_COM10]	Reputational	N/A
Priority services for customers in vulnerable circumstances [PR19NES_COM16]	Reputational	N/A
Internal sewer flooding [PR19NES_COM08]	Financial - Out & under; In-period	Wastewater network plus
Pollution incidents [PR19NES_COM09]	Financial - Out & under; In-period	Wastewater network plus
Risk of sewer flooding in a storm [PR19NES_COM11]	Reputational	N/A
Sewer collapses [PR19NES_COM14]	Financial - Under; In-period	Wastewater network plus
Treatment works compliance [PR19NES_COM15]	Financial - Under; In-period	Water network plus; Wastewater network plus
C-Mex: Customer measure of experience [PR19NES_COM01]	Financial - Out & under; In-period	Residential retail
D-Mex: Developer services measure of experience [PR19NES_COM02]	Financial - Out & under; In-period	Water network plus; Wastewater network plus

Table 2.3: Summary of performance commitments: bespoke performance commitments

Name of bespoke performance commitment	Type of outcome delivery incentive	Price controls outcome delivery incentives will apply to
Satisfaction of Customers who receive additional non-financial support [PR19NES_BES01]	Reputational	N/A
Awareness of additional non-financial support [PR19NES_BES02]	Reputational	N/A
Response time to written complaints [PR19NES_BES03]	Reputational	N/A
Visible leak repair time [PR19NES_BES04]	Financial - Out & under; In-period	Water network plus
Customers' perception of trust [PR19NES_BES05]	Reputational	N/A
Percentage of households in water poverty [PR19NES_BES06]	Reputational	N/A
Gap sites [PR19NES_BES07]	Reputational	N/A
Voids [PR19NES_BES08]	Financial - Out & under; In-period	Residential retail
Interruptions to supply greater than 12 hours [PR19NES_BES09]	Financial - Out & under; In-period	Water network plus
Sewer flooding risk reduction [PR19NES_BES10]	Financial - Under; End of period	Wastewater network plus
Discoloured water contacts [PR19NES_BES11]	Financial - Out & under; In-period	Water network plus
Taste and smell contacts [PR19NES_BES12]	Financial - Out & under; In-period	Water network plus
Event Risk Index [PR19NES_BES13]	Financial - Under; In-period	Water network plus
Interruptions to supply between one and three hours [PR19NES_BES14]	Financial - Out & under; In-period	Water network plus
Sewer blockages [PR19NES_BES15]	Financial - Out & under; In-period	Wastewater network plus
External sewer flooding [PR19NES_BES16]	Financial - Out & under; In-period	Wastewater network plus
Repeat sewer flooding [PR19NES_BES17]	Financial - Out & under; In-period	Wastewater network plus
Abstraction incentive mechanism (AIM) [PR19NES_BES18]	Financial - Out & under; In-period	Water resources
Bathing water compliance [PR19NES_BES19]	Financial - Out & under; In-period	Wastewater network plus

Name of bespoke performance commitment	Type of outcome delivery incentive	Price controls outcome delivery incentives will apply to
Water environment improvements [PR19NES_BES20]	Financial - Out & under; In-period	Water resources; Water network plus; Wastewater network plus
Greenhouse Gas Emissions [PR19NES_BES21]	Financial - Out & under; In-period	Water resources; Water network plus; Wastewater network plus; Bioresources; Residential retail
Bioresources [PR19NES_BES22]	Reputational	N/A
Satisfaction of Customers who receive additional financial support [PR19NES_BES01a]	Reputational	N/A
Awareness of additional financial support [PR19NES_BES02a]	Reputational	N/A
British Standards Institution Award for Inclusive Services [PR19NES_BES23]	Reputational	N/A
Delivery of water resilience enhanced programme [PR19NES_BES24]	Financial - Under; End of period	Water network plus
Delivery of lead enhancement programme [PR19NES_BES25]	Financial - Under; In-period	Water network plus
Delivery of smart water metering enhancement programme [PR19NES_BES26]	Financial - Under; In-period	Water network plus
Delivery wastewater resilience enhancement programme [PR19NES_BES27]	Financial - Under; End of period	Wastewater network plus
Delivery of cyber resilience enhancement programme [PR19NES_BES28]	Financial - Under; In-period	Water network plus; Wastewater network plus
NWL Independent value for money survey [PR19NES_BES30]	Reputational	N/A
WINEP Delivery [PR19NES_NEP01]	Reputational	N/A
NWL Independent value for money survey [PR19NES_BES30]	Reputational	N/A
WINEP Delivery [PR19NES_NEP01]	Reputational	N/A
Water Industry National Environment Programme [PR19NES_BES31]	Financial - Under; In-period	Water resources; Wastewater network plus

Figure 2.1 and Figure 2.2 below provide an indication of the financial value of each of Northumbrian Water's outcome delivery incentives (taking into account the impact of our draft determination interventions) 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 over performed to the P90 level. The figures cover common and bespoke commitments respectively.

Table 2.4 below 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 regulated equity)) and the overall impact of our draft determination interventions. The estimates are based on the company's own view of the plausible bounds of performance. 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.

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

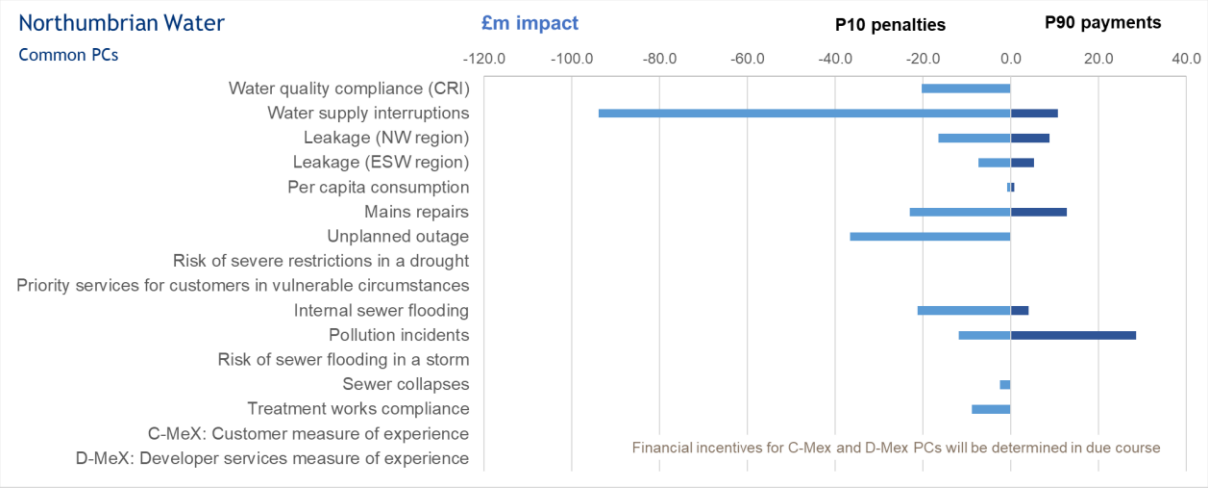


Figure 2.2: Projected P10 penalties and P90 payments for bespoke performance commitments over 2020-25 (£ million)

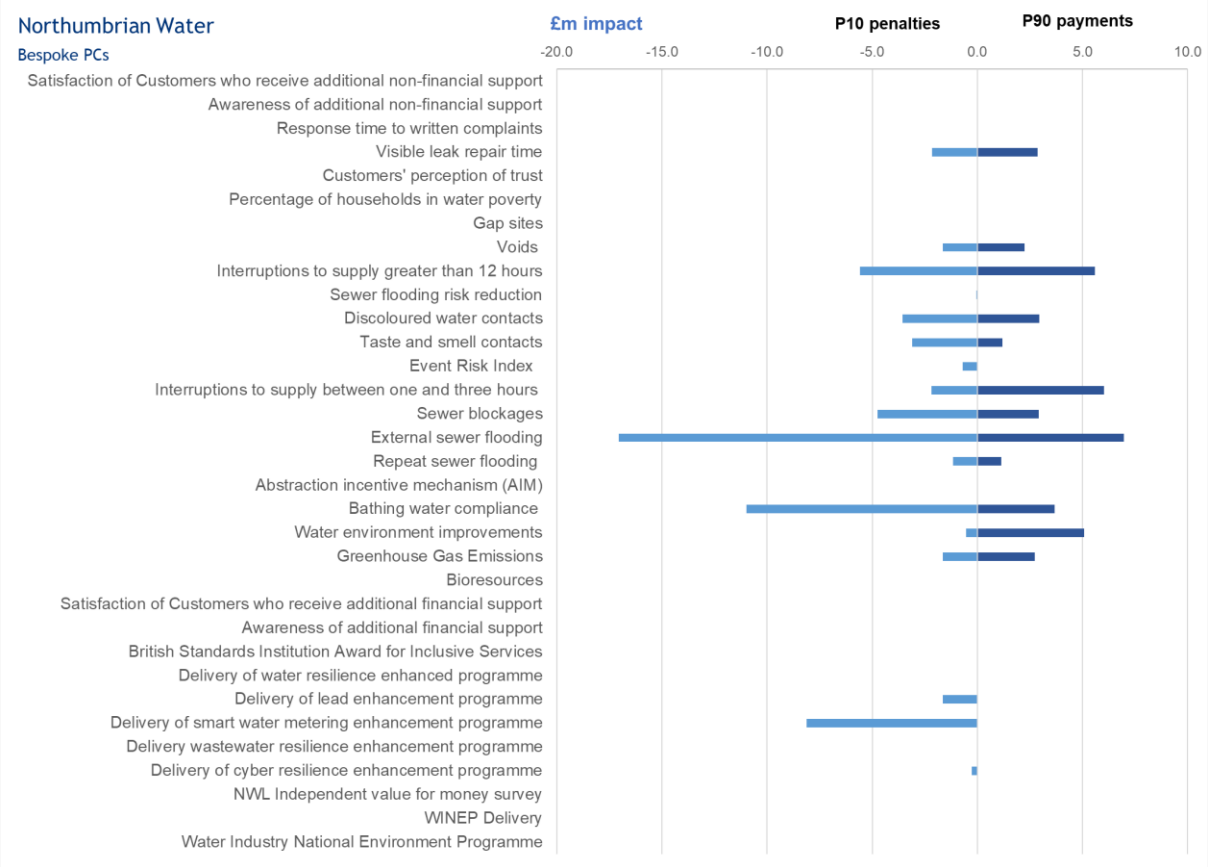


Table 2.4: Impact of draft determination interventions on RoRE range

	April 2019 business plan		Draft determination	
	% of 5 year regulatory equity		% of 5 year regulatory equity	
	P10	P90	P10	P90
Northumbrian Water	**-1.88**	**+1.40**	**-3.00**	**+1.17**

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.

The company has adopted a 50:50 sharing mechanism if outperformance exceeds 2% of Return on Regulatory Equity, which offers customers a greater level of protection than our recommended approach. We accept this proposal. The company will also smooth customer bills if year-on-year changes due to outcome delivery incentives exceed 5%. We set out further detail of the mechanism in 'Delivering outcomes for customers policy appendix'.

In our PR19 methodology, we decided to replace the current Service Incentive Mechanism (SIM) with two new mechanisms to incentivise companies to provide a great 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 be operational from April 2020. We set out further details on C-MeX and D-MeX in the 'Delivering outcomes for customers policy appendix'. We will publish our decisions on C-Mex and D-Mex incentive designs for 2020-25 as part of the final determinations in December.

We will finalise the company's performance commitments and outcome delivery incentives in the light of representations on this draft determination, so that these can be reflected as appropriate in the company's final determination to be published in December.

2.3 Linking outcomes to resilience

During the initial assessment of plans, we were concerned that companies' plans lacked a clear line of sight between the risks to resilience identified, the proposed mitigations presented in the plan to tackle these risks, and how these mitigation plans were reflected as service improvements in the form of stretching performance commitments. In this context, we are intervening to ensure Northumbrian Water's resilience challenges are reflected in its outcomes and performance commitments, particularly in relation to the level of stretch and incentives associated with its unplanned outage targets and with its bespoke resilience performance commitments (related to the delivery of resilience enhancement programmes for water, wastewater and cyber improvements).

Our initial assessment of plans also noted that while Northumbrian Water provided some evidence of its approach and the level of development of its systems in relation to resilience, it provided insufficient evidence of its risk identification and assessment process. Overall, the company provided insufficient evidence to demonstrate the benefit that specific investments have in mitigating quantified levels of risk (and/or in increasing system resilience) and supporting stable or improved commitment targets. This is an issue we discuss further in cost allowances for enhancement spending on resilience. We expect companies to address this and other issues associated with the way they integrate resilience across their business in the action plans that will be submitted by 22 August 2019 and in their responses to the draft determinations in relation to specific investment proposals. We will take into account the quality of companies' response in our final determinations.

3 Cost allowances

We set out in our PR19 methodology that we expect company business plans to show a step change in efficiency. In its April business plan Northumbrian Water requests total expenditure levels 18.1% higher than it has incurred historically. We challenge these costs, most notably in the wastewater network plus and residential retail price controls. Overall, we find the proposed costs to be greater than our view of efficient costs. Our allowance for base expenditure is slightly higher than historical levels.

For enhancement expenditure we challenge the scope of work, the evidence provided to support solution options and the efficient delivery of programmes. In particular we are challenging the need for an additional cost allowance for investments in resilience and those driven by the security and emergency measures directive (SEMD), for which the company provides insufficient evidence.

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 'Northumbrian Water – Cost efficiency draft determination appendix' we provide more detailed information on our cost challenge for enhancement expenditure, our allowance for cost adjustment claims and transitional expenditure and how we will deal with the uncertainty in WINEP.

3.1 Wholesale total expenditure

Table 3.1 shows the totex allowances by year and by wholesale price control for the period 2020-25. We have phased our allowed totex over 2020-25 using the company business plan totex profile.

Table 3.1: Totex[1] (excluding pension deficit recovery) 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 view - total
Water Resources	59.1	58.9	57.2	55.6	55.4	286.2	287.7
Water network plus	275.2	293.1	286.8	266.4	242.9	1,364.4	1,469.6
Wastewater network plus	144.6	165.7	186.0	238.0	193.2	927.5	1,142.2
Bioresources[2]	25.2	25.0	24.9	24.7	24.6	124.4	74.1
Total	**504.1**	**542.7**	**554.9**	**584.7**	**516.1**	**2,702.4**	**2,973.7**

1 Totex includes all costs except pension deficit recovery costs. This includes 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 build-up of our totex allowance from base and enhancement costs. Base expenditure refers to routine, year on year costs, which companies incur in the normal running of their business. Enhancement expenditure refers to investment for the purpose of enhancing the capacity or quality of service beyond base level.

For draft determinations, we have changed the scope of costs included under base expenditure compared to the initial assessment of plans. Our base costs for wholesale water now include costs associated with the connection of new developments (ie new developments and new connection costs) and costs for addressing low pressure. Our base costs for wholesale wastewater now include new connections and growth, growth at sewage treatment works and costs to reduce flooding to properties that were previously assessed as enhancement expenditure.

Table 3.2: Totex by wholesale price control and type of cost, 2020-25 (£ million, 2017-18 CPIH deflated prices)

	Our cost allowance					Company view
	Water resources	Water network plus	Wastewater network plus	Bioresources	Total	Total
Base expenditure[1]	249.8	1,213.4	747.9	124.5	2,335.7	2,378.7
Enhancement expenditure	11.7	136.2	180.8	-	328.7	570.3
Third party costs	24.8	15.9	1.5	-	42.2	42.2
Total – excluding pension deficit recovery	**286.3**	**1,365.5**	**930.2**	**124.5**	**2,706.5**	**2,991.2**
Pensions deficit recovery costs[2]	1.6	24.1	9.9	1.3	37.0	54.9
Total	**287.9**	**1,389.6**	**940.1**	**125.9**	**2,743.5**	**3,046.1**

1 We display base costs under the new definition. Company business plan base costs exclude enhancement opex.
2 We are displaying pension deficit recovery costs separately as they are not included in the calculation for PAYG (see section 4).
3 Table 3.2 does not include operating lease adjustments, allowances related to the development of strategic regional water resource solutions. Any ex-ante cost sharing adjustments and costs that are assumed to be recovered through grants and contributions are also excluded. This is to allow a simpler comparison with base and enhancement costs. Table 3.6 sets out a reconciliation of inclusions and exclusions in totex for cost sharing and for the financial model.
4 The company view of pension deficit recovery costs is the full cost, not just the cost the company expects to include within price controls.
5 The table above overstates the company view of totex by £17.5m. This does not affect our assessment of costs.

3.2 Base expenditure

Table 3.3 shows our challenge to company proposed base expenditure. We distinguish between ‘modelled base costs’ and ‘unmodelled base costs’. We challenge modelled based costs based on comparative assessment (using econometric models). Our efficiency challenge is based on cost performance within the sector as well as evidence from the wider economy.

Unmodelled base costs include business rates; abstraction charges; costs to meet the Traffic Management Act and costs to meet the wastewater Industrial Emissions Directive where applicable. Our assessment of these costs sits outside of our econometric models and we explain our approach in 'Securing cost efficiency technical appendix'. In its business plan Northumbrian Water forecasts a significant increase in its Traffic Management Act costs. The company bases the increase on the assumption that there will be an increase in the number of lane rental schemes in operation in its area. However we do not consider there to be sufficient evidence of the likelihood of local authorities introducing lane rental schemes and we do not include lane rental costs in our allowance.

Table 3.3: Base totex expenditure, 2020-25 (£ million, 2017-18 CPIH deflated prices)

Price Control	Company business plan - base cost	Modelled base costs efficiency adjustment	Unmodelled base costs adjustment	Base cost allowance
Water Resources	247.3	2.7	-0.2	249.8
Water Network plus	1,208.1	22.8	-17.4	1,213.4
Wastewater Network plus	849.2	-99.7	-1.6	747.9
Bioresources	74.1	50.4	0.0	124.5
Total	2,378.7	-23.8	-19.2	2,335.7

Base costs include operating and maintenance costs as well as new development, new connections and addressing low pressure costs in water, and new connections and growth, growth at sewage treatment works, costs to reduce flooding to properties and transfer to private sewers and pumping stations in wastewater. Company business plan base costs exclude enhancement opex.

We assess growth related expenditure through the base cost econometric models. One of the implications of the move to integrated base cost models is that we rely on historical cost performance to forecast efficient expenditure. We consider this is appropriate for routine activities, such as those related to growth. Northumbrian Water requested £264 million in growth related expenditure, which is assessed through our base cost models. However, we initiated a deep dive of growth costs for a few companies where we considered that the gap between their forecast of growth costs and ours was large.

We deep dived Northumbrian Water's proposals because of its significant wastewater proposal for growth at Howdon wastewater treatment works. But we consider that the evidence provided is not sufficient and convincing enough to argue against our modelled base plus allowance and so we do not make an additional

allowance. We arrive at this conclusion because we consider that the need for expenditure is not sufficiently different to what Northumbrian Water does, and indeed all companies do, in the normal course of business when adapting for growth. There is also no attempt by the company to quantify what proportion of the proposed investment in Howdon is growth related and what proportion is replacement (ie maintenance). The proposed upgrade at Howdon could also be undertaken in phases, which would mean that Northumbrian Water does not necessarily need to invest the total proposed in one five year period.

3.3 Enhancement expenditure

Table 3.4 summarises our allowances for enhancement expenditure.

Our draft determination allows Northumbrian Water £329 million to invest in improvements to service, resilience and the environment. Key parts of this allowance are:

- £159 million to improve the environment by efficiently delivering its obligations as set out in the WINEP;
- £89 million delivering improved resilience at critical areas of its infrastructure;
- £43 million to install more than 450,000 smart meters and promote water efficiency; and
- £26 million addressing the impact of deteriorating raw water.

Northumbrian Water's allowances for enhancement expenditure take account of evidence contained within the company's September 2018 and April 2019 business plans and obtained through the query process prior to mid-June 2019. We acknowledge the company submitted additional evidence on flooding enhancement proposals in July 2019. We have not taken this evidence into account when making our draft determination allowances but we will consider this for final determinations.

The most material areas of enhancement cost challenge for Northumbrian Water are for investments in resilience and the wastewater WINEP.

For resilience, Northumbrian Water's draft determination allowance is materially lower than the investment requested by the company in this area. We consider that a number of investments proposed by the company are covered in our base modelled allowances, such as activities to maintain asset condition or renew assets and conduct investigations. We do not make enhancement allowances for these investments to protect customers from paying twice for maintaining current levels of service resilience. Additionally, we do not make an allowance for one investment in water because we make an allowance to mitigate the primary risk in the area of raw water deterioration. We invite Northumbrian Water to consider our assessment and present further evidence in response to draft determinations.

For other disallowed activities in resilience we consider that Northumbrian Water provides insufficient evidence that the proposed investments meet our criteria for resilience enhancements (explained in the ‘Securing cost efficiency technical appendix’). Investments in enhanced resilience must address low probability high consequence risks that are beyond management control. However, we consider that the company does not provide sufficient evidence of the specific risks mitigated (i.e. the cause of failure and the probability and consequence attached to that specific failure) or how these are beyond management control and so why additional funding is required to control the risk.

We challenge the efficiency of Northumbrian Water’s investment proposals to deliver wastewater obligations set out in the WINEP. At a programme level we apply a 17% challenge to Northumbrian Water’s requested costs, mainly based on benchmarking analysis. Northumbrian Water appears efficient in delivering schemes for event duration monitoring at intermittent discharges and storage in the network but less so for wastewater investigations and phosphorous removal. We do not challenge the need or scope of the programme.

Our document ‘Northumbrian Water - Cost efficiency draft determination appendix’ sets out in more detail the allowances by investment area for each price control, and we provide full details in our published models.

Table 3.4: Enhancement totex expenditure, 2020-25 (£ million, 2017-18 CPIH deflated prices)

Service	Company requested totex	Scope and efficiency adjustment	Our allowance
Water Resources	14.6	-2.8	11.7
Water Network plus	262.6	-126.4	136.2
Wastewater Network plus	293.2	-112.4	180.8
Bioresources	0.0	0.0	0.0
Total	570.3	-241.6	328.7

The table above overstates the company view of totex by £17.5m. This does not affect our assessment of costs.

3.4 Cost sharing

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.

For the draft determinations we calculate each company's cost sharing rates based on the ratio of the company's view of costs in its September 2018 business plan relative to our view of efficient costs. For the final determinations we propose to calculate the company's view of costs based on a 50% weight on the company's final cost proposals in its 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 3.5: Totex cost sharing for cost performance for 2020-25, %

	Water resources	Network plus - water	Network plus - wastewater
Cost sharing rate – outperformance	43.6%	43.6%	35.0%
Cost sharing rate – underperformance	56.4%	56.4%	65.0%

Table 3.6 sets out the costs that are subject to cost sharing. We apply cost sharing to net totex. Net totex excludes grants and contributions, costs of operating leases, strategic regional water resources development costs, third party costs and pension deficit recovery cost.

We adjust allowed costs 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 have followed the approach set out in IN 18/09 Guidance for reporting operating leases in PR19 business plans. We have used the adjustment to operating costs that the company proposed in its business plan.

Table 3.6: Totex subject to cost sharing rates – 2020-25, £ million[1]

	Water resources	Network plus – water	Network plus – wastewater	Company view
Gross totex (excluding third party costs)	261.5	1,349.6	928.6	2,857.4
Grants and contributions	0.0	-82.9	-4.9	-88.5
Operating leases adjustment	-0.2	-1.1	-2.7	-4.0
Net totex (subject to cost sharing)	261.4	1,265.6	921.1	2,765.0
Strategic regional water resource solutions[2]	0.0	0.0	0.0	0.0
Third party costs	24.8	15.9	1.5	42.2
Ex-ante cost sharing adjustment	0.0	0.0	0.0	0.0
Net totex (for financial model)	286.2	1,281.5	922.6	2,807.1

[1] Table 3.6 does not include pension deficit repair expenditure, as this is not included in cost sharing.
[2] The standard totex cost sharing does not apply to strategic regional water resource solution expenditure, see 'Strategic regional water resources solution appendix' for more details.

3.5 Transition expenditure

Table 3.7 sets out expenditure allowed under the transition programme. The transition programme allows companies to bring forward planned investment from 2020-25 to 2019-20, where it is efficient to do so. Although the expenditure would be

incurred in 2019-20, for the purpose of cost performance incentives it is considered as expenditure incurred in the following regulatory period (2020-25).

We allow costs when reasonably justified in order to make efficient use of resources to minimise whole life costs, where it is efficient or in customers' interests to bring forward an investment, or to enable companies to meet early statutory deadlines.

Table 3.7: Summary of wholesale water and wastewater requested and allowed transitional capex expenditure 2019-20, (£ million, 2017-18 CPIH deflated prices)

	Company requested expenditure	Our allowed expenditure	Rationale
Wholesale water	1.4	0.0	We do not allow all of the resilience expenditure the company proposes due to lack of evidence on its understanding of the risks it proposes to mitigate. We therefore do not allow the associated transition expenditure.
Wholesale wastewater	1.4	0.0	We do not allow all of the resilience expenditure the company proposes due to lack of evidence on its understanding of the risks it proposes to mitigate. We therefore do not allow the associated transition expenditure. We disallow the investment in growth because this is a routine investment with no early statutory deadlines in the next regulatory period to be met.

3.6 Residential retail

We determine the residential retail control from the expenditure set out in Table 3.8, using an econometric modelling approach to set our allowance. The residential retail draft determination does not include any of our allowed pension deficit recovery costs. These costs have been wholly allocated to wholesale controls.

Table 3.8: Expenditure, residential retail, 2020-25 (£ million, nominal)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Residential retail	50.3	50.3	50.3	50.3	50.3	251.5
Company view	54.4	55.2	55.9	56.6	57.4	279.6

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 were to consider direct procurement for customers for discrete, large-scale enhancement projects expected to cost over £100 million, based on whole-life totex.

There is sufficient evidence that there are currently no suitable projects for a direct procurement for customers process within Northumbrian Water's proposed plan. However, should the planned expansion to the Howdon Sewage Treatment Works be found more expensive than the allowed costs, better value for money may be achieved through a direct procurement for customers process. We expect Northumbrian Water to undertake further work to review detailed costs and commitments to ensure delivery is via the most efficient route, and to re-assess delivery via a direct procurement for customers process if there are significant changes to their schemes or their value for money assessments, to ensure that customers continue to receive the best value.

Under direct procurement for customers the need to create regulatory mechanisms to manage uncertainty as a result of change is recognised. If a change in external factors dictates that a scheme no longer demonstrates value for money through direct procurement for customers, a scheme may pass from direct procurement for customers back to a traditional in-house procurement process.

We discuss the uncertainty mechanism further in 'Delivering customer value in large projects'.

4 Calculation of allowed revenue

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.

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 cost of 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 will include income from connection charges and infrastructure charges. This does not necessarily agree to the total grants and contributions deducted from totex, as only the income relating to the price control is included here.

- 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. 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.
- 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 Northumbrian 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 cost of 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	Total	Company view - total
Pay as you go	260.5	703.2	330.7	52.1	1,346.5	1,472.0
RCV run-off	79.0	450.3	450.6	53.4	1,033.3	1,050.7
Return on capital	36.3	243.5	250.9	20.1	550.8	608.5
Revenue adjustments for PR14 reconciliations	0.0	5.7	-4.0	0.0	1.7	9.3
Tax	8.6	25.1	23.0	6.0	62.6	72.8
Grants and contributions (price control)	0.0	78.4	4.2	0.0	82.6	81.3
Deduct non-price control income	-6.9	-35.0	-8.5	0.0	-50.4	-50.4
Revenue re-profiling	0.0	-0.1	-0.1	0.0	-0.2	-2.3
Final allowed revenues	377.4	1,471.1	1,046.9	131.6	3,026.9	3,241.9

We set out the calculation of allowed revenue for each wholesale control on an annual basis in the 'Northumbrian Water - Allowed revenue appendix' in Tables 1.1 to Table 1.4.

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 Northumbrian Water in its business plan and is unchanged in our draft determination.

Allowed revenue for the residential retail control is set on a nominal basis and therefore we present the make-up of the allowed revenue in nominal prices in Table 4.2.

Table 4.2: Retail margins (nominal price base)

	2020-25	Company view 2020-25
Total wholesale revenue - nominal (£ million)	3,204.6	3,582.9
Proportion of wholesale revenue allocated to residential (%)	77.46%	77.43%
Residential retail costs (£ million)	251.5	279.6
Total retail costs (£ million)	2,733.9	2,955.2
Residential retail net margin (%)	1.00%	1.00%
Residential retail net margin (£ million)	27.7	29.9
Residential retail adjustments (£ million)	6.9	8.8
Residential retail revenue (£ million)	286.1	311.5

Note: retail revenue is the sum of the net margin, retail costs, and adjustments. Company view may not sum as this may include other adjustments.
Note: The proportion of wholesale revenue allocated to residential customers is provided by the company in the business plan tables. This is provided for each wholesale control separately, so although we have used the same proportions for each control as the company, our interventions on costs in each control mean that the combined proportion is slightly different.

We set out the calculation of residential retail revenue on an annual basis in the 'Northumbrian Water - Allowed revenue appendix' in Table 1.5.

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.

In this section we set out our approach to calculating the PAYG rates, the RCV to which the cost of capital is applied and the RCV run off rates.

PAYG

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 'Northumbrian Water - Allowed revenue appendix', Tables 2.1 to 2.4.

To PAYG totex we add the allowed costs for pension deficit recovery set out in Table 3.2 to derive 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	Total	Company view - Total
Totex allowance (£ million)	286.2	1,281.5	922.6	124.4	2,614.6	2,885.2
Draft determination PAYG rate(%)	90.5%	53.0%	34.8%	40.8%	50.1%	
Pay as you go totex (£ million)	258.9	679.1	320.8	50.7	1,309.6	1,417.1
Pension deficit recovery cost (£ million)	1.6	24.1	9.9	1.3	37.0	54.9
Total pay as you go (£ million)	260.5	703.2	330.7	52.1	1,346.5	1,472.0
Company plan PAYG rate (%)	90.5%	52.2%	35.2%	40.8%		49.1%

Northumbrian Water's approach to PAYG rates is to recover in each year an amount equivalent to operating costs. We accept the approach taken by the company and have applied a technical intervention to amend the PAYG rates proposed in the business plan to reflect our view of the mix of operating and capital expenditure following our totex interventions compared with the business plan. We set out how we apply the technical intervention in 'Aligning risk and return technical appendix' and we have published our calculation of the PAYG rates for each company alongside our draft determinations.

Our view of efficient totex is lower than the company's plan and contains a lower proportion of capital expenditure than the company proposed. Therefore, using Northumbrian Water's approach to recovering costs, a higher proportion of totex is recovered in the period through PAYG and less is added to the RCV. We are not intervening on PAYG rates on the basis of financeability.

Opening RCV adjustments

As part of the business plan Northumbrian Water proposed allocations of the RCV for both Water Resources and Bioresources price controls based on our guidance.

We are allocating the company's RCV between the existing wholesale controls and these new controls in accordance with the proportions proposed by Northumbrian 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 have followed the approach set out in IN 18/09 Guidance for reporting operating leases in PR19 business plans. We have used the adjustment proposed in the company business plan.

Table 4.4: Opening RCV, 1 April 2020 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources
RCV – 31 March 2020	2,037.4		2,114.6	
% of RCV allocated by control	14.97%	85.03%	93.47%	6.53%
RCV – 31 March 2020	305.0	1,732.5	1,976.4	138.1
Midnight adjustments to RCV	-4.5	-15.2	-151.7	0.0
Midnight adjustments relating to operating leases	0.3	1.3	9.8	0.3
Opening RCV – 1 April 2020 (before fast-track reward)	300.8	1,718.6	1,834.6	138.4

Return on capital

Companies are allowed a return on the RCV, equal to the Weighted Average Cost of Capital (WACC).

Our PR19 methodology set out an 'early view' cost of capital for all wholesale controls. Northumbrian Water's business plan incorporates the early view cost of capital for the wholesale price controls of 3.30% - CPIH deflated (2.30% - RPI deflated). We have updated our view of the cost of capital for the wholesale price controls to 3.08% – CPIH deflated (2.08% – RPI deflated). We set out the basis for

the updated view in the 'Cost of capital technical appendix'. We have used our updated cost of capital in this draft determination.

The PR19 methodology confirmed we will transition to CPIH as the primary inflation rate 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 4.5 and Table 4.6 set out the opening and closing balance for each component of RCV.

The PR19 methodology confirmed our protection of the value of the RCV as at 31 March 2020 across each of the wholesale price controls. Totex that is added to the RCV from 1 April 2020 is stated as 'post 2020 investment'.

In determining the 'return on capital' revenue building block, we apply the relevant deflated cost of capital to the average RCV for the year for each component (RPI inflated, CPIH inflated and post 2020 investment). This results in a return on capital for each wholesale control over the period 2015-20 as set out in Table 4.7.

Table 4.5: Opening RCV by wholesale control for each component of RCV, 1 April 2020 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
RPI inflated RCV	150.4	859.3	917.3	69.2	1,996.2
CPIH inflated RCV	150.4	859.3	917.3	69.2	1,996.2
Other adjustments	-	-	-	-	-
Total RCV	300.8	1,718.6	1,834.6	138.4	3,992.4

Table 4.6: Closing RCV by wholesale control for each component of RCV, 31 March 2025 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
RPI inflated RCV	118.3	704.4	758.2	47.8	1,628.8
CPIH inflated RCV	112.9	672.3	723.7	45.6	1,554.6
Post 2020 investment	24.1	530.9	543.2	68.0	1,166.2
Other adjustments	-	-	-	-	-
Total RCV	255.4	1,907.6	2,025.1	161.5	4,349.5

Table 4.7: Return on capital by wholesale control for each component of RCV, 2020-25 (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
RPI inflated RCV	13.9	81.2	87.1	6.0	188.2
CPIH inflated RCV	20.1	117.4	125.8	8.7	272.0
Post 2020 investment	2.2	44.9	38.0	5.4	90.5
Other adjustments	-	-	-	-	-
Total return on capital	36.3	243.5	250.9	20.1	550.8
Company view – total return on capital	39.4	269.2	280.5	19.5	608.5

Note: Total 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 return on capital for each year of the price control for each wholesale control are shown in the 'Northumbrian Water - Allowed revenue appendix' in Tables 3.1 to 3.16 and 4.1 to 4.4.

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 4.8 sets out the resultant RCV run off revenue for each component of RCV for each wholesale control.

Table 4.8: RCV run off on the RCV (5 year) (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total
CPIH inflated RCV	37.5	187.0	193.6	23.6	441.6
RPI inflated RCV	38.4	191.7	198.5	24.2	452.7
Post 2020 investment	3.1	71.6	58.6	5.7	138.9
Total RCV run-off	79.0	450.3	450.6	53.4	1,033.3
Company view – total RCV run-off	79.0	458.0	462.6	51.1	1,050.7

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).

Northumbrian Water's approach to RCV run-off rates is to align these to the long-term depreciation policy for the assets using current cost depreciation. We accept Northumbrian Water's RCV run-off rates for the draft determination. However, the interventions to allowed totex changes the post-2020 investment added to RCV and therefore the total RCV run-off. Table 4.9 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 determination.

Table 4.9: RCV run off rates for each wholesale control (5 year)

	Water resources	Water network plus	Wastewater network plus	Bioresources
Original company plan (%)	5.50%	4.79%	4.63%	7.25%
Draft determination (%)	5.50%	4.79%	4.63%	6.87%

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.

Where there are different RCV run-off rates for post-2020 investment RCV, or CPIH inflated RCV for water and wastewater network plus controls, compared to other elements of RCV, interventions to allowed totex and to PAYG rates may result in average RCV run-off rates varying between the company plan and the draft determination. The annual rates for each wholesale control are set out in the 'Northumbrian Water - Allowed revenue appendix' in Table 5.1 to Table 5.4.

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. 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. 'Northumbrian Water – Accounting for past delivery actions and interventions' provides a detailed explanation of all policy interventions we are making in the models. Table 4.10 summarises our interventions. Table 4.11 sets out the resulting adjustments to revenue and the RCV. The 'Northumbrian 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 4.4.

We are publishing the results of the reconciliation of the service incentive mechanism for all companies alongside the draft determinations for slow track and significant scrutiny companies in the 'Accounting for past delivery technical appendix'.

For outcome delivery incentives, the information we have used 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 planned 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 will designate 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 would not expect a significant impact on bills. If, contrary to expectations the bill impact were to be more significant, we would 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 have used forecast information for 2018-19 and 2019-20 to reconcile these outcome delivery incentives. For the avoidance of doubt, no application is required in 2019 for in period determinations.

Table 4.10: Reconciliation of PR14 incentives, interventions (2017-18 prices, unless otherwise stated)

Incentive	Intervention(s)
Outcome delivery incentives	No intervention required.
Residential retail revenue	We are intervening to round the company's modification factor figures to 2 decimal places to ensure consistency with the 'PR14 reconciliation rulebook'. We are including a figure of 3.74% for the 'Materiality threshold for financing adjustment - Discount Rate' in line with the 'PR14 reconciliation rulebook'. Overall, our minor interventions reduce the total residential retail revenue payment at the end of the 2015-20 period from - £0.180 million to - £0.176 million.
Wholesale revenue forecasting incentive mechanism	No interventions required.
Totex	No interventions required.
Land sales	No interventions required.
Service incentive mechanism	We are intervening to set Northumbrian Water's service incentive mechanism adjustment to +2.07% of household retail revenue to reflect its performance from 2015-16 to 2018-19. This equates to £6.228 million in total revenue over the period. This decreases revenue relative to the company's estimate of the mechanism's impact.
Water trading	We are intervening to disallow the water trading import incentive claim for the trade with Thames Water. The net effect of the water trade with Thames Water is to implement a reduction in the amount of water that is exported from Thames Water to Northumbrian Water under a modification of a pre-existing bulk supply agreement with Essex and Suffolk Water. For this reason, the incentive claim for this water trade is inconsistent with the criteria in the 'Northumbrian Water - trading and procurement code' which requires a new export agreement and with the policy intent of the water trading incentives as set out in the 'PR14 methodology' to encourage new water transfers. Our intervention reduces the total PR14 water trading revenue payment at the end of the 2015-20 period from £7.088 million to £0 million.
PR09 blind year adjustments	No interventions required.

Table 4.11: Reconciliation of PR14 incentives, 2020-25 (£ million, 2017-18 prices)

Incentive	RCV adjustments		Revenue adjustments	
	Company view	Ofwat view	Company view	Ofwat view
Outcome delivery incentives	22.2	22.2	-0.2	-0.1
Residential retail revenue	N/A	N/A	-0.2	-0.2
Wholesale revenue forecasting incentive mechanism	N/A	N/A	-11.0	-11.0
Totex	-110.3	-110.3	5.0	5.0
Land sales	-4.4	-4.4	N/A	N/A
Service incentive mechanism	N/A	N/A	8.3	6.2
PR09 blind year adjustments	-78.8	-78.8	6.6	6.6
Water trading	N/A	N/A	7.1	0.0
Total	-171.3	-171.3	15.8	6.6
Total post profiling	N/A	N/A	16.3	6.9

Note: 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.

These reconciliations are based on data from the 1 April company submissions. We will update these reconciliations to reflect the July data submissions for the final determinations.

4.4 Other allowed revenue

Other components of allowed revenue are:

- 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 will include income from connection charges and infrastructure charges.

- 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 4.12: Calculation of other allowed revenue (£ million)

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total	Company view - total
Tax	8.6	25.1	23.0	6.0	62.6	72.8
Grants and contributions (price control)	0.0	78.4	4.2	0.0	82.6	81.3
Deduct non-price control income	-6.9	-35.0	-8.5	0.0	-50.4	-50.4

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 UK corporation tax rates and associated reliefs and allowances.

Northumbrian Water provided information in data tables relevant to the calculation of the expected tax charge. The information has been updated as part of the resubmission of various data tables to take account of the recent changes to capital allowances. We have accepted the information provided by the company and applied this to the draft determination.

Our interventions in other areas may impact on forecast levels of capital expenditure and in the area of new connections our assumed recovery rates may differ from what Northumbrian Water assumes in the business plan. The resulting impact on allowances used for the calculation of taxation has not been reflected. Where these changes result in significantly different inputs for capital allowances or tax deductions, we expect Northumbrian Water to identify this as part of its representations on the draft determination.

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

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total	Company view - total
Tax	8.6	25.1	23.0	6.0	62.6	72.8

Grants and contributions (price control)

Companies receive grants and contributions from developers towards the costs of 'new developments', expenditure to reinforce the network, and 'new connections', expenditure to connect a property, for example the meter and connection pipe. We calculate the grants and contributions receivable by applying a recovery rate to our view of new developments and new connections expenditure. This ensures that developers pay a fair share towards costs to connect new properties. We use this calculation of grants and contributions receivable from developers to ensure that the amounts billed to water and wastewater customers correctly reflect only that share of any new development spend which should be borne by them.

The recovery rates are calculated as follows:

- For water new developments we use the rate implied by the Northumbrian Water business plan which is 70.9%,
- For the £14.39 million reallocated from supply demand balance expenditure that we assessed as growth the rate is 100%; and
- For water new connections and wastewater new developments we use a rate of 100% based on our understanding of historical practice in the industry and is broadly supported by company business plans.

Table 4.14: Calculation of other allowed revenue (£ million) – Grants and contributions

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total	Company view - total
Grants and contributions	0.0	78.4	4.2	0.0	82.6	81.3

Table 4.14 shows our assumed amounts of grants and contributions. Our view of new developments and new connections expenditure is lower than Northumbrian

Water's forecast. The reasons behind the differences in our view of 'Base expenditure' are set out above in the 'Cost allowances' section. For wastewater, this gives a lower view of grants and contributions than the company forecast. However for water, our inclusion of the grants in respect of the reallocated amounts from supply demand balance mean that our view is higher than the Northumbrian Water's view.

For diversions activities, where companies move their assets to make way for new infrastructure, we use the company view of the associated income and assume that this represents 100% of the costs. In modelling our draft determinations we assume that all diversions income is inside the price control. For the final determinations we consider that we should make a distinction between diversions that are inside or outside the scope of section 185 of the Water Industry Act 1991. Works that are outside the scope of section 185 are, for example, works under the New Roads and Street Works Act 1991 or those associated with High Speed 2. We are yet to have sufficient data to be able to distinguish section 185 diversions from non-section 185 diversions. For the final determination we will assume diversions expenditure is inside the price control unless it relates to non-section 185 diversions. Where companies forecast diversions works outside of section 185 then they should provide details of the income relating to this, on an annual basis, in the data request that accompanies the draft determination. This should be returned with the representations to the draft determination.

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. 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 draft determination.

Table 4.15: Calculation of other allowed revenue (£ million) – Non-price control income

	Water resources	Water network plus	Wastewater network plus	Bioresources	Total	Company view - total
Non-price control income	-6.9	-35.0	-8.5	0.0	-50.4	-50.4

Note: negative numbers represent a deduction from the allowed revenue.

Uncertainty mechanisms

The PR19 methodology makes limited provision for companies to propose bespoke uncertainty mechanisms. Northumbrian Water has not proposed any uncertainty mechanisms in its business plan.

5 Assurance, returns and financeability

This section sets out the accountability the company's Board has demonstrated for delivering its plan, the accuracy and consistency of the information within the plan and company proposals for aligning the interests of company management and investors with its customers. We summarise Northumbrian Water's response to our actions on securing confidence and assurance, including Northumbrian Water's proposals in response to our 'Putting the sector in balance: position statement'. We comment on the possible range of returns for the notional financial structure. We comment also on the financeability of the draft determination and any adjustments that we have made to the bill profile.

5.1 Assurance

The PR19 methodology set out that stakeholders should have confidence in the information presented in business plans. We set expectations that:

- the data and information presented in the plan must be subject to good assurance processes to ensure it is consistent and accurate; and
- a company's full Board should own, be accountable for and provide assurance of the business plan.

In the initial assessment of plans, we identified four actions in relation to Northumbrian Water's data tables and financial model. Northumbrian Water has satisfactorily responded to three of these actions as set out in its response to our actions on securing confidence and assurance. For the remaining advised action, we are intervening to use our view of dividend yield and growth in the draft determination financial model.

We also had concerns with two of Northumbrian Water's forward-looking Board assurance statements and included actions for the Board to provide restated assurance statements covering the areas of large investments and its governance and assurance processes for delivering resilience.

Northumbrian Water has since provided compliant Board assurance statements on both of these topics.

5.2 Putting the sector in balance

In July 2018 we published our 'Putting the sector in balance: position statement'. The position statement set 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 their actual financial structures and performance related executive pay policies show appropriate alignment between returns to owners and executives and what is delivered for customers[2];
- companies with high levels of gearing will 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.

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

Our assessment of Northumbrian Water's proposals is in Table 5.1.

Table 5.1: Our assessment of Northumbrian Water's proposals to balance the interests of customers

Issue	Our assessment
Gearing outperformance benefit sharing	Northumbrian Water's gearing at 31 March 2018 was 66%. It expects it to remain at this level in the period up to March 2020 and for it to be close to, but below, 70% during 2020-25. The company has included our default mechanism in its business plan.
Voluntary sharing mechanisms	Northumbrian Water proposes a voluntary sharing mechanism relating to £50 million of funding it received via customer bills for a tax liability which has not materialised. The company proposes to share the 'notional interest' earned on this figure as calculated by reference to the overall interest rate it receives on its cash investments. The company proposes sharing payments will be used to fund initiatives to support its customer goal of eradicating water poverty, and linked to this the company also proposes to make company contributions to a social tariff and payment matching scheme over 2020-25.
Dividend policy for 2020-25	Northumbrian Water has stated that it is committed to the expectations on dividend policy as set out in our 'Putting the sector in balance: position statement'. It has indicated a base dividend yield of 4.52% for 2020-25, stating it is for modelling purposes only. It has confirmed that when setting dividend levels, it will fully consider whether obligations and performance commitments to customers have been met. The company has committed to transparent disclosure of its dividend policy in its Annual Performance Report each year and will clearly highlight for stakeholders any changes made to the policy. However insufficient detail has been provided on which obligations or commitments to customers will be considered, the level of performance delivery used for the assessment and how they will affect dividend

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

Issue	Our assessment
	payments. We expect the company to be transparent in this area, to demonstrate that in paying or declaring dividends it has taken account of the factors we set out in our position statement. We also expect the company to clarify its proposed base dividend yield for the period 2020-25 will meet our expectations as set out in our 'Putting the sector in balance: position statement'. We expect the company to respond to these issues in its response to our draft determination.
Performance related executive pay policy for 2020-25	Northumbrian Water states that its remuneration committee has always given thorough consideration to the approach and strategy for the remuneration of its executive directors, and that although the current strategy has been in place for a number of years, it is reviewed annually. However the company did not meet our expectations, as set out in our 'Putting the sector in balance' position statement, in its response to the action in the initial assessment of business plans. We raised a detailed query with the company and the summary below is based on the information the company provided in response. The company sets out the policy for 2020-25 has been amended to include: • short term bonus based on 50% customer focused measures (10 metrics with a weighting of 5% each including for example C-Mex, interruptions, water quality, leakage and pollution incidents) and 50% competitiveness (25% earnings before interest and tax and 25% shareholder distributions) • long term bonus based on 50% RoRE and 50% shareholder distributions. • targets set by reference to performance levels which are industry leading, or leading outside the sector, rather than be constrained by their business plan. • the remuneration committee having responsibility for setting the targets for both schemes each year, taking into account what industry leading performance looks like, and for reviewing performance against the policy and determining the awards for both schemes. • full reporting of the details of the policy in the annual performance report, including any changes to the policy and the underlying reason for the change. The company states that the revised policy will take effect from 2020, and has been approved by the remuneration committee. We understand that there remain a number of details to be finalised, for example demonstration of how the targets in the long term bonus will be stretching and evidence to demonstrate how the incentives are aligned to and demonstrate substantial delivery for customers. The policy demonstrates the company's commitment to move in the direction of the expectations set out in 'Putting the sector in balance: position statement'. We expect Northumbrian Water to provide an update on this in response to its draft determination. We expect Northumbrian Water to demonstrate that its policy on performance related executive pay demonstrates a substantial link to stretching performance delivery for customers through 2020-25. We expect the company and its remuneration committee to ensure executives have stretching targets linked to performance delivery for customers and

Issue	Our assessment
	that any further updates to the policy for 2020-25 are transparently reported to stakeholders in its Annual Performance Report.
Financial resilience of the company's actual financial structure	Northumbrian Water's gearing at 31 March 2018 was 66%. It expects it to remain broadly at this level in the period up to March 2020 and for it to be close to, but below, 70% during 2020-25. Northumbrian water's current credit ratings are Baa1 (negative outlook) from Moody's and BBB+ (negative outlook) from S&P. The company says it has an overarching financial resilience objective of retaining investment grade credit ratings. Northumbrian Water says that it has a flexible dividend policy and significant reserve credit facilities. Although the company has a borrowing requirement of over £1bn in 2020-25, it considers that its capital structure provides sufficient flexibility to deal with significant adverse events having stress tested key financial metrics. In an updated statement Northumbrian Water's Board says it has assured itself that the company's plan is financeable on notional and actual capital structures and will protect the interests of customers in both the short and long term. The statement says that to the extent that any of the plausible scenarios tested would place retention of the company's credit ratings at risk, the directors are confident that this could be mitigated by delivering exceptional levels of service and performance for customers, at an efficient level of cost, and by applying its flexible dividend policy. The assessment of financial resilience does not take account of our interventions in Northumbrian Water's business plan, which includes, for example, our updated view of the cost of capital, our assessment of efficient costs, and our assessment of outcome delivery incentives. Each company is responsible for ensuring its capital and financial structure allows it to maintain financial resilience over the short and the long term and so we expect Northumbrian Water to take account of these issues in its commentary on its long term financial resilience in response to our draft determination, taking account of the reasonably foreseeable range of plausible outcomes of the final determination including evidence of further downward pressure on the cost of capital in very recent market data. In its future reporting, we expect Northumbrian Water to apply suitably robust stress tests in its long term viability statements in 2020-25.

5.3 Return on regulatory equity

The PR19 methodology sets out that we expects companies to demonstrate a clear understanding of risk to the delivery of their business plans and to explain and demonstrate how they manage and mitigate risk. We expect 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 P10/P90 confidence limit values[3].

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 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[4]. The proportion of RCV (and notional regulatory equity) that is linked to RPI or CPIH will vary 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.

Table 5.2 sets out the annual average RoRE ranges in Northumbrian Water's updated PR19 business plan submission, and the values in our draft determination. The base RoRE in our draft determination reflects our updated cost of equity. The RoRE ranges reflect our interventions outlined below, and other interventions we are making as part of our draft determination.

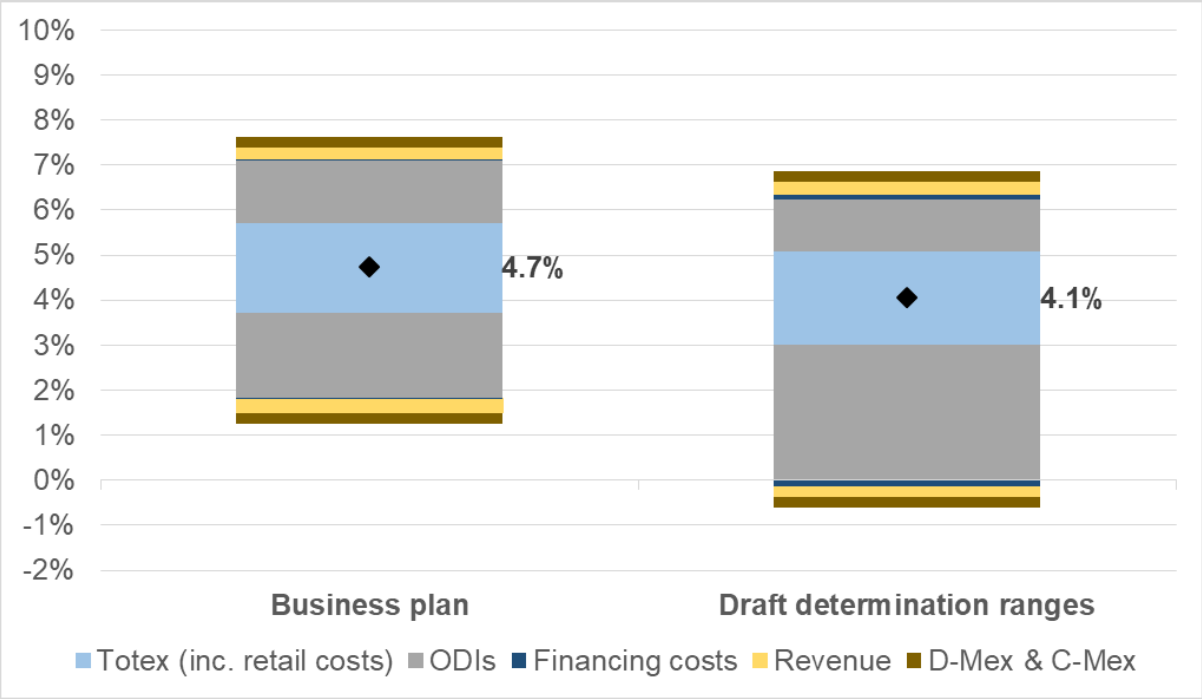
[3] P90 is the performance threshold at which there is only a 10% chance of outturn performance being better. P10 is the performance threshold at which there is only a 10% chance of outturn performance being worse.

[4] 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.

Table 5.2: Northumbrian Water RoRE ranges

	Updated business plan (Apr 19)		Draft determination ranges reflecting our interventions	
Base RoRE	4.7%		4.1%	
Risk ranges	**Lower bound**	**Upper bound**	**Lower bound**	**Upper bound**
Totex	-0.87%	0.83%	-0.91%	0.87%
Outcome delivery incentives	-1.88%	1.40%	-3.00%	1.17%
Financing costs	-0.03%	0.01%	-0.14%	0.11%
Retail costs	-0.15%	0.15%	-0.15%	0.15%
D-Mex & C-Mex	-0.24%	0.22%	-0.25%	0.23%
Revenues (includes Retail)	-0.31%	0.27%	-0.22%	0.28%
Total	**-3.47%**	**2.89%**	**-4.67%**	**2.81%**

Figure 5.1: RoRE ranges



The draft determination risk ranges shown in Table 5.2 and Figure 5.1 reflect two interventions we are making with respect to values in Northumbrian Water's updated business plan:

- We are intervening to align the RoRE risk ranges for outcome delivery incentives shown in Table 5.2, Figure 5.1, and in the PR19 financial model with the RoRE risk range values for outcome delivery incentives set out in section 2 (Outcomes). The revised values reflect our interventions on outcome delivery incentives under the Outcomes Framework which seek to take account of covariance of performance on individual outcome delivery incentives in the presentation of the overall outcome delivery incentive range.
- We are correcting the financing cost for those years that have positive values for the downside and negative values for the upside in Northumbrian Water's App 26 business plan table.

In all other areas we have retained Northumbrian Water's proposed RoRE range, which produces a negative skew overall, driven primarily by outcome delivery incentives. Our view is that an efficient company should be able to achieve the base equity return on the notional structure. We expect Northumbrian Water to consider necessary revisions to its overall RoRE range in response to the draft determination.

5.4 Financeability

We interpret our financing duty as a duty to secure that an efficient company can finance the proper carrying out of its functions, in particular by securing reasonable returns on its capital. In coming to our determinations we assess whether allowed revenues, relative to efficient costs, are sufficient for a company to finance its investment on reasonable terms and to deliver activities in the long term, while protecting the interests of current and future customers.

Our PR19 methodology requires companies to provide Board assurance that the business plan is financeable on both the notional and their actual capital structures. Our PR19 methodology 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. Northumbrian Water's Board has provided assurance that, based on the assumptions in its business plan, both notional and actual capital structures remain financeable in the long-term, and that key financial ratios are at a level that retain sufficient headroom to maintain an investment grade credit rating ensuring that resilience and customers' interests are maintained in the short and long term.

We consider that companies and their shareholders should bear the risk of their capital structure and financing choices, not customers. Therefore, we have focused on whether our draft determination is financeable based on the notional capital structure that underpins our cost of capital using our own financial model.

Our financeability assessment uses a suite of financial metrics based on those used in the financial markets and by the credit rating agencies. We assess financeability for the notional structure excluding the cost of unfunded pension contributions included in the business plan as we consider this is a matter for shareholders and not customers. We set out changes made to the financial model on the adjustments log of each company's financial model. Based on the financial ratios from the financial model alongside evidence in the business plan, we consider that Northumbrian Water's draft determination is financeable for the notional structure.

The results for key financial ratios are set out below. Key financial ratios for the notional company structure in our draft determination are broadly in line compared to the ratios set out by Northumbrian Water in its business plan.

Table 5.3: Financial ratios – notional structure before reconciliation adjustments (5 year average)

	Business plan	Draft determinations
Gearing	61.59%	59.60%
Interest cover	3.96	4.05
Adjusted cash interest cover ratio (ACICR)	1.51	1.52
Funds from operations (FFO)/Net debt	9.64%	9.96%
Dividend cover	1.77	2.18
Retained cash flow (RCF)/Net debt	6.90%	7.86%
Return on capital employed (RoCE)	5.64%	5.31%

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.

Northumbrian Water submitted financial ratios in the business plan tables for the notional company after taking account of reconciliation adjustments. We set out in the table the ratios excluding these adjustments consistent with our assessment of notional financeability. We have agreed the recalculation of the ratios with the company.

As set out in section 4 we have amended PAYG rates to reflect our view of efficient totex and therefore the mix of operating and capital expenditure. We are not intervening in RCV run-off rates, however interventions to allowed totex and to PAYG rates will change the level of post-2020 additions to RCV. The reduction in expenditure means that the RCV will now increase by a smaller amount than set out in the revised business plan.

Table 5.4: PAYG rates, RCV run off and RCV growth

	PAYG	RCV run off	RCV growth
Company plan	49.1%	4.84%	12.84%
Draft determinations	50.1%	4.84%	8.94%

Northumbrian Water is responsible for the financeability and long term financial resilience of its actual structure. We comment further on the financial resilience of the company's actual structure in Table 5.1.

We expect companies to provide further Board assurance that they will remain financeable on a notional and actual basis, and that they can maintain the financial resilience of their actual structure, taking account of the reasonably foreseeable range of plausible outcomes of their final determination including evidence of further downward pressure on the cost of capital in very recent market data as we discuss in the ‘Cost of capital technical appendix’.

6 Affordability and bill profile

6.1 Bill profile

Northumbrian Water's acceptability research, undertaken prior to September 2018 with a sample of 2,800 customers, outlines that 91% of customers find its plan acceptable. However, some customers surveyed are not given much context before answering the acceptability question, so the output is mixed between informed and uninformed acceptability. In addition, the acceptability question is leading as it contains within it a long preamble on the benefits of the plan. We note a lower proportion of customers, 63%, say they are confident that Northumbrian Water will deliver the plan.

The company does not test bill profiles for 2020-25 with its customers. However, its September 2018 submission notes that 'customers told us that they wanted stable bills and, in particular, wished to avoid sharp increases in bills in any year as these are difficult to budget for.' This is broadly reflected in the bill profile proposed for the 2020-25 period, which includes a significant real terms decline from 2020-21, followed by a shallower decline to 2024-25.

Taking account of its acceptability results and its proposal for a sector leading reduction in bills, in the round Northumbrian Water provides sufficient evidence on the acceptability of its bills. However, we note the company asks a leading question when establishing acceptability and that it does not test bill profiles or nominal bills for the 2020-25 period.

The average bill profile put forward by Northumbrian Water provides a bill that falls by 21.4% in the 2020-25 period. Our amended profile increases this to a reduction of 25.7%. The table below sets out the difference in bills between the company's submission and our amended draft determination figures. We adjust the bill profile so that it provides a decrease in 2020-21 followed by flat real bills. Northumbrian Water does not test bill profiles with customers but in setting its profile we have taken account of the view stated in its business plan that customers want stable bills.

Table 6.1: Bills in real terms

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Company plan	£429	£350	£346	£343	£340	£337
Bill profile – before re-profiling	£429	£319	£318	£318	£319	£320
Draft determinations	£429	£319	£319	£319	£319	£319

In its business plan, the company sets out its intention to increase bills by around 3% in the 2025-30 period. The company undertakes research in spring 2019 on its 2025-30 bill profile with 167 customers as part of qualitative, focus group sessions. The company establishes that its customers prefer a steadily rising bill to a bill that has an upward adjustment in year one before flattening out, which is what it plans to deliver.

Table 6.2: Long term bills

	2020-25	2025-30
Company view of plan	£343	£356

6.2 Help for customers who are struggling to pay

Our draft determinations for Northumbrian Water will deliver a real terms reduction to the average bill between 2020 and 2025.

In addition, Northumbrian Water commits to:

- increase the number of customers that receive support through social tariffs and WaterSure from 34,000 in 2020 to 95,000 by 2024-25;
- increase its social tariff cross-subsidy to £2.85 and either gain customers' support for or self-fund any extension necessary to meet its goals in this area;
- introduce a new payment app to offer customers flexibility to adjust their payment frequency and the amount that they pay; and
- reduce the number of complaints about its priority services register to zero by 2025.

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

- improve customer views of value for money;
- reduce the percentage of its customers who are in water poverty to 6.32% by 2024-25;
- improve satisfaction among customers receiving non-financial vulnerability assistance and increase awareness of this support;
- improve satisfaction among customers receiving financial support and increase awareness of this support; and
- maintain the British Standards Institution 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 6.3 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 6.3: Allowed revenue by year (£ million, 2017-18 prices)

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Water resources	77.2	76.7	75.7	74.5	73.3	377.4
Water network plus	294.1	291.1	294.3	295.6	295.9	1,471.1
Wastewater network plus	201.5	207.5	209.2	212.3	216.4	1,046.9
Bioresources	26.9	26.6	26.3	26.0	25.7	131.6
Residential retail	53.7	52.8	52.0	51.2	50.4	260.1
Total	**653.5**	**654.6**	**657.6**	**659.6**	**661.7**	**3,287.0**

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 6.4 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 6.4: Base Revenue and K factors by charging year (2017-18 prices)

	Base (£ million)	2020-21	2021-22	2022-23	2023-24	2024-25
Water resources	77.2	0.00%	-0.71%	-1.24%	-1.61%	-1.67%
Water network plus	294.1	0.00%	-1.03%	1.16%	0.46%	0.11%
Wastewater network plus	201.5	0.00%	3.09%	0.89%	1.50%	1.96%

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’. Further details of how we have applied the methodology to Northumbrian Water is set out in the ‘Bioresources revenue to remunerate fixed costs – Northumbrian Water’ model.

Table 6.5 sets out our view of the share of revenue to remunerate fixed costs.

Table 6.5: Classification of proportion of revenue to remunerate fixed costs and variable costs for bioresources

	Company view	Ofwat view based on company submitted data	Ofwat view based on draft determination
Part 1: Revenue to remunerate fixed costs £ million 2017-18 FYA CPIH deflated prices (2020-25)			
Total return on capital	N/A	19.477	20.143
Total run off	N/A	51.095	53.395
Revenue to service RCV	**N/A**	**70.572**	**73.538**
Local authority and Cumulo rates for both treatment and disposal	N/A	6.799	6.799
Fixed share of other direct costs of treatment and disposal	N/A	9.203	15.441
Fixed share of other indirect cost of treatment and disposal	N/A	2.826	4.742
Fixed PAYG revenue	**N/A**	**18.827**	**26.981**
Fixed share of revenue to cover tax	N/A	0.000	0.000
Pension deficit repair contributions	N/A	1.978	1.332
Other fixed costs	**N/A**	**1.978**	**1.332**
Revenue to remunerate fixed costs	**98.749**	**91.377**	**101.851**
Part 2: Variable revenue (£/TDS) 2017-18 FYA CPIH deflated prices (2020-25)			
Unadjusted revenue (£ million)	109.321	109.321	131.582
Revenue to remunerate fixed costs	98.749	91.377	101.851
Revenue to remunerate variable costs (£ million)	**10.572**	**17.943**	**29.731**
Forecast volume of sludge (TDS)	371,100	371,100	371,100
Variable revenue (£/TDS)	**28.487**	**48.351**	**80.115**

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 Northumbrian 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 6.6: Bioresources control

	2020-21	2021-22	2022-23	2023-24	2024-25	2020-25
Unadjusted revenue (£ million)	25.777	26.061	26.309	26.593	26.841	131.582
Forecast volume of sludge (TDS)	72,700	73,500	74,200	75,000	75,700	371,100
Variable revenue (£/TDS)	N/A	N/A	N/A	N/A	N/A	80.115

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales. Our vision is to be a trusted and respected regulator, working at the leading edge, challenging ourselves and others to build trust and confidence in water.

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