

January 2019

Trust in water

Technical appendix 3: Aligning risk and return

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1 Introduction

This document supplements chapter 10 of [PR 19 Initial assessment of plans: Summary of test area assessment](#) (aligning risk and return) to provide further information to companies to help with the resubmission of their business plans in April.

We set out information from company business plans on the cost of capital and retail margins, risk analysis, financeability and the recovery of costs from customers using the pay-as-you-go (PAYG) and regulatory capital value (RCV) run-off levers.

This area of risk and return is important for the following reasons:

- The cost of capital, PAYG and RCV run-off are major drivers of customer bills, and so close scrutiny of company choices is in customers' interests.
- We expect each company to submit a plan that is financeable, with Board assurance and supporting evidence that the plan is financeable on both a notional¹ and the actual capital structure. This is important to ensure resilient services are provided to customers in the long term.
- We expect companies to demonstrate a good understanding of risk and have good risk management processes in place. We expect this to underpin an assessment of the risks to equity returns measured as a return on regulatory equity (RoRE) for the notional financial structure. This assessment gives an indication of whether the balance of risk and return is appropriate.

In the remainder of this appendix, we set out:

- In section 2 we set out our assessment of company proposals on the cost of capital and retail margins.
- In section 3 we set out comparative information from company business plans on their risk analysis and issues for consideration in revised business plan submissions.
- In section 4 we provide comparative information on the approach companies have taken to their assessment of financeability.

¹ In defining an efficient company, we set a notional capital structure for all companies with a proportion of debt to total regulatory capital at 60 per cent for PR19.

- In section 5 we comment on issues relevant to company choices of the PAYG and RCV run-off rates.

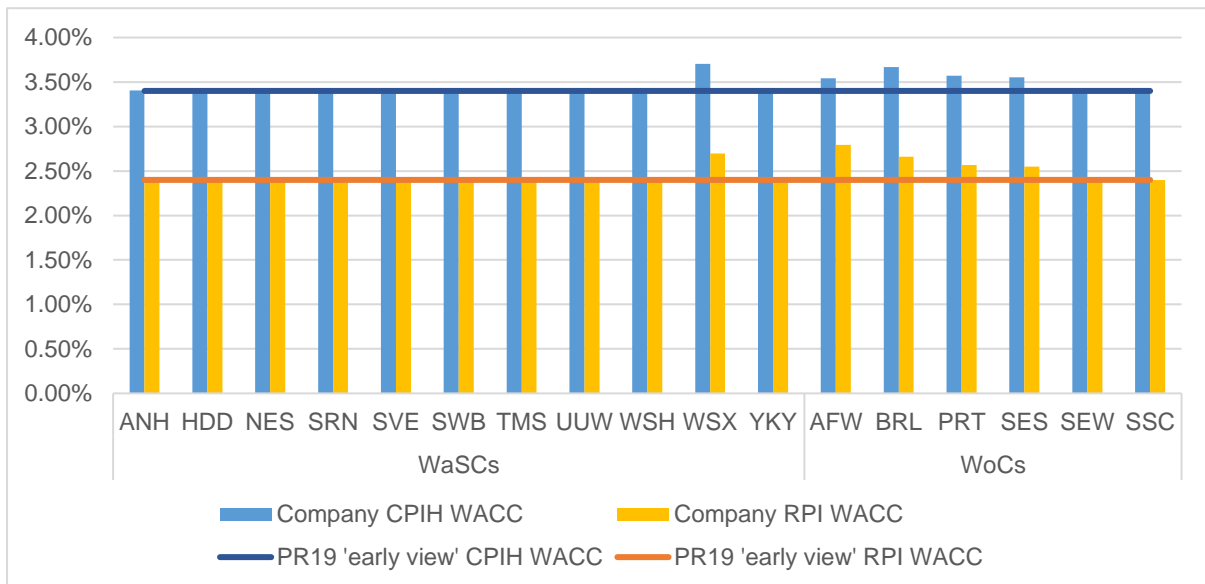
We comment on proposals on company specific cost of debt adjustments separately in [Technical appendix 4: Company specific adjustments to the cost of capital](#).

2 Cost of capital and retail margins

The cost of capital is a key component of customer bills, in 2015-20 it represented around 20% of the average bill. Section 10 of our [PR19 methodology](#) provides an early view of the cost of capital and retail margins which we expect companies to consider in preparing their business plans. Where companies propose a departure from this, we expect companies to robustly justify their alternative proposal in terms of benefits for customers, and within the context of market conditions for 2020-25.

Figure 1 sets out the cost of capital used by companies in their business plans.

Figure 1. Weighted average cost of capital (WACC) underpinning company business plans²



Source: Business plan table App32 – Weighted average cost of capital for the Appointee – vanilla (pre-tax cost of debt and post-tax cost of equity)

12 companies base their business plans on our ‘early view’ of the cost of capital. Of the five companies who propose an alternative cost of capital:

² Company revenues will be based on a blended WACC, which at the start of the control will be 50% RPI-based and 50% CPIH based, and will then change over time based on the share of the RCV that is indexed by RPI and CPIH.

- three companies (Bristol Water, Portsmouth Water, and SES Water) propose a company-specific uplift to our 'early view' cost of debt;
- one company (Wessex Water) proposes a higher cost of equity than our 'early view'; and,
- one company (Affinity Water), said that it accepts our 'early view' cost of capital on a nominal basis, but proposes lower long-term assumptions for CPIH and RPI, meaning that the company's real cost of debt and equity (which directly influences bills) is higher than our early view real cost of capital.

There is sufficient evidence to support only one of these claims (the claim by Portsmouth Water). Our assessments of the claims for the company-specific adjustments to the cost of debt are set out in [Technical appendix 4: Company specific adjustments to the cost of capital](#).

Wessex Water does not provide convincing evidence in support of its cost of capital proposal, which at 2.7%³ is above the top end of the 'plausible range' of 2.2%-2.6% from our final methodology 'early view'.⁴ The company suggests the justification for this higher cost of capital is on the basis of credit rating agency comments that the sector has become less stable and predictable; however this seemingly contradicts another part of its submission which implies that the key factor is a higher Total Market Return.⁵ The plan in general fails to provide convincing evidence to explain the input assumptions to its proposed cost of capital; in particular it fails to provide sufficient supporting data relevant to 2020-25.

Affinity Water does not provide convincing evidence to support its alternative long-term inflation assumptions. These assumptions are based on analysis of historical CPI, CPIH and RPI data. There is however no compelling evidence to explain why this is preferable to the forward-looking estimate that we based our 'early view' of the real cost of capital on. For example, Affinity Water's assessment of the wedge between RPI and CPI is based on data since 2005; it does not incorporate consideration of the Office for National Statistics' 2010 change to inflation measurement which has led to a structurally higher (RPI-CPI) wedge going forward.

³ In its plan, Wessex Water states the cost of capital it applies is at the top end of our early view range. However, the early view range was stated as the cost of capital applicable at the level of the Appointee; Wessex Water applied this to the wholesale controls ignoring the adjustment made for the retail control.

⁴ All figures deflated using our long-term RPI assumption of 3.0%

⁵ A measure of the return equity investors require to hold a diversified portfolio of shares, and an input to the Capital Asset Pricing Model we use to calculate the allowed cost of equity.

In addition, the company has not taken account of other evidence on the forward-looking RPI/CPIH wedge (for example, taking account of the Office for Budgetary Responsibility's estimate of the long term RPI-CPI 'wedge'⁶).

All companies base their plans on our final methodology 'early view' household retail net margin of 1.0%. We have assigned actions for two companies around proposed business retail margins where we have minor concerns that the net margin is too high for certain customer groups or the increase in gross margin to the overall cap leads to a bill increase that is too pronounced.

We will update our view of the cost of capital and retail margins⁷ for the draft determinations we publish in July 2019, and again for our Final Determinations in December 2019, to take account of updated market data. The draft determinations for the fast track companies will be based on our 'early view' cost of capital and so these companies will have the opportunity to make further representations, as required, to the updated cost of capital we publish in July.

⁶ OBR, [Revised assumption for the long-run wedge between RPI and CPI inflation](#), March 2015

⁷ This will include business retail margin caps for Yorkshire Water, if it is clear that the company will not have exited the business retail market by that point.'

3 Risk analysis – return on regulatory equity

3.1 Approach to assessment of risk and return on regulatory equity

The PR19 methodology sets out that we expect companies to demonstrate a clear understanding of risk to the delivery of their business plans and to provide clear evidence of the risk management measures they have in place. We expect companies to use RoRE analysis to assess the impact of upside and downside risk on the basis of the notional capital structure for the appointed business.

The methodology sets out that the analysis should be based on a prescribed suite of scenarios that are defined in section 3.3 of [appendix 12 of the methodology](#), with the results calculated using the PR19 financial model. The guidance for compiling the data, using business plan data table App26, is set out in chapter 3 of our [updated guidance for the final business plan data tables](#).

We require companies to use a P10/P90 confidence limits approach to establish the levels at which to model the impacts of our prescribed scenarios on RoRE. These limits reflect out or underperformance that would not be exceeded 90% of the time.

The methodology sets out that where companies propose bespoke uncertainty mechanisms, these should be underpinned by compelling evidence that sets out the management actions companies will undertake to manage the uncertainty and the alternative approaches to consider when requesting a bespoke uncertainty mechanism.

In this section we discuss issues arising from our assessment of RoRE analysis and companies' proposals for uncertainty mechanisms.

3.2 Issues arising in company business plans

In general, companies have done a good job of estimating upside and downside P90/P10 risk ranges, explaining their rationale, and making use of historic data, forecast data and expert judgement. A number of companies also use Monte Carlo modelling.

However, several companies provided insufficient evidence on their measures to manage and mitigate risks. In these instances, we have asked them to set out how

their risk management measures are relevant to, and effective in, managing exposure to risk on the basis of the RoRE analysis presented in their plans.

Figure 2 below shows average annual P10/P90 RoRE impact ranges across the prescribed scenarios for the period from 2020 to 2025. This is derived from the information included in companies' business plans. We have extracted this data from business plans rather than the financial model as some companies note technical issues with the functionality of the PR19 financial model, which are addressed in the revised version of the financial model⁸ that has been published alongside our IAP decisions, for companies to use in resubmissions.

The base/expected RoRE level can slightly differ between companies because it is presented on a real basis, with the real cost of equity blended according to the proportion of the RCV that is indexed to RPI or CPIH. The proportion of regulatory equity that is linked to RPI or CPIH (and so the real equity return) 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.

The differences in the base RoRE level also reflect differences in the cost of equity included in company business plans (for example Wessex Water proposes a higher cost of equity than our early view) and the basis on which companies have chosen to present the RoRE analysis in their business plans; for example, Yorkshire Water used the RPI derived cost of equity as the base return.

We will provide additional guidance to companies for their resubmissions of App26 data, and revise the presentation of RoRE risk ranges in our draft and final determinations, taking a common approach to the calculations using the PR19 financial model.

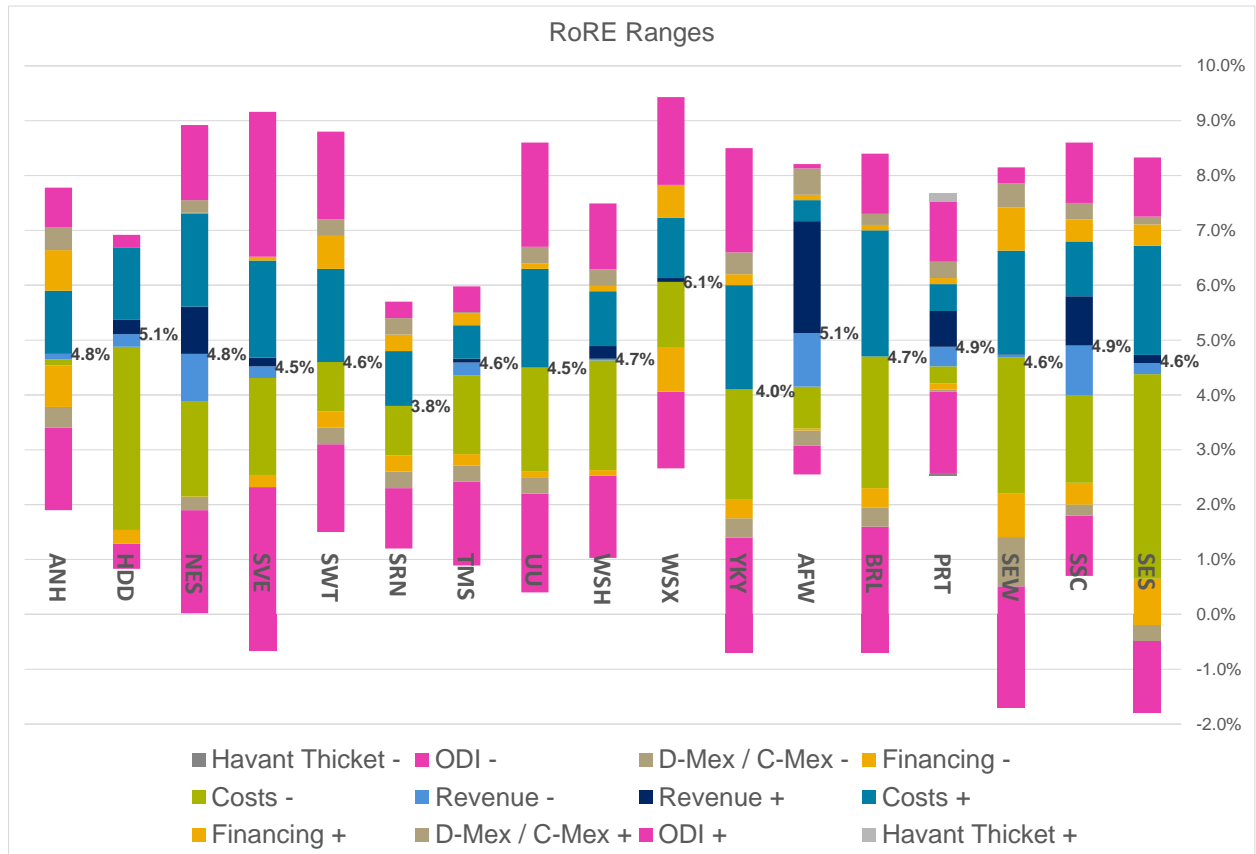
In some cases, companies have actions to revise the presentation of their assessments. For example:

- There is a lack of explanation in Southern Water's plan to support its view of base return on equity.
- Anglian Water provides positive values for both their upside and downside totex risk ranges (including uncertainty mechanism) and the rationale for this is not clearly explained.

⁸ PR19 financial model version PR19 16z

Where companies have actions to provide further and better evidence in support of their proposed outcome delivery incentives (ODIs) and, in some cases, to add, remove, or amend specific ODIs, they will need to address the impact of these on their RoRE analysis in their business plan resubmissions.

Figure 2. Annual average RoRE ranges presented in company business plans⁹



The percentage value shown against each company is its base RoRE value.

In addition to the issues noted above, for some companies, there is a lack of evidence supporting the presentation of RoRE ranges in the following areas:

- Some companies claim they are exposed to a downside skew to totex performance; and

⁹ Differences in the RoRE ranges and base RoRE position stated by companies are driven by variations in the assessment/presentation approaches used by companies. We will publish RoRE ranges based on a consistent approach from our financial model again in our draft and final determinations.

- Some companies suggest they are exposed to significant revenue risks, which are not clearly explained.

We also find that there is a lack of convincing evidence to support bespoke uncertainty mechanisms from some companies. In some cases the evidence provided in support of the uncertainty mechanisms does not include RoRE analysis, as required by the PR19 methodology, and as required by the guidance set out for business plan table App26.

We discuss these issues in further detail below.

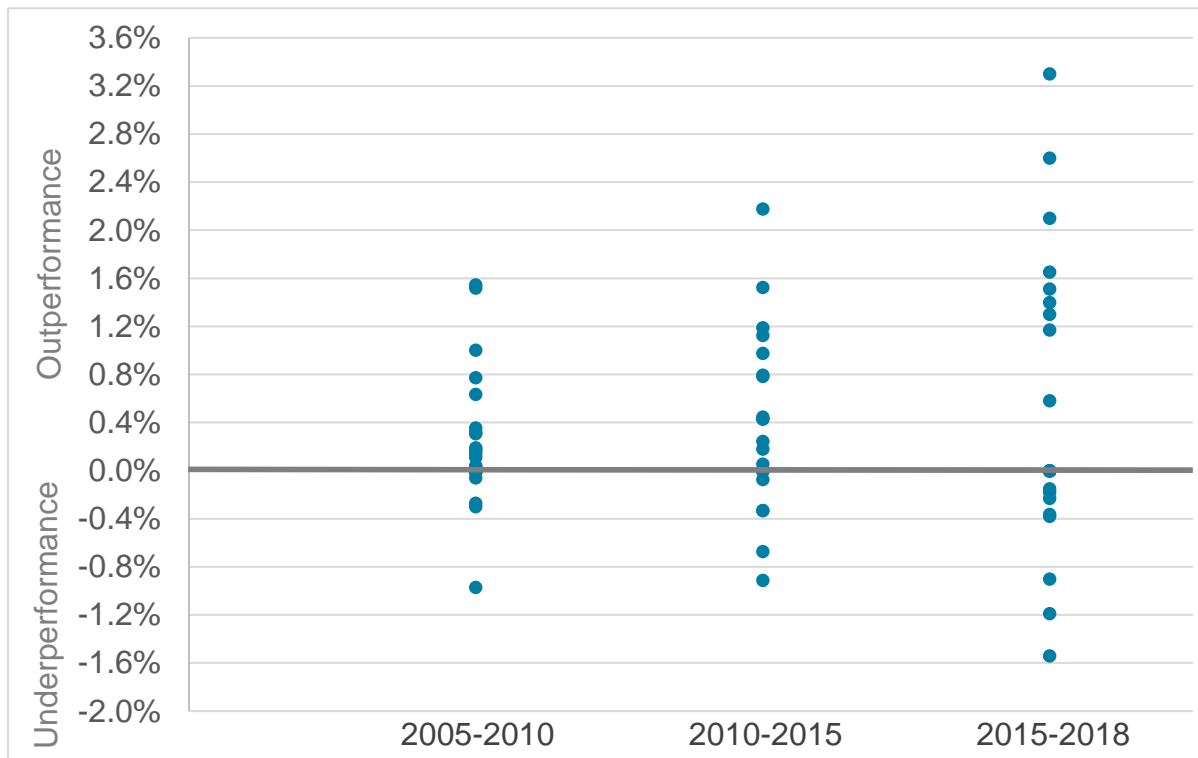
3.3 Totex ranges

Several companies consider that they face a greater downside (over expenditure) risk in respect of totex than upside (under expenditure). This is reflected in a downward skew in the RoRE range for totex in Figure 2.

While some companies that present a downward skew have carried out a detailed analysis of factors that could impact on totex performance, we would expect, that in their final presentation of totex impacts, companies should consider whether, in the round, it is reasonable to assume a downward skew. The evidence from 2015-18 suggests there is not a downward skew in terms of outturn performance. For previous regulatory periods, which were subject to separate operating and capital cost allowances and incentives, PwC find that overall, there is no evidence of a negative skew in outturn performance in these periods.

The effects of the totex incentive regime can be seen from historical performance ranges of the companies as illustrated in Figure 3, which for each of the regulatory periods analysed, suggests a range of company performance, but which is positively skewed overall.

Figure 3. Historical cost performance



Sources: Data for 2005-10 and 2010-15 prepared for [PwC’s report for Ofwat on ‘Refining the balance of incentives for PR19’ \(June 2017\)](#) .

Data for 2015-18 is from our [monitoring financial resilience report for 2017-18](#).

While past performance is indicative of a range of performance across the sector – both positive and negative - possible explanations for the overall positive skew are that:

- a) Companies have more information than us about their current and expected future costs when submitting business plans, which can impact on the cost efficiency challenge and the potential for outperformance of regulatory benchmarks.
- b) The incentive based regulatory approach strongly motivates companies to seek efficiency savings, by allowing companies and their investors to share a proportion of outperformance and bear a proportion of underperformance.

The RoRE analysis should be prepared on the basis of an efficient notional company, and so companies would, where applicable, need to demonstrate why they would expect a downside skew on their expected totex performance.

Where companies have a material downward skew in their totex risk ranges in their forward looking RoRE analysis, we have put actions in place for them to amend the

RoRE assessment or provide detailed and compelling evidence to support the P10 and P90 values for totex included in the business plans.

3.4 Revenue ranges

The RoRE analysis presented by some companies in their business plans suggests they face material risks in respect of revenue levels for the period from 2020 to 2025. However, these companies have not provided sufficient evidence of material revenue risk and so we expect these companies to revisit their assessment in their resubmission. This section sets out the factors these companies should take into account.

The regulatory incentive and reconciliation mechanisms that apply across each of the price controls reflect the form of the price controls and the nature of the incentives we place on companies. We assess the extent of revenue risk to be limited across the price controls in 2020-25 as set out below.

- For the **water resources** and **network plus** parts of the value chain, there is minimal revenue at risk as a consequence of the revenue forecasting incentive mechanism. The mechanism allows companies to correct under- or over-collected revenue, subject to a two year lag, which implies no revenue risk in the RoRE assessment. However, to incentivise accurate revenue forecasts, the revenue forecasting incentive includes a small financial penalty of up to 3% of the variance where the variance exceeds 2% of allowed revenue.
- The **network plus** controls also benefit from a volume-based revenue correction mechanism for developer services to encourage timely and quality new connections. Companies are required to forecast and then report annually on the volumes of, and revenues from, providing contestable and non-contestable services to developers. We will only apply penalties where there are large forecasting errors. We will set the volume differentials that will trigger the incentive as part of companies' final determinations. The separate incentives that apply to the revenue forecasting incentive and the mechanism for developer services replace the wholesale revenue forecasting incentive mechanism in place at PR14.
- While companies bear some risk in the **water resources** wholesale price control associated with the potential for bilateral market entry if the market is opened in England during 2020-25, the PR19 methodology envisages this to be small and nascent in the period to 2025, and remuneration in respect of pre-2020 RCV balances is guaranteed.

- The design of the average revenue control for sludge volumes in 2020-25 will mean that companies' exposure to volume risk is limited. It includes a symmetrical forecasting accuracy incentive, under which we will apply a penalty to the difference between actual and forecast sludge production, when the variation is greater than $\pm 6\%$. The symmetrical penalty will be 10% of the standard average revenue, applied to the difference between forecast and actual sludge volumes, with no cap or collar on allowed revenues. Our analysis carried out for the final methodology suggests that annual variations for sludge were within $\pm 6\%$ band, which implies minimal revenue risk at the level of the Appointee under the incentive mechanism. The methodology also confirms that we will consider adjusting the way the forecasting accuracy incentive is applied, where companies provide compelling evidence.
- The **residential retail control** is an average revenue control, subject to reconciliation for the number of customers served in accordance with the cost to serve that is defined in the price control. The **business retail control** applies only to companies whose areas are wholly or mainly in Wales, or whose areas are wholly or mainly in England who have not exited the business retail market. Revenue from business retail customers for these companies represents a small proportion of their total revenue. The revenue risk within these price controls arises from bad debt risk, which companies are strongly incentivised to manage.

Where companies have implied in their RoRE analysis that a relatively significant proportion of revenue is at risk, we have asked them to look again at the revenue risks and to either provide detailed and compelling evidence to support the P10 and P90 values for revenue that they have included in their business plans or re-evaluate their assessment of downside risk for revenue.

3.5 Uncertainty mechanisms

The PR19 methodology makes limited provision for companies to propose bespoke uncertainty mechanisms.

Our methodology sets out that we apply a high evidential bar as uncertainty mechanisms shift the balance of risk to customers. This evidence should include the management actions companies have taken and will take to manage the uncertainty, as well as the range of approaches considered when preparing their business plans, and the impacts of those approaches. We set out that a request for an uncertainty mechanism should be underpinned by RoRE analysis in business plan table App26 and commentary in business plans, taking account of the business plan table reporting guidance.

Our methodology sets out there is to be no presumption that the notified items allowed at the PR14 price control (business rates for water wholesale and the specific items related to the Thames Tideway Tunnel) will be repeated for the 2020-25 period. Where companies continue to propose uncertainty mechanisms for business rates, this should be accompanied by convincing evidence that such bespoke mechanisms are necessary, including to allow us to assess the possible materiality of the uncertain item to the company. Two companies (Welsh Water and Sutton and East Surrey) request uncertainty mechanisms for business rates, but neither provide sufficient evidence to support their case.

The number of uncertainty mechanisms requested by companies is considerably less than at the equivalent stage of PR14. Eleven companies request no uncertainty mechanisms, and we summarise our assessment of the uncertainty mechanisms for the six companies that did in table 1.

We will make decisions on uncertainty mechanisms in our draft and final determinations. Based on information presented in business plans, there are two mechanisms – Canal and river trust payments for Bristol Water and Metaldehyde treatment costs for Affinity Water - where further evidence is required to allow us to determine whether the proposed mechanism is necessary and that the issue will remain uncertain at the time of our draft or final determinations. We do not find sufficient evidence for the other uncertainty mechanisms proposed by companies.

Table 1. Uncertainty mechanisms proposed in business plans

Water company	Uncertainty mechanism	Indicative cost	Average annual RoRE impact if uncertainty mechanism not applied⁴	Our initial assessment
AFW	Notified item: Sustainability reductions to water abstraction levels.	£3.7m (from 2.6Ml/day to 3.7Ml/day)	0.1%	The lower level of reduction is referred to in WINEP3 ¹⁰ and the higher level might separately be

¹⁰ WINEP: Water Industry National Environment Programme

		£108.7m (from 3.7 MI/day to 20.0 MI/day)	1.8%	required. There is, however, insufficient evidence to demonstrate that associated costs could not be provided for in the PR24 price control.
AFW	Notified item: Metaldehyde treatment	£137m	2.2%	Whilst AFW has set out a case for expenditure requirements on metaldehyde treatment associated with water transfer schemes, we will, need to review the possible impact of changes to relevant regulations with the company ahead of our draft and final determinations.
BRL	Notified item: Canal and river trust payments ²	£41m	1.6%	BRL has proposed that 75% of uncertain costs should be borne by customers. There is insufficient evidence that this cost item will remain uncertain at the time of the price determination, as the cost levels are presently subject to arbitration.
SES	Notified item: Business rates	Not stated	-	SES has proposed retaining the existing (PR14) adjustment mechanism in respect of business rates. However, it has not to date provided convincing evidence for the necessity of retaining the mechanism.
SES	Notified item: Lead standards	Not stated	-	SES has proposed that there should be an adjustment mechanism similar to the existing (PR14) one for business rates in respect of tighter lead standards. However, it has not to date provided convincing evidence for the necessity of a mechanism or shown that the cost risk could not be addressed through the provisions of Condition B

				of its Instrument of Appointment, which allow for referrals for possible changes to the price control in respect of legal requirements.
WSH	Notified item: Local authority rates	Not stated	-	WSH has proposed that there should be an uncertainty mechanism in respect of business rates. However, it has not to date provided convincing evidence for the necessity of a mechanism.
WSX	WINEP – Unconfirmed requirements	N/A	N/A	This issue has been considered under the securing cost efficiency test area for PR19.
SVE	Real option mechanism: climate change	£120m	0.3%	Insufficient evidence that this could not be addressed as a transitional scheme at PR24.
SVE	Real option mechanism: metering uncertainty	£35m	0.1%	This issue has been considered under the delivering outcomes for customers test area for PR19.
SVE	Wastewater environmental programme	£121m	0.3%	This issue has been considered under the securing cost efficiency test area, reference action SVE.CE.A4.
SVE	Interconnector	£40m	0.1%	This item will not be taken forward as an uncertainty mechanism, because it is considered separately as a strategic regional solution development, reference action SVE.CE.A1.

¹The RoRE impact percentage is before any mitigation measures taken by the company, but takes account of the relief from an assumed 50% sharing rate applicable to overspends and underspends (although this adjustment will be logged up to PR24). The exception is Bristol Water where the proposed mechanism is for customers to bear 75% of the uncertain costs and this is already reflected in the indicative cost stated.

Source: company business plans and Ofwat RoRE calculations

4 Financeability

4.1 Approach to financeability in the IAP assessment

The PR19 methodology sets out that we expect each company to provide Board assurance that its plan is financeable on both the notional and its actual capital structure. To provide the required assurance, the methodology sets out our expectation for each company to:

- Set out the credit ratings targeted for both the notional and its actual capital structure, along with the rationale as to why this is appropriate for the company, having regard to the funding requirements over the price review period and the longer term, both for refinancing existing debt and future investment, and to the long term financial resilience of the company.
- Set out the associated level of financial ratios required to maintain the target credit ratings and explain how these levels have been determined.
- Set out any actions necessary to address any issues of financeability and provide compelling evidence of its financeability at the time it submits its business plan.

In this section we set out issues arising from our assessment of the financeability IAP test question. It is important to note that the IAP decision is not a decision on our assessment of the financeability of companies. These decisions will be made in draft, and in particular, our final determinations.

4.2 Target credit ratings

In this section we comment on the credit ratings targeted by companies on both the notional and the actual basis in their business plans.

For the **notional capital structure**, most companies target BBB+/Baa1/BBB+ (Fitch, Moody's, S&P) stating that this is consistent with the approach to setting the cost of new debt in the early view cost of capital. Four companies target BBB/Baa2/BBB (Fitch, Moody's, S&P), with three companies at the lower rating setting out that this is consistent with financial ratios calculated for the notional company structure whilst still representing an investment grade credit rating.

We have specifically not set out a credit rating that we expect companies to target as we consider this is an issue which ought to be decided by a Board of a company, consistent with a company's licence obligations and prudent management of its finances. The class of rating selected may depend on the investment and funding

needs of a company, as well as the need to maintain financial resilience in the price control period and the longer term. However our assessment requires a need for careful consideration of the evidence and assurance companies provide where a lower credit rating is targeted, because lower target ratings indicate a lower level of headroom to potential cost shocks. We assess that none of the four companies that state the lower target credit rating provide sufficient evidence that they have considered whether this target is reasonable for the notional company in the context of the proposed investment and maintaining long term resilience.

For the **actual capital structure**, most companies also target BBB+/Baa1/BBB+ (Fitch, Moody's, S&P) in many cases being consistent with current or expected credit ratings. Four companies target credit ratings one notch lower, with one notch of headroom to the minimum investment grade at Baa2 and/or BBB. These targets are primarily driven by companies' actual financing arrangements. As for the notional structure, we apply a higher evidence bar in assessing whether the company demonstrates that the credit rating is sustainable for long term financeability and financial resilience when Baa2/BBB has been targeted for the actual structure, given lower levels of headroom to cost shocks.

One company, Wessex Water, states a target of a 'robust investment grade' for both the notional and its actual capital structures. While the targets may be appropriate, we expect the target credit ratings to be set in the context of the ratings of the recognised credit rating agencies and the headroom to the minimum investment grade credit rating taking account of the investment and funding requirements of the company.

We set out in tables 2 and 3 the credit rating targets for each company for the notional and actual capital structure, sourced from business plan table App10.

Table 2. Credit ratings targeted for the notional capital structure

	Target credit rating for the notional financial structure		
Water company	Fitch	Moody's	Standard and Poor's
ANH	-	Baa1	-
HDD*	-	A3	A-
NES	-	Baa1	BBB+
SRN	-	Baa2	BBB+
SVE	-	Baa1	BBB+
SWB**	-	-	'Boundary of A/BBB+'
TMS	-	Baa1	BBB+

WSH	BBB	Baa2	BBB
WSX	'Robust investment grade'		
UUW	-	Baa1	BBB+
YKY	-	Baa1	-
AFW	-	Baa1	-
BRL	-	Baa2	-
PRT	-	A3	-
SES	-	Baa1	-
SEW*	-	Baa2	BBB
SSC	-	Baa2	-

*Elsewhere in the business plan, Hafren Dyfrdwy state a notional target credit rating of Baa1/BBB+ (Moody's/S&P) and South East Water state a notional target credit rating of Baa1/A- (Moody's/S&P)

** South West Water's licence provisions do not require the company to maintain a credit rating. However it is required to certify, in the opinion of the Board, it would be able to maintain an issuer credit rating which is an investment grade rating.

Table 3. Credit ratings targeted for actual capital structure

	Target credit rating for the actual financial structure		
Water company	Fitch	Moody's	Standard and Poors
ANH	-	Baa1	-
HDD*	-	A3	A-
NES	-	Baa1	BBB+
SRN	-	Baa1	A-
SVE	-	Baa1	BBB+
SWB**	N/A	N/A	N/A
TMS	-	Baa1	BBB+
WSH	BBB+	Baa1	BBB+
WSX	'Robust investment grade'		
UUW	-	A3	BBB+
YKY	-	Baa2	-
AFW	-	Baa1	-
BRL	-	Baa2	-
PRT	-	Baa2	-
SES	-	Baa1	-
SEW	-	Baa2	BBB
SSC	-	Baa1	-

*Elsewhere in the business plan, Hafren Dyfrdwy state an actual target credit rating of Baa1/BBB+ (Moody's/S&P)

** South West Water's licence provisions do not require the company to maintain a credit rating. However it is required to certify, in the opinion of the Board, it would be able to maintain an issuer credit rating which is an investment grade rating.

4.3 Financial ratios

All companies provide the financial ratios set out in the methodology and many companies provide additional company-specific ratios. Where companies propose alternative financial ratios that are used in the assessment of financeability, we expect companies to provide clear definitions and, where appropriate, a reconciliation to the standard ratios.

The lower cost of capital than at PR14 and, in particular, the lower real cost of equity in our early view cost of capital has reduced the cash flows available to cover the debt interest payments which has tended to reduce certain key financial ratios for companies. This has been partly offset by the transition to CPIH as the inflation index and the lower notional cost of debt at PR19.

In their assessment of financeability, in line with our expectations, most companies have set out the thresholds they consider appropriate to maintain the target credit ratings for the notional and actual capital structures, though not all companies have set out how the thresholds have been determined.

Several companies have set target thresholds for key financial ratios based on guidance from the credit rating agencies, focussing on guidance published by Fitch Ratings¹¹ (Fitch) and Moody's Investor Services¹² (Moody's) published in 2018 in which both rating agencies revised their ratio guidance. Both rating agencies state that changes to their guidance reflect their view of an increase in the sector's business risk due to a tougher proposed regulatory package for the next price control with the expectation of more volatile cash flow and a reduction in the stability and

¹¹ In July 2018, Fitch revised its gearing rating sensitivity and post maintenance interest cover (PMICR) sensitivity in 'Fitch Revises Outlook on 3 UK water holding companies to negative', Fitch Ratings 5 July 2018.

¹² In May 2018, Moody's revised its ratio guidance for gearing and interest coverage for a given credit rating in 'Regulator's proposals undermine the stability and predictability of the regime', Moody's Investor Services 22 May 2018

predictability of the regulatory regime, following publication of our 'Putting the sector in balance' consultation.

We comment on the issues raised by the credit rating agencies below; we address first the impact of more volatile cash flows on the notional and actual financial structures, followed by a discussion of the impact of our actions on 'Putting the sector in balance'.

Impact of increased revenue at risk with a notional financial structure

The PR19 methodology proposes to increase the proportion of revenue at risk from service performance through ODIs and to sharpen the cost sharing incentives to reward the most efficient companies with inefficient companies bearing a greater share of underperformance. These changes to the methodology, which include greater use of in period reconciliation adjustments, encourage companies to focus on delivery for customers and the environment. However we note that use of caps and collars on individual performance commitments will continue to limit overall risk exposure. And, in their business plans, we note that several companies present modest downside ODI RoRE ranges of 1.5% or less, compared with average sector downside risk of -1.7% stated in the RoRE analysis at PR14.

We also note that in other respects, the regulatory mechanisms that protect customers and companies from (i) over or under recovery of revenue (section 4.4), and (ii) out and under performance of cost allowances (section 4.3) limit downside risk in similar ways to PR14.

In recognition that our methodology increases the revenue at risk from service and efficiency performance, at a time when market expectations for the cost of capital are lower than any previous price review, we set a lower gearing assumption for the notional company in our early view cost of capital. The effect of the lower notional gearing assumption is to increase cash flow headroom to service efficient debt costs than if notional gearing levels were unchanged compared with PR14.

However, the sharpening of incentives does not mean the sector as a whole should expect to receive returns that are skewed to the downside – rather that companies should expect to be rewarded for the provision of high quality, efficient services and that inefficient companies should bear a greater proportion of underperformance.

Impact of increased revenue at risk with an actual financial structure

Reflecting the expectation of a lower cost of capital, we have, for some time¹³, signalled a need for highly geared companies to ensure their actual financial structure will remain resilient, and where necessary amend their financing structures to ensure long term resilience.

Highly geared companies have a lower equity base to absorb financial shocks, which is why we apply a high bar in assessing the financeability and financial resilience of company business plans where underpinned by lower levels of financial headroom. In some instances, highly geared companies have signalled they will take action to amend their actual capital structures – where there is a clear and well evidenced plan including a timetable of the changes to be made to the capital structure, we have taken this into account in our assessment of the business plan.

Putting the sector in balance

Companies in this sector provide an essential public service; they should act at all times to take account of the expectations placed on them by customers who are not able to choose their supplier. Where companies behave in a way that falls short of customer and wider stakeholders expectations, the legitimacy of the regime can be put at risk. This is a risk that endures.

The targeted improvement we made to the PR19 methodology in our putting the sector in balance position statement reflects a time of increased focus on the legitimacy of the sector and its public standing, particularly as the result of the actions of some companies. These changes help to increase transparency and better align the incentives on company owners and executive teams to focus on delivering the right outcomes for customers. These targeted changes, alongside the initiatives set out in April 2018¹⁴ and evidence in business plans and elsewhere of supporting steps companies are taking, aim to restore the legitimacy of the sector.

In our view, the putting the sector in balance position statement and subsequent actions of the companies helps to manage and reduce regulatory risk, as the steps we took are in response to the behaviours of some companies, it does not follow that all companies in the sector are exposed to greater levels of regulatory risk..

¹³ See for example, Cathryn Ross's [speech](#) at Moody's conference in 2017.

¹⁴ See for example the [implementation letter](#) sent to the Chief Executives of all water companies in April 2018.

Implications for our assessment of financeability

For our assessment of financeability of the notional financial capital structure in the draft and final determinations, we will consider a range of key financial ratios alongside other evidence presented by each company. In the IAP, where business plans include financial ratios below stated target thresholds without clear evidence that this was considered in the assurance process for providing Board statements on financeability, we have sought further assurance from companies that the business plan is financeable.

However, we recognise that the target financial ratios stated by the credit rating agencies are a guide, which form one part of the credit rating assessment. In practice, such ratios are considered alongside a wider suite of financial metrics and other evidence, which includes, for example, company performance and scale of the investment programme.

We do not propose to adjust or tighten our financeability requirements such as target credit rating or target ratios, following the putting the sector in balance position statement. We understand that rating agencies take a view on regulatory risk as part of reaching their view on company credit ratings and may adjust this view from time to time. Consistent with our wider approach to financeability, we leave companies to manage implications of the rating agencies approaches in terms of the financeability of their actual structures, including their view of regulatory risk.

As we set out in our PR19 methodology, in our assessment of financeability of the notional company, we will consider the average of each metric over the price control and we will look at trends over the price control period, rather than focusing on individual metrics in a single year. We will exercise our judgement in looking at the suite of financial metrics as part of our assessment of financeability and will look at the entire suite of metrics over the entire control period, rather than focusing on a single metric or a single reporting period.

We would not consider that a poor cashflow metric in a single year necessarily raises financeability issues, however, we may have concerns if there were poor metrics in multiple years or if there was a significant decline in cash flow metrics across the period.

4.4 Approach to addressing financeability constraints

The methodology sets out a range of options and market mechanisms available to companies to address financeability constraints where they arise from the notional financial structure.

A number of companies have identified financeability constraints in relation to the notional structure resulting from the lower cost of capital and in particular the lower in-period returns, although the transition to CPIH has partly offset this. Some companies have also referenced the changes to credit rating agency requirements as a driver of financeability constraints.

We set out in this section information relevant to the assessment of financeability, including the assumptions made by companies in their business plans to help companies in assessing their resubmissions.

4.4.1 Use of PAYG and RCV run-off

Section 10 of [Appendix 12](#) of our methodology sets out issues for companies to consider in preparing business plans associated with the mix of real and nominal returns on cash flow metrics.

We noted that as the real cost of capital has fallen in successive price reviews, companies receive a smaller portion of their return through in-period revenues and a larger proportion from indexation of the RCV, meaning lower cash flows and potentially weaker financeability metrics. As financeability constraints are driven by the cash flow effect of a real return on an inflating regulatory capital value it may be reasonable for companies to make some use of PAYG or RCV run-off to address issues around notional financeability.

Four companies have used PAYG or RCV run-off to address a notional financeability constraint. A number of companies note that this may not necessarily be effective due to certain of the credit rating agencies reversing the effects of advancing revenue in calculating the financial ratios. However, as we do not target a specific credit rating agency or specific financial ratios for the notional company, we maintain that the use of PAYG or RCV run-off may be an appropriate mechanism where it does not have a material impact on financial resilience over the longer term and there is sufficient evidence of customer support. We consider the use of PAYG or RCV run-off to address a financeability constraint to be preferable to increasing the cost of equity above the level expected by market participants for the period of the

price control. The PR19 methodology also discusses other options that companies could adopt, which include reduced dividends or equity injections.

The methodology does not allow the use of PAYG or RCV run-off to address a financeability constraint for the actual capital structure. Therefore, in our draft and final determinations, where we consider a company has accelerated revenue through PAYG or RCV run-off to address a financeability constraint for the actual financial structure, we will intervene to reduce rates to protect customers from paying higher bills for a company's decisions on its capital structure. Companies that use PAYG or RCV run-off to address the financeability constraint driven by the actual financial structure should consider carefully the steps they should take to secure the financeability of the actual structure.

4.4.2 Dividends

A number of companies apply a nominal dividend yield for the notional company of around 5% as shown in table 4 with a number of companies referencing the [putting the sector in balance](#) position statement.

Table 4. Notional dividend yield and growth

Water company	Dividend yield	Dividend growth	Retail dividend	Total
ANH	3.15%	1.35%	0%	4.50%
HDD	3.52%	1.51%	0%	5.03%
NES	5.00%	0%	0%	5.00%
SRN	3.57%	2.00%	0%	5.57%
SVE	3.52%	1.51%	0%	5.03%
SWB	4.00%	1.03%	0%	5.03%
TMS	5.00%	0.05%	0%	5.05%
WSH	2.60%	2.48%	0%	5.08%
WSX	Not provided			
UUW	5.04%	0%	0%	5.04%
YKY	4.47% ²			
AFW	0.00% ²			
BRL	3.20%	1.30%	0%	4.50%
PRT	5% of opening equity each year			
SES	3.42% ²			
SEW	2.00%	Note 1	0%	Note 1

SSC	3.00%	2.03%	0%	5.03%
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¹South East Water has a range of dividend growth values across the five years from -42% to 103%.

²Calculated as a simple average of dividends divided by average regulatory equity for each year for companies with a dividend override in the submitted notional financial model that have hard coded the dividend assumptions for the notional structure. Average regulatory equity is calculated as 40% of average RCV. Affinity Water quote a dividend yield of 3.57% in its submitted notional financial model but the model overrides this to zero for each year.

Source: Company business plans and financial models

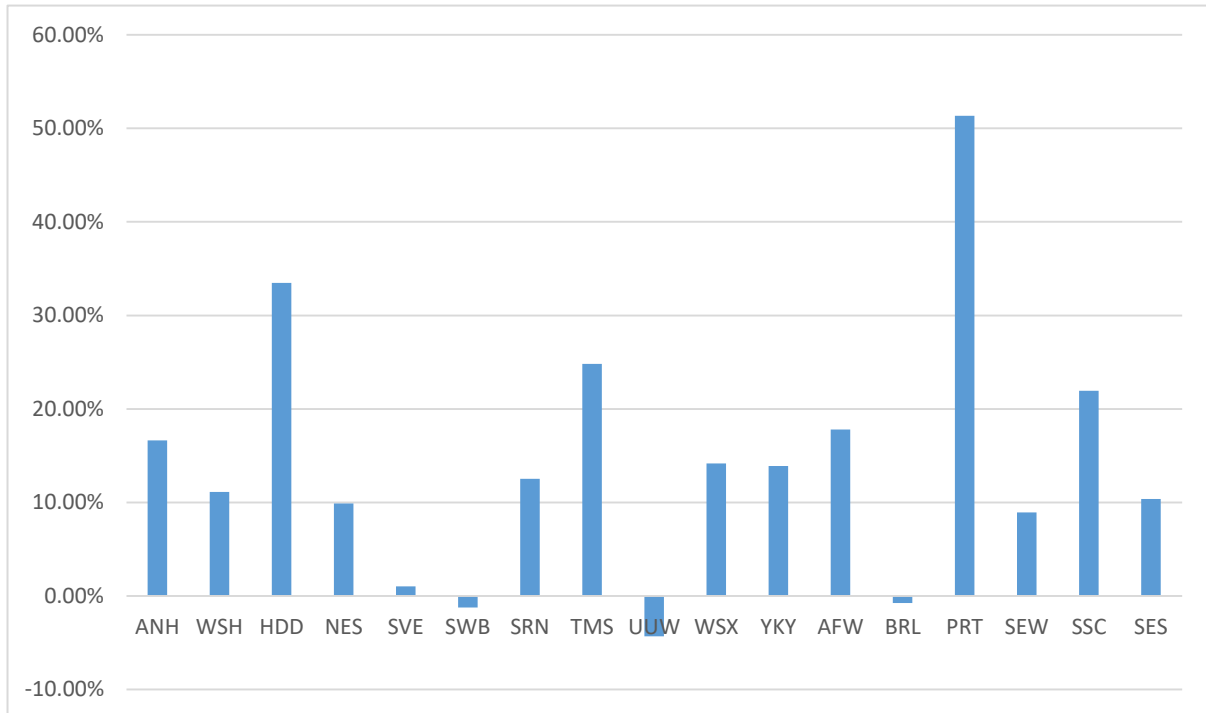
Factors that companies should take into account in determining dividend policy for the notional structure include the need to finance future investment (RCV growth) and financial resilience. It appears that the following factors may have influenced the dividend yield and growth assumptions in business plans:

- The financial model user guide states that “the combined dividend yield and dividend growth should be consistent with the appointee cost of equity within Ofwat's view of the cost of capital. Ofwat's early view of the cost of equity is 7.13%.” It appears that most companies have interpreted this as the CPIH deflated real cost of equity for the appointee with no dividends paid from the retail business, although it may also be interpreted as the blended CPIH:RPI deflated real cost of equity.
- In some cases, companies reference a 5% dividend yield as consistent with the value stated in the ‘Putting the sector in balance’ position statement. However, the value stated in the position statement was the maximum that might be reasonable for the base dividend yield for the actual financial structure; it is not indicative of the dividend yield that should be assumed for the notional financial structure.

It is reasonable to assume companies should retain a proportion of the economic return given that a proportion of the return is generated from inflationary growth of the RCV and companies must finance investment in the RCV. In our financeability assessment, we will limit the dividend yield plus growth assumption to be consistent with the blended cost of equity on a real basis (4.52% on a 50:50 blended CPIH:RPI basis). Where companies include dividend yield and growth assumptions that exceed the blended cost of equity in their resubmissions, we expect to see that this is accompanied by compelling evidence to explain why this is in the customers’ interest, if we are to accept such an approach for draft and final determinations.

We consider the notional dividend yield and growth rate may be different for each company reflecting the specific investment and funding requirements in 2020-25. It may be expected that a company with significant RCV growth will retain a higher proportion of earnings to finance the associated investment and maintain gearing around the Ofwat notional gearing level. Figure 4 compares the cumulative growth of the RCV as set out in company business plans

Figure 4. Projected cumulative growth in real RCV in 2020-25 from business plans



Source: Business plan tables App 8

4.4.3 Alternative approaches to address financeability constraints

In their business plans, some companies adopt an alternative approach to demonstrate how their plans are financeable on a notional basis. This includes taking account of outperformance reconciliation adjustments and sensitivity analysis. We comment on these issues below. We also comment on the potential for assumptions about equity injections, which was set out as an alternative option to address a notional financeability constraint in the methodology, but not adopted by any company in their business plan for addressing a financeability constraint for the notional structure.

Taking account of reconciliation adjustments

Two companies take account of the beneficial effect of outperformance reconciliation adjustments for performance against the PR14 incentive mechanisms in their assessment of notional financeability. The PR19 methodology sets out that we will carry out our assessment of notional financeability before such adjustments. The reason for this is to ensure that the value of outperformance payments for company performance against regulatory incentive mechanisms will not be eroded.

However, where a company sets out compelling evidence that taking account of such incentive rewards is in the best interests of customers, for example in assisting affordability or maintaining a smooth bill profile across subsequent price review periods, we will accept the beneficial impact to financeability for draft and final determinations. We will not however, assess financeability after the application of incentive mechanisms where the adjustments reflect penalty adjustments to maintain appropriate incentives on companies.

Sensitivities

The financial ratios calculated for the notional company structure for one company (Thames Water) do not meet the level required to achieve the target credit rating but the company provides mitigating actions that could be applied to the notional company, which include adjustments to the mix of index linked debt and dividend yield. These adjustments improve the financial ratios to a level consistent with the target credit rating. Where a company provides evidence that such assumptions are appropriate, and supported with compelling rationale that the company's approach is in the interests of customers, we will take this into account in the financeability assessment for our draft and final determinations.

Equity injections for the notional company

A number of companies have set out plans or taken action to reduce actual gearing ahead of the start of the price review period, either through the restriction of dividends and/or the direct injection of equity. Where companies have set changes to the capital structure, we expect to see a clear plan for achieving the reduction in gearing including the timeframe and a clear commitment from investors. The methodology also allows for assumptions about equity injections for the notional financial structure where a company has a particularly large investment programme relative to its RCV to address a financeability constraint.

5 PAYG and RCV run-off

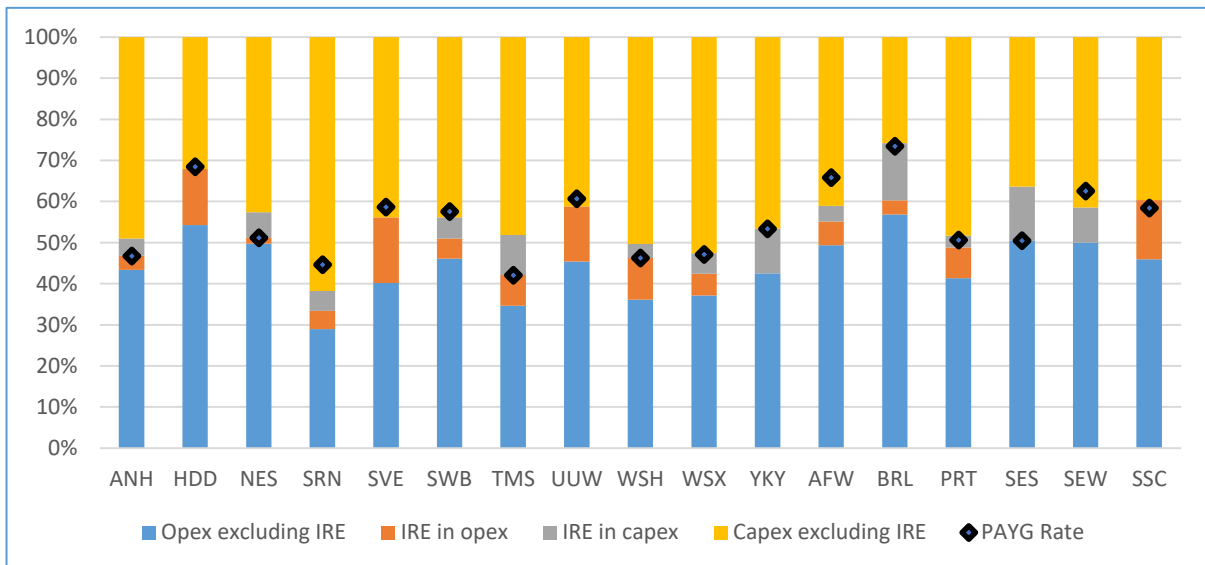
Companies can balance the recovery of costs between different generations of customers using financial levers, such as pay-as-you-go (PAYG) and regulatory capital value (RCV) run-off rates.

In this section, we set out comparative information on the approaches companies have undertaken in preparing their business plans.

5.1 Setting pay-as-you-go (PAYG) rates

We have asked companies to set out their approach to setting the starting point for PAYG rates (before applying any adjustment, for example to smooth bills or address a financeability constraint on the notional capital structure). Most companies set out their approach to setting PAYG rates with reference to the costs forecast in the business plan. Figure 5 below sets out the average PAYG rates as a proportion of totex calculated across the wholesale price controls. Absolute average PAYG rates will vary between companies in accordance with the investment programme set out by each company in its business plan.

Figure 5. Average pay-as-you-go rates for the period 2020-25 across the wholesale controls as a proportion of totex



Source: Business plan tables WS1, Wr4, Wn4, WWS1, WWn6, Bio5, Dmmy1, Dmmy 8. Calculated as weighted average PAYG rate as a proportion of total costs in 2017-18 prices across all wholesale controls

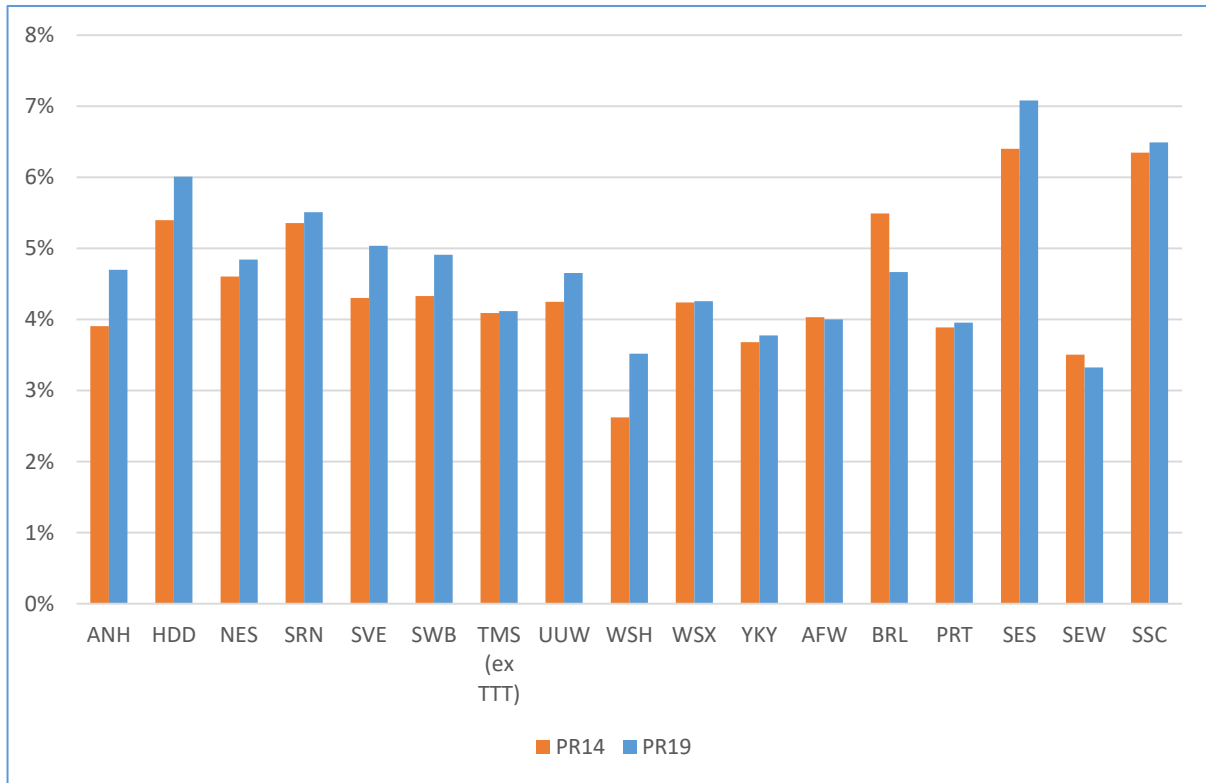
All companies cover their operating costs including infrastructure renewal expenditure where this is forecast as operating costs. Seven of the 13 companies that forecast an element of infrastructure renewal expenditure in capex propose recovering these costs in period through PAYG rates. The remaining six companies propose adding these costs to RCV and recovering over a longer period.

We set out in the methodology that companies should explain the assumptions that underpin their PAYG and RCV run-off rates and explain clearly any proposed departure from natural rates. We have not set out a definition of natural rates but that each company's choice of PAYG and RCV run-off rates should reflect their own expenditure and investment plans within each control. However, where companies propose PAYG rates in excess of the proportion of operating expenditure and infrastructure renewal expenditure as a proportion of totex, we apply a higher evidential bar in carrying out our assessment of the PAYG rates proposed. Most companies have provided sufficient evidence in support of their PAYG rates, although a number of companies have not. We require these companies to provide further evidence to demonstrate the proposed rates are consistent with the approach and the approach is appropriate for the company.

5.2 Setting RCV run-off rates

We asked companies to set out their approach to setting the starting point for RCV run-off rates (before applying any adjustment, for example to smooth bills or address a financeability constraint on the notional capital structure). Most companies set out their approach to setting RCV run-off rates with reference to the current cost depreciation or the average asset lives of the assets underpinning the regulatory capital value of the company. Figure 6 below sets out the average RCV run-off rates as a proportion of regulatory capital value.

Figure 6. Average RCV run-off rates as a proportion of regulatory capital value

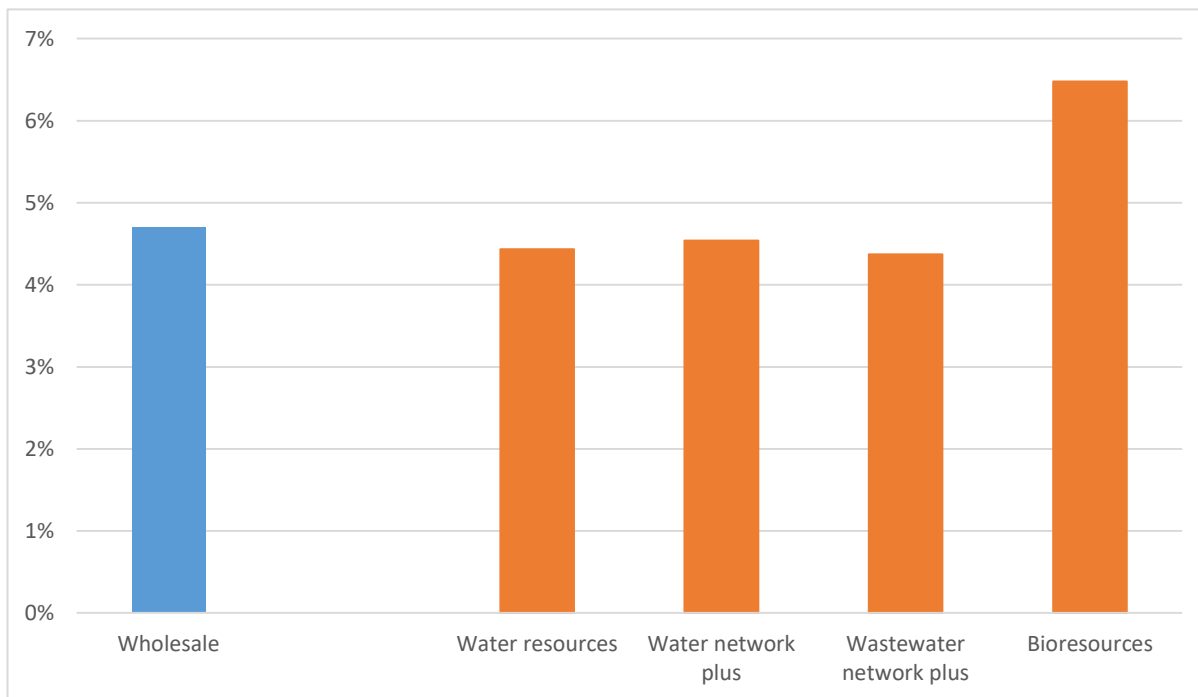


Source: Business plan tables WS1, Wr4, Wn4, WWS1, WWn6, Bio5, Dmmy1, Dmmy 8. Calculated as total run-off as a proportion of total regulatory capital values in 2017-18 prices across all wholesale controls as per business plan table App8

Generally, RCV run-off rates are slightly higher than at PR14, primarily due to two reasons. Firstly, the use of CPIH to inflate part of the RCV means that a higher run-off rate is required to achieve comparable current cost depreciation values on a nominal basis and, secondly, recent capital investment and forecast post-2020 investment has tended to be in shorter life assets resulting in a shorter replacement cycle and upward pressure to run-off rates.

Most companies propose different RCV run-off rates for individual wholesale controls reflecting the different average asset lives of the assets associated with each control. We set out average RCV run-off rates for each wholesale control in figure 7 for all companies for the period 2020-25.

Figure 7. Average RCV run-off rates for each wholesale control



Source: Simple average of all companies' proposed RCV run-off rates for the combined water and wastewater controls and for each individual wholesale control as per business plan tables Wr4, Wn4, WWn6, Bio5 and Dmmy 8

Average run-off rates for water resources and the network plus controls are relatively consistent. However, although a much smaller proportion of the overall RCV, eight of the WaSCs propose run-off rates for the bioresources control significantly higher than other wholesale controls with a number of the companies setting out that, unlike the other controls, bioresources does not have a significant proportion of infrastructure assets and therefore has a significantly shorter average asset life.

Many companies also propose different RCV run-off rates for post 2020 investment, again reflecting the primarily shorter asset lives of current and forecast capital investment.

As RCV run-off rates are mostly aligned to current cost depreciation or asset lives, there is no direct comparison to other areas of the business plan (such as for PAYG rates and the detailed costs breakdown provided in business plan tables). As such, we expect companies to provide sufficient evidence to demonstrate that the RCV run-off rates are correctly calculated. While, all companies set out the RCV run-off rates within the business plan, in many cases there is insufficient evidence that the rates had been calculated consistently with the approach set out in the plan.

5.3 Adjustments to PAYG and RCV run-off rates

5.3.1 Transition to CPIH

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 new RCV, will be indexed to CPIH.

The transition to CPIH indexation will result in cash flows being brought forward all other things being equal, which will increase customer bills in 2020-25 and reduce them in future periods compared to RPI indexation. The extent to which a company's total RCV is indexed to CPIH through the price control period, and the impact on customers' bills, will depend on the level of new RCV (capitalised totex) added during the period and the relative run-off of each element of RCV.

Most companies have adopted bill profiles that are underpinned by the transition to CPIH as set out in the methodology, but three companies have made adjustments specifically related to the transition to CPIH. We set out in the methodology that we do not consider that the switch to CPIH necessarily should imply a change in profile of cash flows over price review periods and two companies adjust RCV run-off rates to remove the impact of the transition to CPIH from customer bills. In contrast, one company adjusts RCV run-off rates which it sets out has the effect of a full transition to CPIH, supported with evidence that the effect on RCV run-off rates is supported by customer preferences.

The extent to which customer bills reflect the transition to CPIH is net present value neutral to customers over time, but affects the balance of current and future bills and our methodology allows companies to adopt a faster or slower transition where supported with compelling evidence. Provided there is compelling evidence to underpin the assumptions supporting a company's bill profile in the short and the long term, that the bill profile is supported by customer preferences and steps have been taken to manage incidence effects, such that year on year bill movements are smooth, we do not propose to intervene to adjust the speed of a company's proposed transition in our draft and final determinations.

5.3.2 Other adjustments to PAYG and RCV run-off rates

As set out above, a number of companies propose adjustments to PAYG or RCV run-off rates to address a financeability constraint for the notional capital structure or

to alter the rate of transition to CPIH. Companies have also proposed adjustments to PAYG and RCV run-off rates for the following reasons:

- A number of companies have amended either PAYG or RCV run-off rates across years for one or more of the wholesale controls to smooth bills within the price review period. Two companies adjust PAYG rates to balance the movement in bills between water and waste water customers. In both cases, the companies provide insufficient evidence to demonstrate that the level of the adjustment is appropriate and there is no transfer of revenue across price review periods.
- Two companies have also reduced RCV run-off rates to assist affordability for customers. In both cases, this is to restrict the impact on customer bills of underlying increases to run-off rates from PR14. Both companies provide a compelling rationale for the need for the adjustment but one company does not provide sufficient evidence that the level of the adjustment is appropriate.

Where companies have made adjustments to the starting rates for PAYG or RCV run-off, alongside convincing evidence to demonstrate the appropriateness and level of the adjustment, we look for evidence that the resulting bill profile is aligned to customers' preferences for bills now and in the longer term.

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