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Trust in water

Water 2020: our regulatory approach for water and wastewater services in England and Wales

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About this document

This decision document sets out the future regulatory framework for the water and wastewater industry in England and Wales to enable the water sector to address the challenges it faces and to help build trust and confidence among customers and wider society. It outlines the changes to company licences that flow from the new regulatory framework. It also sets out specific areas for further consultation about the role of markets and the regulatory framework for the 2019 price review.

We intend this document to help promote a shared understanding of our approach to regulatory design and the implications, costs and benefits associated with it.

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Executive summary

This document sets out our decisions on the design of our water and wastewater services regulatory framework in England and Wales.

Our vision for water and wastewater services in England and Wales is one where customers and wider society have **trust and confidence that their water and wastewater services are of a high quality, provided in an environmentally sustainable way, resilient and affordable**. The resilience of these services is a critical part of this. Customers want confidence that clean, safe drinking water will be reliably available and that they can rely on their wastewater being taken away. Society needs confidence that these services will be provided today and in the long term, without compromising the natural environment, and more widely that decisions taken today will not impoverish future generations. Delivering this vision relies on everyone in the sector working together – and working with those outside the sector, such as community and farming groups – listening to customers and tackling long-term challenges.

The water sector is facing critical challenges. These challenges suggest that **if we do not change, then there is an increasing risk that the future could be characterised by disengaged customers and low levels of legitimacy; where precious water resources are not used as efficiently as they might be** – putting greater pressure on the environment; and where opportunities to tackle affordability and deliver more for less are not seized, resulting in higher bills for customers. We need to address these challenges together to ensure that customers' needs, priorities and concerns are heard and responded to, both now and in the future.

Our new regulatory approach will help to secure a resilient future for water, for the benefit of customers, the environment and wider society. We are making changes to the way we regulate in future to play our part in building trust in water. Here, we summarise the main elements of our future regulatory approach for wholesale markets and the price review in 2019 (PR19) and beyond, building on the successes of our previous price review (PR14).

In July 2015, we published a discussion paper on the challenges facing the sector and the role economic regulation and markets could play to enable the sector to meet these challenges. **We also opened the marketplace of ideas, with Water UK, to enable stakeholders to contribute to development of our thinking.**

In December 2015, we published our consultation on the regulatory framework for wholesale markets and the 2019 price review, building on and drawing

from contributions to the marketplace of ideas. This set out proposals for the design of the future regulatory framework for water and wastewater services in England and Wales, addressing both the role of markets and the role of regulation, which we see as complementary. Since then, we have had productive and wide-ranging discussions about our proposed regulatory framework with a variety of stakeholders. We have listened carefully to, and considered, the views and evidence put to us – and thank all participants for their engagement. This process of engagement has helped to shape our thinking and our subsequent decisions. The decisions (and further areas for consultation) we set out here build on the debate and the contributions made to it by all those involved. In that context, this document constitutes an important milestone in developing our approach to PR19, and one that we are pleased to have reached at this early stage in the current control period.

At the heart of our regulatory framework for water and wastewater services is the desire to **strengthen the approach to customer engagement and outcomes to ensure a continued focus on current and future customers.** PR14 saw the biggest ever customer conversation in water and wastewater services. Our new regulatory approach places even greater expectations on companies to understand the needs of all their customers, including those in circumstances which make them vulnerable. This requires more diverse approaches to understanding customers' priorities, needs and behaviours. Specifically, companies should look to build a robust, balanced and proportionate evidence base, fully exploring how they can make use of operational data and information gained from innovative approaches (including experiments) in addition to survey data, focus groups and other research. The understanding of customers' priorities, needs and behaviours that companies gain should inform the development of business plans, including performance commitments, that drive the delivery of resilient services now and in the longer term. Our regulatory framework also strengthens the role of local independent Customer Challenge Groups (CCGs) to challenge companies even further to improve the quality of their customer engagement. By raising the bar on customer understanding and engagement, we want customers to be more involved in helping shape water and wastewater services, both now and for the future. In this regard, we would welcome examples of companies proposing solutions co-created with customers or communities.

Our regulatory approach emphasises the importance of trust and confidence in water and wastewater services both now and in the future. **Credible and legitimate indexation of customer bills is central to trust and confidence in the sector.** Previously, our price controls have been linked to the retail price index (RPI). This means that customer bills have been linked to RPI. RPI is no longer an official statistic – its robustness has been called into question and its use by government and regulators is diminishing. RPI is more volatile than other commonly used

measures of inflation, risking more uncertainty for customer bills. We have had extensive and constructive engagement with customer groups, companies and investors about whether and how to change inflation measures within our price controls. Other regulators have also sought views on this issue. **We will be changing our indexation for customer bills and companies' assets to a more legitimate measure of inflation**, the consumer price index (CPI, or CPIH). We will decide between CPI or CPIH in our methodology statement for PR19, which we will consult on in July 2017.

The basis for indexing revenues and the regulatory capital value (RCV) will be different from the beginning of the next control period. **We will index revenues to CPI/H from the start of PR19 and transition the indexation of the RCV as it stands at 1 April 2020. We will index 50% of the RCV at 1 April 2020 to RPI. The rest of the RCV, including all new RCV added after 1 April 2020, will be indexed to CPI/H**, and so the proportion of RCV that is indexed by CPI/H will increase through 2020-25. The transition of the RCV will enable company financing to adjust to the new measure of inflation and help companies manage the impact on bills. This means that, from 1 April 2020, inflation on customer bills will be linked to CPI/H – helping to maintain customer trust and confidence, and potentially reducing bill volatility. **We provide a statement of principles we will apply when considering the transition of the indexation of the RCV beyond 2025.** We do not think it is desirable to set the transition path for the proportion of RCV indexed to CPI/H beyond 2025 at this time. The decision on the speed of transition beyond 2025 will need to be made by reference to relevant factors at the time, including analysis based on up-to-date information and following consultation with stakeholders.

Our new regulatory approach will promote markets to inform, enable and encourage greater efficiency in England and, where it aligns with Welsh Government policy, in Wales. To meet future challenges, we need to ensure that water and wastewater services are resilient, efficient and taking a long-term approach. New markets – places where buyers meet sellers – can benefit customers, the environment and wider society through choice, resilience and information. **We are taking steps to inform, enable and encourage the development of two new markets – sludge (which is becoming recognised as a bioresource and we use this term in place of sludge) and water resources – where there is potential to unlock substantial benefits for customers, companies, investors and the environment.** In relation to bioresources, evidence shows there is scope for increased optimisation of activities across the companies – and, looking further ahead, greater participation from firms operating in wider waste markets. In relation to water resources, trading is below its optimal level, and taking steps to reduce identified barriers to this could result in significant benefits for

customers. Again, looking further ahead, there is also scope for participation from third parties, both in terms of selling water into the public water supply, and in negotiating directly with water retailers as the retail business market develops in line with the Water Act 2014.

To deliver the potential benefits of markets in bioresources and water resources, we are putting in place a set of proportionate measures that will facilitate the development and evolution of these markets over time. The main elements of our regulatory approach include the following.

- **We will introduce an information platform for bioresources markets.** We want information to be made available that will enable others to offer services if they can provide them at a lower cost and/or of a higher quality than the existing companies. We will take steps to make available market information that is credible, is simple to access and enables comparisons that support market choice. This information will include, in the short term, details of location, contract duration and successful bids and, in the longer term, cost/pricing information.
- **We will introduce an information platform for water resources markets.** We want information to be made available that will stimulate conversations between potential buyers who have supply-demand issues to address and those with water resources or demand management services to offer. We will require companies to make available data on supply-demand deficits and water resource costs in a consistent format. This should be available on company websites with Ofwat providing a webpage that signposts where that information is held. We will ask each incumbent company to publish a bid assessment framework setting out its policies and processes for assessing bids from third party resource and demand management service providers.
- **We will introduce separate binding price controls for sludge/bioresource treatment, transportation and recycling/disposal and water resources for PR19.** This will inform, enable and encourage an effective market by revealing improved information that will help us to set better targeted incentives; supporting company decision-making; mitigating cross-subsidy concerns; and helping to foster a more commercial culture and focus within companies in relation to these activities. For water resources, this control will apply to companies in England and in Wales, last five years, and take the form of a total revenue control with a mechanistic within-period adjustment mechanism that depends on the scale of bilateral market entry. For bioresources, this control will apply to companies in England and in Wales, last five years, and take the form of an average revenue control.
- **We will allocate parts of the RCV to bioresources and water resources.** This is necessary to ensure a level playing field (within these markets and wider markets), to avoid the over-recovery of costs and to maintain consistency

between charges and cost recovery. We will allocate part of the pre-2020 legacy RCV to water resources on an unfocused basis, with each company proposing its allocation subject to review by Ofwat to ensure outcomes are in the customer interest. We will issue further guidance on what we are expecting from water companies in late 2016 and expect to ask for allocations from companies in 2017 to be finalised as part of PR19. For bioresources, we will allocate part of the pre-2020 legacy on a focused basis. We will consult on the methodology to be used for allocating the bioresources RCV, including the possibility for a revaluation exercise.

- **For water resources, we will introduce a new access pricing framework in relation to the networks of English water companies.** We will develop the access pricing framework to facilitate entry by companies who can supply raw/treated water at least as efficiently as the costs of incremental capacity provided by the incumbent water company. We will develop rules for access prices and companies will be required to publish and apply access prices that are consistent with these rules. The access prices that each incumbent water company will need to publish will involve a two-part structure – a set of cost-based charges for a range of network and treatment services that entrants may need, and a compensation payment that reflects the extent (if any) to which the incumbent's incremental costs of new water resource capacity exceed its average water resource costs.

We will also inform, enable and encourage greater use of markets in the financing and provision of new assets by third parties. Our new regulatory approach incentivises companies to use direct procurement for customers for high-value capital projects. Direct procurement for customers takes place when a water company procures services, particularly capital projects, on behalf of customers, including the project's financing. It promotes the use of markets for projects which would otherwise be delivered by the water company. Direct procurement for customers can generate savings from project costs and cheaper financing – under our approach, these savings are shared with customers. It can also encourage companies to take a long-term view of projects, bringing long-term savings. We will evaluate companies' proposals for direct procurement for customers as part of our risk-based review of company business plans at PR19. We will expect companies to use direct procurement for customers for suitable projects valued at more than £100 million.

Targeted price control regulation will continue to apply to the wholesale parts of the value chain. Indeed, for both bioresources and water resources where we cannot be certain about how far or how quickly markets could develop, **price regulation will remain an essential part of our approach, at least over the near term.** We will retain total revenue controls as the form of control for the water and wastewater

network plus price controls (that is, for those parts of the value chain that remain once we exclude the activities that fall within the separate price controls for bioresources and water resources). These will be five-year controls and we will set them at the same time for all wholesale areas.

We recognise the important role that the RCV has played and continues to play, especially as a mechanism for enabling costs to be smoothed over time and financed more efficiently – benefitting customers – by delivering regulatory predictability, acting as the primary means through which investors recover costs in future periods. **Our price control framework for PR19 will provide the same nature and degree of regulatory protection as at present for the RCV allocated to water resources and bioresources at 31 March 2020.** Consequently, we will not create an additional, specific regulatory mechanism (over and above our price control framework for PR19) for guaranteeing the RCV allocated to the bioresources or water resources price controls during PR19, as our proposed approach to setting the price control creates no additional risks of asset stranding. An explicit regulatory mechanism could introduce distortion to bioresources markets and could result in unintended consequences. New investment by incumbent companies from 1 April 2020 onwards would not have the same degree of regulatory protection – it would be incurred at risk. By limiting the impact of a greater use of markets to new investment, we expect to **mitigate any potentially adverse impacts on financing costs in the sector.**

The decisions summarised here set out our future regulatory approach for our price review in 2019 and beyond, building on the successes of PR14. **Together, these changes will deliver an approach that helps secure a resilient future for water, for the benefit of customers, the environment and wider society.** Some of our decisions, such as our decision to move from RPI to CPI or CPIH and separate controls for bioresources and water resources, require changes to water company licences. **We want to make all the changes to companies' licences as a package, to make sure they are implemented consistently for everyone.** We will engage with companies well ahead of any formal process to make licence changes; in developing detailed proposals, **we see the benefits of working particularly closely with companies that, early on, accept and support the package of changes.** Companies who decide to accept the package of changes by 6 July will have the opportunity to work jointly with us to develop the proposed licence changes.

1. Introduction

This document sets out our decisions and further areas for consultation on the design of our water and wastewater services regulatory framework.

The design of future regulation and markets is a key part of our Water 2020 programme. This is intended to ensure that, as the industry's independent economic regulator in England and Wales, we challenge ourselves to identify how our approach to regulating water and wastewater services can deliver better outcomes for customers. This is consistent with our vision of helping the sector to build trust and confidence among customers and wider society and with our statutory duties which require us to exercise our relevant functions in the manner we consider best calculated to¹:

- further the consumer objective to protect the interests of consumers, wherever appropriate, by promoting effective competition;
- secure that the companies and licensed water suppliers properly carry out their activities and functions;
- secure that the companies can (in particular through securing reasonable returns on their capital) finance the proper carrying out of their functions; and
- further the resilience objective to secure the long-term resilience of companies' systems and services to consumers.

Our new regulatory approach will help to secure a resilient future for water and wastewater services, for the benefit of customers, the environment and wider society. Economic regulation can drive how companies that provide water and wastewater services operate their business and how they seek to meet their customers' needs. Our approach to economic regulation can help the sector to create value and to allocate that value between customers, the environment, society and investors. Economic regulation can help to create value by enabling and incentivising cost reduction, innovation and improved allocation of scarce resources so that they are used for the things customers and society value most. Economic regulation also allocates this value. It may be allocated to customers, for example through lower bills and better service. It may be allocated to the environment through improved environmental standards, or to society more widely through amenity. And

¹ We exercise our relevant functions in accordance with our duties in the Water Industry Act 1991 (as amended) (WIA91) and the statements of strategic priorities and objectives we receive from the UK and Welsh governments as well as other guidance on specific issues such as charging.

we ensure that investors receive value too, especially where this rewards them for delivering improvements for customers and society (see Figure 1).

Figure 1: How our approach to economic regulation creates and allocates value



Value creation is facilitated in our framework both by the approach to regulation of monopolies such as the outcomes and total expenditure (totex) approach, introduced in PR14, and by enabling greater role for markets. Outcomes and the totex approach provide flexibility and freedom for service providers to develop the right solution at the right time and greater flexibility to vary approach as circumstances change during a price review period. This enables the right balance between capital and operating cost solutions to be chosen and the focus to be on the outcomes that matter for customers rather than the process for service delivery.

Greater focus on customer engagement and longer-term outcomes better enables service providers to innovate and invest for the longer term in the best interest of their customers. It also recognises that new ways of working and new approaches are required to address the challenges facing the sector and enable innovation and better ways of using scarce resources, which include customers' money, investment

capital and natural capital. The introduction of wholesale markets will reveal information and the value of opportunities, possibly behind company boundaries, and will thereby better enable service providers to develop innovative and efficient solutions to the challenges facing the sector.

Our decisions on the design of our future regulatory framework and our approach to the next price review take place against a backdrop of other changes in the sector. The Water Act 2014 will extend choice from 1 April 2017 for business, charity and public sector retail customers served by companies whose areas are wholly or mainly in England. The Welsh Government will monitor the costs and benefits of business retail choice in England to inform its future policy about services for business customers served by water companies located wholly or mainly in Wales. The Water Act 2014 will also introduce further changes to wholesale markets after 2019. Additional changes may take place along the border between England and Wales. If the Silk Commission recommendations on devolution are taken forward, the geographic boundary for legislative competence of the English and Welsh governments will move from its current water company border definition to follow the national borders. And within England and Wales, the tools with which the two governments aim to achieve their environmental objectives are evolving. In England, Defra is developing a 25-year national environment plan and, in Wales, the Environment (Wales) Act 2016 introduced 'area statements' to enable better management of natural resources at the local level. The Well-being of Future Generations (Wales) Act 2015 also introduced a framework for considering the impact of government policy on future generations, which sets context for our policy in Wales.

It is against this backdrop that we pursue our vision for water and wastewater services in England and Wales: for customers and wider society to have trust and confidence that their water and wastewater services are of a high quality, provided in an environmentally sustainable way, resilient and affordable.

The sector is making considerable progress towards achieving this vision, but it faces many challenges. These are more complex and dynamic than in the past.

Much has been achieved already, especially given the progress we made at the last price review in 2014 (PR14) and the work progressing on retail market opening for business customers of companies whose area is wholly or mainly in England². But in

² As part of the UK Government's competition plan, we have been asked to review the benefits and costs of opening the retail residential market in England to competition ([Review of retail household](#)

response to the increasingly complex challenges facing the sector, we need to continue evolving the way we regulate, consistent with our statutory duties and our enduring price control principles, which we have retained from PR14³.

In July 2015, we published our Water 2020 discussion paper, which outlined the challenges facing the sector and how we, as a regulator, could help the sector address these challenges and outlined six key questions that needed to be addressed by economic regulation of water and wastewater services.

- How do we regulate to encourage service providers to focus on their customers over the longer term, rather than focusing their effort around periodic price reviews?
- How do we build on the customer-focused approach to the 2014 price review (PR14) and promote and maintain genuine customer engagement that drives companies' businesses?
- How do we regulate to encourage service providers to discover new ways of delivering outcomes to customers, which reduce cost and improve service?
- How do we encourage service providers to discover and reveal the efficient cost of providing services?
- How can we best align the interests of investors, management and customers?
- How can we maintain investor and customer confidence through the transition to any new arrangements?

We also opened the marketplace of ideas, in conjunction with Water UK. Since then, more than 35 papers have been published on a broad range of topics including the challenges facing the sector, outcomes, cost assessment, access pricing, markets for water resources and sludge and financing and the RCV. We appreciate these contributions as well as the contribution and involvement of stakeholders who contributed to a number of workshops held during 2015 and early 2016.

Building on the marketplace of ideas and the responses to the July 2015 discussion paper, in December 2015, we published our consultation document, 'Water 2020: Regulatory framework for wholesale markets and the 2019 price review', which set

[markets in the water and wastewater sector: Terms of reference](#)', Ofwat, March 2016). This review of retail residential competition is not covered in this document. Instead, we will report back to the UK Government in 2016 on the outcome of that review, but note that the decision on whether or not to open the market is for the UK Government. We will take account of any decision by the UK Government in developing our approach to setting controls for the residential market in PR19.

³ ['Future Price Limits – statement of principles'](#), Ofwat, May 2012.

out our proposals for the future regulatory framework for water and wastewater services, addressing the role of markets and regulation.

This received widespread support, both in relation to the nature of the challenge we had set out, and our proposed direction of travel, making better use of markets to help solve that challenge. It also stimulated a high level of interest and debate. Since then, we have had productive and wide-ranging discussions about our proposed regulatory framework with various stakeholders. We have listened carefully to, and considered, the views and evidence put to us and we thank all participants for their engagement. This engagement process has helped shape our thinking and our subsequent decisions. The below box summarises the main areas in which our thinking has evolved and progressed from that we set out in December, taking account of the subsequent discussions we have had and what we have heard. The decisions (and further areas for consultation) we set out here build on the debate and the contributions made by all those involved. In that context, this document constitutes an important milestone in an ongoing process for developing our approach to the next price review (PR19), and one that we are pleased to have reached at this early stage in the current control period.

How our thinking has evolved since our December consultation

Our thinking has evolved in a number of areas since we consulted on our proposals in December 2015. This is intended to ensure our regulatory approach is proportionate and targeted, provides clarity and predictability, and does not impose undue costs. Further details are set out below.

Focusing on current and future customers

- We have provided further clarification on the roles that companies, CCGs and we have in delivering good quality customer engagement that drives decision-making. In particular, we have provided more detail on: the principles for good quality customer engagement; the role of the environmental and drinking water quality regulators in the CCG process; and our expectations regarding CCG governance.
- We confirm our decision to publish early indications on the weighted average cost of capital (WACC) and outcome return on regulatory equity (RoRE) ranges before business plans are submitted.
- We will add additional customer expertise to our Water 2020 expert advisory panel.

- We set out alternative options for long-term performance commitments, stating our preferred approach that “long-term aspirations” should apply to all performance commitments at PR19.

Securing legitimacy of future price controls

- To be clear and predictable to stakeholders, we set out the principles that will apply for future decisions on the speed of transition from RPI to CPI (or CPIH) as the basis for indexing the RCV at PR24 and beyond.

Moving beyond waste

- We have revised our bioresources information disclosure approach based on a simplified set of information requirements (basic bioresources production information, a list of bioresources treatment sites and the treatment technology used, with no price/cost information). We are not proposing to establish an independent information platform, but propose that standardised information is published by companies to enable third parties to aggregate and present data, with a link from our website to those of companies.
- We will not publish information on bid activity in the bioresources market but, instead, propose to publish limited information (such as location, volumes, duration) on successful contracts. Companies should record information on bidder interest, any bids received and how they assessed bids; we may require this information to be provided to us, either as part of business plans or on a regular or ad hoc basis.
- We will set an average revenue control to regulate bioresources treatment, transport, recycling and disposal.

Tackling water scarcity

- We will develop a simplified market information platform that will allow potential suppliers to access water resource information on company websites with Ofwat providing a webpage that signposts where that information is held (rather than a central market database run by a third party). We are not proposing to require registration of third parties or formal bid verification.
- We will allocate the water resources RCV on an unfocused basis, but each company will be required to develop and justify proposals for how its historical RCV is allocated between water resources and network plus and these will be subject to a proportionate and risk-based review by us.
- We will link the level of access prices for water resources to the funding for new investment in developing new water resources.

- We will set a total revenue control with adjustments to regulate water resources. This will constitute two elements: (i) a fixed element; and (ii) a mechanistic in-period adjustment factor that depends on the scale of bilateral market entry.

Implementing our decisions

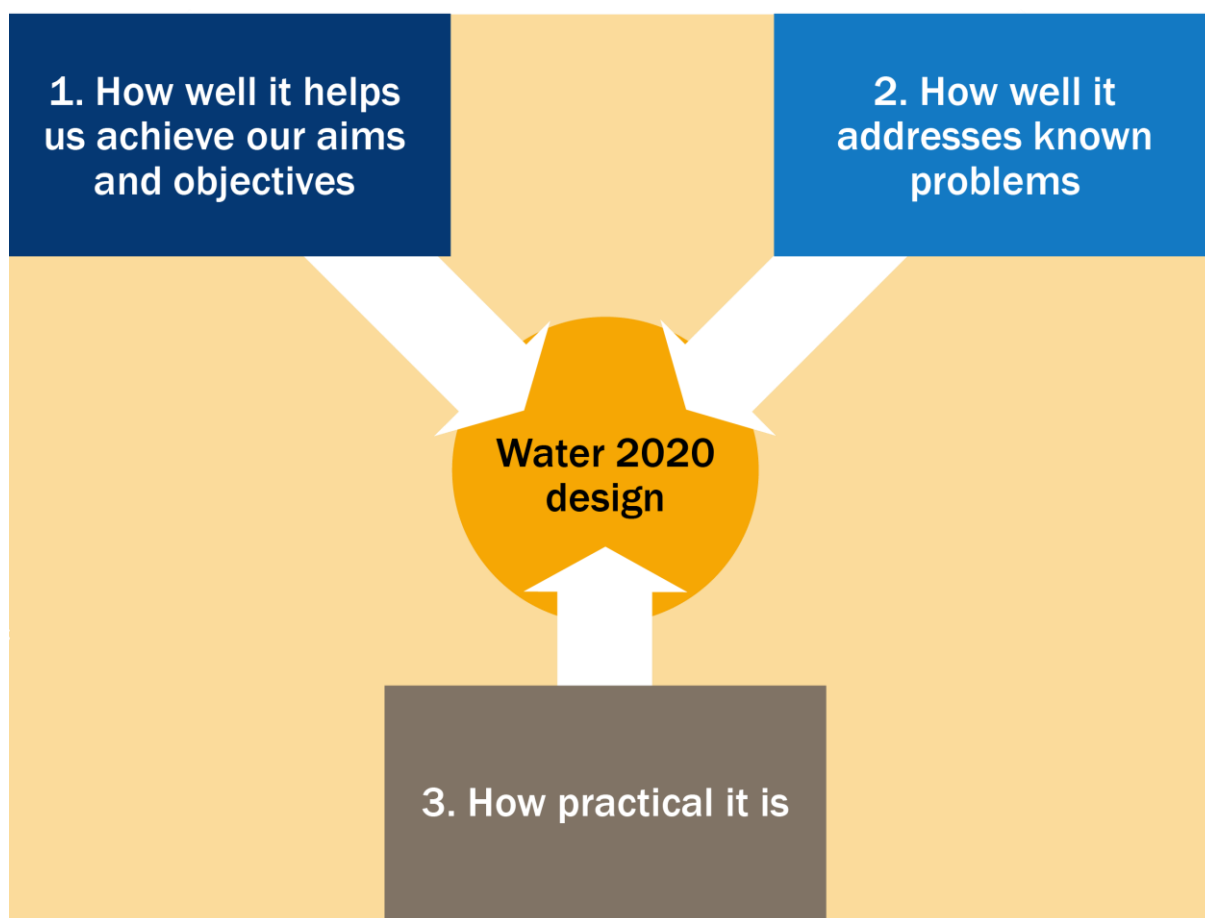
- We have delayed the submission date for company business plans until 3 September 2018 to align PR19 and Water Resources Management Plan (WRMP) processes.
- We still see the merit of in-period adjustments rather than end-of-period reconciliations but we will only seek a licence modification for outcome delivery incentive (ODI) rewards and penalties for PR19. However, we wish to keep open the option of an in-period adjustment for debt indexation.

Accordingly, we are publishing our decisions (and areas for further consultation) for promoting markets and how we will regulate to enable the development of them while continuing to protect all customers in England and Wales. Our decisions are about how we will implement our new regulatory model in practice and so move us closer to our vision of water and wastewater services in which customers and wider society have trust and confidence.

The decisions that form the basis of our new regulatory approach were reached following an assessment of alternative options against the following criteria:

- helping us attain our aims and objectives (in particular, the furtherance of our statutory duties, including resilience, in the context of our strategy, our enduring price control principles and the statements of strategic priorities and objectives we have received from the UK and Welsh governments);
- ensuring we are addressing identified problems; and
- ensuring our approach is practical and workable.

Figure 2: Framework for determining our approach to regulatory design



Throughout this document, a clear distinction is made between the decisions on the design of our future regulatory framework (for which we are not seeking further views) and the aspects on which we are consulting further and inviting views. Chapter 9 draws together all the consultation questions for which we are inviting views.

Further to this main decision document, there is a separate summary document that provides an overview of our vision for the sector, the decisions we are making and the benefits they will deliver. Separate appendices outline:

- further detailed evidence and analysis supporting our regulatory approach for the indexation of future price controls ([‘Appendix 1: Securing legitimacy of future price controls – further evidence and analysis’](#));
- further detailed evidence and analysis supporting our regulatory approach for bioresources treatment, transport, recycling and disposal ([‘Appendix 2: Moving beyond waste – further evidence and analysis’](#));

- further detailed evidence and analysis supporting our regulatory approach for water resources ([‘Appendix 3: Tackling water scarcity – further evidence and analysis’](#));
- further information on our regulatory approach for access pricing in relation to water resources ([‘Appendix 4: Enabling access to water networks’](#));
- further detailed evidence and analysis supporting our regulatory approach for direct procurement for customers ([‘Appendix 5: Enabling direct procurement for customers – further evidence and analysis’](#)); and
- our methodological approach to the assessment of the impacts (including those on the regulatory costs we face as a regulator) of our regulatory approach ([‘Appendix 6: Our approach to assessing impacts and Ofwat’s regulatory costs’](#)).

We are also publishing [‘Ofwat’s Customer Engagement Policy Statement and Expectations for PR19’](#), which supersedes [the statement published in 2011](#).

This decision document addresses most of the issues raised by our December consultation, with the remaining issues to be considered later. For example:

- in August 2016, we will consult on the approach to setting cost of debt for PR19, considering issues such as risk allocation, indexation and gain sharing;
- in November 2016, we will consult further on the balance of bespoke versus common outcome measures, the role of comparative information and other outcome issues;
- we have established a sludge working group and will shortly establish a water resources working group to help develop markets in these areas;
- we are progressing work on cost assessment and accounting separation – we have established the Cost Assessment Working Group, where we work with the industry to develop and refine data requirements and our approach to cost assessment and modelling; and
- the approach and structure of our risk-based review will be addressed by our methodology statement in December 2017.

We would welcome contributions to these areas of thinking via the marketplace of ideas.

2. Focusing on current and future customers

2.1 Our decisions

- We will retain and build on the **focus on customer engagement and outcomes** at the next price review (PR19).
- We provide **clarity on the roles** that companies, CCGs and we have in delivering good quality customer engagement that drives decision-making.
- **Companies will** continue to be responsible for engaging directly with their customers and each company will have in place a CCG for PR19.
- To reflect our expectation that companies should aim to deliver a further improvement in the quality of their customer engagement at PR19, we have published a set of **principles for good quality customer engagement**.
- Our expectation that the quality of customer engagement should improve at PR19 will be reflected in the standards we apply to business plan quality in the risk-based review at PR19.
- **CCGs will** provide independent challenge to companies and independent assurance to us on: the quality of a company's customer engagement; and the extent to which this is reflected in business plans.
- **We will** inform, enable and encourage good quality customer engagement that puts customers at the heart of decision making. In keeping with our statutory duties and strategy, we will step in if required.
- We confirm our decision to **publish early indications** on the weighted average cost of capital (WACC) and outcome return on regulatory equity (RoRE) ranges before business plans are submitted.
- We set out alternative options for **long-term performance commitments (PCs)**, stating our preferred approach that “long-term aspirations” should apply to all PCs at PR19.
- We will propose a **licence modification** to allow all companies to have in-period outcome delivery incentives (ODIs).

2.2 Introduction

2.2.1 Overview

Successful companies in well-functioning markets – where customers are empowered and have choice over their supplier – will genuinely understand and

respond to their customers' changing needs and requirements over time. Otherwise they will go out of business. In regulated markets where customers do not have choice over their supplier, the regulator seeks to mimic the outcome of a competitive market by incentivising companies to genuinely understand and respond to customers' needs and requirements.

We acknowledge that understanding and responding to different customers' changing needs and requirements over time is not an easy task and requires significant commitment by the companies. Keeping up with increasing customer expectations about quality of service and the way in which services are delivered (for example, using social media) can also be challenging. But where this is successful, customers will really benefit by getting the service they want at a price that is fair and legitimate. Companies will also benefit through:

- the regulatory process (for example, less intervention in their plans, higher financial rewards and reputational benefits through incentives like the Service Incentive Mechanism (SIM); and
- higher levels of customer satisfaction, which reduces the costs associated with dealing with queries and complaints.

Evidence produced by the Institute of Customer Service (ICS) shows a positive relationship between the levels of service delivered and levels of customer trust. Higher levels of customer service and therefore trust will benefit the whole sector.

The focus on effective customer engagement and delivering the outcomes local customers want and are willing to pay for will enable companies to reflect local, regional and, where appropriate, national differences. For example, allowing companies to reflect the Welsh Government priorities for water where relevant, including the duty to maintain and enhance biodiversity introduced by the Environment (Wales) Act 2016. Or allowing companies to reflect regional differences in their service commitments, for example, by making commitments about clean beaches in coastal areas that depend on tourism.

In this chapter, we summarise our policy decisions on customer engagement and outcomes. We are also publishing '**Ofwat's Customer Engagement Policy Statement and Expectations for PR19**', which provides further detail on customer engagement and supersedes the policy statement published in 2011 ('[Involving customers in price setting – Ofwat's customer engagement policy statement](#)'). Our policy decisions seek to strengthen the focus on customer engagement and outcomes to help drive an even greater focus on customers now and over the longer term. This should deliver customer benefits by incentivising companies to focus on delivering the outcomes that really matter to their customers and society. We think it

is important to provide clarity to all stakeholders about our expectations for customer engagement at PR19 and this is why we are publishing our decisions at this early stage. We will need to consider more detailed questions of policy and methodology – particularly in relation to our methodology for outcomes at PR19 – in the November 2016 consultation on outcomes and the July 2017 consultation on the regulatory methodology for PR19.

Acknowledging the step-change in the quality of direct customer engagement already achieved by companies and CCGs at PR14, stakeholders support our view that this is an area where companies should be striving to deliver further improvements at PR19. This expectation will be reflected in the standards we apply to business plan quality in the risk-based review at PR19.

We recognise this is ambitious and we are heartened to see a number of companies already demonstrating a clear commitment to step up to this challenge and shift the sector frontier – to the potential benefit of all water and wastewater customers.

2.2.2 Longer-term vision

Our long-term vision is to see companies put customers – both current and future - at the heart of their businesses. This will involve:

- companies demonstrating a genuine commitment to understanding and responding to the varied needs and requirements of customers over time;
- companies responding to different local, regional and, national priorities, such as Welsh Government policy;
- companies building customers' needs and requirements into long-term plans, which they will align to the value customers place on the outcomes delivered; and
- enhanced scrutiny of plans by more empowered and better-informed CCGs.

It will also involve companies realising the potential that customers and customer groups have in addressing some of the external challenges facing the sector, potentially working as partners to co-design and co-deliver solutions.

If we are going to realise our shared vision of trust and confidence in water and wastewater services, it is important our regulatory model informs, enables and encourages companies to develop a genuine understanding of customer needs and requirements as well as a desire to respond to them in a timely and efficient way.

2.2.3 Challenges and opportunities

The focus on customer engagement and outcomes was a key success of PR14 and an important feature we propose keeping for PR19. We acknowledge that companies and CCGs made significant improvements in this area at PR14. However, we also agree with a number of stakeholders – including many companies – that PR19 creates the opportunity for the sector to do more and deliver greater benefits for current and future customers. As a result, we expect companies to deliver a further step-change in the quality of their customer engagement and the degree to which this drives decision making at PR19.

Stakeholders support our commitment to build on the success of customer engagement and outcomes at PR14. Some companies identified potential challenges.

- Some companies felt they have been constrained by the limitations of stated preference willingness to pay (WTP) surveys as a means of estimating customer valuations.
- Some companies felt engaging with their customers on long-term issues was a particular challenge.
- Some felt there was not enough clarity over how we used the results of customer engagement and CCG challenge in our final determinations, which might affect participation in future.

A further challenge discussed in '[Towards Water 2020 – policy issues: customer engagement and outcomes](#)' in July 2015 was improving engagement in the face of change within the sector. Changes are happening in retail and wholesale (water resources and sludge) markets, with further changes possible if the UK Government decides to introduce competition in the residential retail market in England.

As well as challenges, there are a number of opportunities created by further improvements to companies' customer engagement and we are heartened to see some companies already emphasising these. For example, improved engagement can lead to more active and empowered customers who are better placed to work with companies to co-design and co-deliver solutions to some of the external challenges facing companies (for example, an impending demand-supply imbalance).

2.2.4 Our position and next steps

We have reflected on the lessons of PR14 and can see the potential opportunities of providing greater clarity about our expectations earlier on in the price-setting process. As a result, this chapter and the more detailed 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19' provides clarity on:

- our high-level expectations about what good quality customer engagement will look like at PR19; and
- the role of customer engagement at PR19, including the role of the CCGs.

To maintain the focus on customers, we do not want to place ourselves – or any other third party – between companies and their customers. As the regulator, our role is to inform, enable and encourage. Once we have informed stakeholders about our expectations, published any relevant information and developed appropriate incentives, it is up to companies – working with their customers and CCGs – to deliver high-quality business plans that are grounded in and accurately reflect excellent engagement with their customers. Consistent with our statutory duties and strategy, we will step in if we need to. For example, we could intervene if a company failed to provide customers with information on their relative levels of performance or if companies were proposing financial rewards for performance that is not genuinely stretching.

We are very mindful of the difference between providing clarity on our expectations and being prescriptive. We intend to provide clarity rather than prescription, which could inadvertently shift the focus away from customers and back to the regulator, undermining innovation that could have benefited customers. We hope that, by providing clarity at this early stage in the review, companies have the time and space they need to develop effective and innovative customer engagement strategies for PR19.

We would like to see companies building current and future customers' needs and requirements into long-term plans and are consulting on some options and a preferred option on long-term commitments in this document. We are also committing to a consultation this November covering the following aspects of our outcomes methodology for PR19:

- the role of comparative information;
- the balance between bespoke and common PCs;
- the role of comparative assessments;
- asset health; and
- how resilience might be reflected in outcomes.

To sharpen companies' incentives for achieving their commitments to their customers, we will propose a licence modification that will enable – but not require – all companies to have in-period ODIs. Companies will need to engage with their customers on in-period ODIs and reflect that engagement in their proposals at PR19.

2.3 Customer engagement

In this chapter, when we refer to customers, we are referring to end customers – that is, residential and business users of water and wastewater services. We are publishing a separate and more detailed 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19', which provides further information on the role of customer engagement at PR19, including the CCGs and our high-level expectations of what good looks like. This statement builds on and supersedes our 2011 Customer engagement policy statement '[Involving customers in price setting – Ofwat's customer engagement policy statement](#)'.

We will need to consider more detailed questions of policy and methodology – particularly in relation to our methodology for outcomes at PR19 – in the November 2016 consultation on outcomes and the July 2017 consultation on the regulatory methodology for PR19. For example, we will also need to consider in more detail the methodology for assessing business plan quality in the risk-based review for PR19, including in relation to customer affordability. However, we will not provide detailed or prescriptive guidance on how companies should engage their customers as this is a matter for companies and the CCGs.

Customer engagement needs to be considered in the context of wider changes taking place within the sector, and the evolution of the regulatory framework.

- Our reforms, as outlined in this document, intend to make greater use of wholesale markets in sludge and water resources.
- All business customers of water companies whose areas are wholly or mainly in England will be able to choose their retailer from April 2017. The Welsh Government does not currently intend to extend competition to all business customers of water companies whose areas are wholly or mainly in Wales.
- We have been asked by the UK Government to assess the costs and benefits of extending choice to the residential retail sector in England and we will publish our findings in summer 2016. The residential retail review does not consider Wales.

At present, many of the changes are in their infancy and wholesalers engage with the majority of their customers on the full end-to-end delivery of water (and wastewater) services. We do not want wholesalers to lose this link and engagement

with their end customers, irrespective of structural changes in progress or under consideration.

There may, over time, be a change in the level of control some companies have over the issues over which they engage with their end-customers. We expect companies to play their part in providing the appropriate and necessary context when framing their engagement⁴, and to ensure that they continue to engage on the opportunities, issues and challenges where they have any role to play⁵. In due course, companies will need to consider if and how they could engage with retailers or other parties to help them gain additional relevant customer insight.

Where customers have choice, there should be less need for price and/or service quality regulation.

If retail competition is introduced for the residential market in England, we will need to consider what this means in terms of regulating price and/or service quality and the implications for customer engagement. This would include considering the need for any ongoing expectations around customer engagement in the transition to a well-functioning market. The decision on introducing competition in the English residential retail market rests with the UK Government, and we do not propose to consider this any further until it makes a decision. At present, we expect companies to engage with their customers on all aspects of the service delivery, including on retail services.

All business customers of water companies whose areas are wholly or mainly in England will be able to choose their retailer from April 2017. There is a wide range of work ongoing in support of this, including setting a retail price control and introducing a code of practice for the protection of business customers. We expect retailers serving business customers that have choice over their supplier to develop their own customer engagement strategies, and not to introduce any additional requirements or expectations at this time.

⁴ This includes circumstances where end customers receive their water and wastewater services from different providers.

⁵ In taking forward this engagement with end customers in the business retail market in England, companies will want to ensure they are acting in accordance with our compliance code guidance ([‘Expectations for company compliance codes’](#), Ofwat, March 2016).

2.3.1 Our December consultation

Role of companies

We emphasised that companies should continue to be responsible for engaging directly with their customers, as they are best placed to develop a genuine understanding of customers' needs and requirements and to use this information to drive decision making.

We set out our views in a number of areas we considered pivotal to delivering an improvement in customer engagement. We said we would like to see companies:

- develop a richer evidence base and reduce the reliance on stated preference WTP survey-based approaches. Where these techniques are used, companies should consider how they could be improved. We made it clear we would like to see companies generally making better use of customer intelligence and exploring the alternative and complementary tools available, for example, by using revealed preference WTP techniques and data gathered from experiments;
- improve their understanding of the potentially distinct needs and requirements of different customers, including customers in circumstances that make them vulnerable and future customers;
- continuously inform and educate, as well as seek feedback from customers, including on longer-term issues such as resilience; and
- think carefully about how they can involve customers in service delivery, for example, by co-designing and co-delivering solutions. This could involve more community based approaches to decision making and service delivery where this is efficient and appropriate.

Role of CCGs

We proposed that the role of CCGs in PR19 would be to independently challenge the company and provide independent assurance on:

- the quality of a company's customer engagement; and
- the extent to which the results of this engagement drive decision making and are reflected in the company's plan.

We outlined why we do not think CCGs should represent customers or negotiate all or part of the business plan with the company. We drew up a range of proposed initial guidance for CCGs as summarised in the table below.

Table 1: Proposed initial guidance for CCGs

Proposals	
Timetable	<ul style="list-style-type: none"> • CCGs submit independent report to Ofwat when companies submit business plans in 2018. • Where companies do not achieve enhanced status in the risk-based review, CCGs submit a second report when companies submit revised business plans (or parts thereof).
Scope of CCG remit	<ul style="list-style-type: none"> • We clarified where we expect CCGs to challenge companies and provide assurance. • We provided greater clarity on the issues that should be addressed by CCGs in their independent reports to Ofwat. • We clarified that we do not expect CCGs to 'approve' or 'endorse' a company's overall plan.
Membership	<ul style="list-style-type: none"> • We said companies should consider the appropriate membership of their CCG, based upon their particular circumstances. • We said we would like CCWater, the Environment Agency /Natural Resources Wales (NRW) and the Drinking Water Inspectorate (DWI) to play key roles on the CCGs. Need to consider how smaller organisations such as DWI can be involved without being unduly burdened. • We supported the appointment of CCG chairs to act as individuals and not representing a particular organisation or group of customers so they can focus on their role of being a strong and independent chair.
Transparency	<ul style="list-style-type: none"> • Companies are transparent about funding and governance arrangements for their CCGs. • We committed to say more about how we will seek greater assurance from companies on the measures they are taking to preserve the independence of the CCGs in May 2016.
More CCG collaboration	<ul style="list-style-type: none"> • We proposed hosting regular workshops with CCG chairs to facilitate the sharing of information, knowledge and good practice. • We encouraged more CCG chair only collaboration.
Publishing information	<ul style="list-style-type: none"> • Annually, we will publish a single table setting out how each company is performing against each one of its performance commitments. • We aspired to publish early indications on the WACC and outcome RoRE ranges before business plans are submitted. • We highlighted the importance of comparative information on company performance and committed to consult on this in November 2016.

2.3.2 Responses to our December consultation

Role of companies

We received widespread support for our proposals and the customer engagement principles we outlined in our December consultation.

Respondents agreed that engagement should be continuous rather than only involving customers at price reviews. Some, for example, Affinity Water and CCWater, specifically supported making better use of information gathered through daily interactions. South East Water said it expects the regular data being gathered through its monthly surveys implemented at PR14 will provide a better understanding for measurement and benchmarking.

Respondents such as Northumbrian Water, the Chartered Institution of Water and Environmental Management (CIWEM) and Anglian CCG generally agreed that companies need to engage with different customer groups, while some specifically wanted to focus efforts on customers who are hard to reach or in circumstances that make them vulnerable. CCWater said companies must also make themselves accessible through a variety of channels. For example, hard-to-reach customers are likely to be offline or may not have a landline, while some might be less inclined to engage proactively with water company information.

Respondents such as Severn Trent Water and NRW agreed with the principle of customer engagement on long-term issues. South East Water highlighted the complexity of issues such as inter-generational impacts and said it would need to think carefully how to tackle this.

Portsmouth Water and Thames Water CCG felt that communicating is just as important as listening, with customer engagement needing to be two-way and interactive. Northumbrian Water stressed the importance of providing unbiased information to gain genuine views from customers and outlined how it plans to explore the most effective way to incorporate comparative information.

Respondents strongly agreed that companies need to use a wide range of approaches to customer engagement, with some such as Bournemouth Water CCG suggesting more can be done to explore a greater use of social and digital media. South East Water thought that any new methods should be introduced alongside existing methods so differences can be fully understood. United Utilities contributed through a paper on 'Improving Customer Research and Engagement' published on the [marketplace of ideas](#), which we welcome and encourage stakeholders to look at.

United Utilities said its views on good customer engagement – which are set out in its paper – are broadly in line with those outlined in our consultation. However, it considers that there needs to be emphasis on establishing the value customers place on the different aspects of service, which enables trade-offs to be made.

South West Water, Anglian Water CCG and Thames Water CCG were clear that we should avoid being too prescriptive about how companies carry out their engagement, so they can pursue different approaches. Some respondents, such as Thames Water, wanted particular assurance that the results of customer engagement, if it is carried out correctly, would be reflected in final determinations.

The Environment Agency and CIWEM highlighted the need to take into account a range of information and views not only on customers' but also experts' views or resilience impacts. CIWEM said environmental needs should be considered more, alongside those of bill-paying customers.

Respondents were positive about sharing best practice across the water and wastewater services, with several suggestions made such as workshops, United Kingdom Water Industry Research (UKWIR) reports, benchmarking outside the water sector and working with companies which do well at customer engagement.

Role of CCGs

Most respondents agreed and indeed welcomed our proposals and clarity on the role of the CCGs for PR19. One respondent, Affinity Water, cautioned against being too prescriptive regarding CCG remit, membership, reports and governance arrangements. Anglian Water and Bournemouth Water CCG caveated their support by urging us not to provide too prescriptive guidance and Southern Water said that too much prescription over how CCGs operate would inhibit the scope for innovation and new ideas. For example, it would not support us requiring CCGs to have common terms of reference or specifying the structure of reports.

Timetable

On the whole, respondents viewed the proposed reporting timetable as sensible. A number of respondents, such as Bristol Water, South East Water and Thames Water CCG, felt CCGs should be allowed to submit their reports later (some suggested two weeks) than the companies' final business plans. This is so the CCG can properly consider any late changes made to the final business plans before submitting its report.

Scope of CCG remit

Most respondents welcomed our clarity on the division of responsibilities between us and CCGs, and were supportive of our proposals. Most supported our guidance on what the CCG reports should include and on the list of questions. South East Water said it welcomed the dialogue we have had with CCG chairs about our respective roles and supports the proposal that this dialogue continues through a series of workshops.

The Environment Agency highlighted the need for clarity around what can and cannot be influenced so expectations are managed.

Some respondents, such as CCWater, EA, NRW and Thames Water CCG, cautioned around making the remit and scope of CCGs too narrow by, for example, deterring them from challenging on costs or providing a view on overall business plans. Wessex Water were disappointed the proposals did not go further, highlighting advantages in giving stakeholders a stronger role in making decisions.

Membership

The majority of respondents supported our suggestions on CCG membership. Most were happy with our proposal that the environmental and drinking water quality regulators are involved in CCGs and some specifically support their continued involvement. However, Southern Water felt the relationship between Ofwat and the statutory regulators is better managed outside the CCG process, as this reflects and respects these organisation's specific statutory duties. NRW said that they were keen that their involvement in CCG's goes beyond simply supporting companies' engagement with customers in the traditional sense, but that the environment is equally viewed as a customer of the periodic review process.

Transparency

Few comments were made around our proposals. One company said its CCG raised points about publishing details of payments, discussions and minutes, and suggested any published minutes are anonymised.

More CCG collaboration

The response on greater collaboration between CCGs was positive, with many seeing the benefits such as cross-learning, comparing best practice, providing support and bolstering independence.

A few respondents, such as Thames Water and Wessex Water, felt that the levels of information shared must take account of the fact the CCGs are operating in a competitive environment. Affinity Water said that, based on its experience of PR14, it was not convinced that CCG collaboration is a good thing. Severn Trent Water highlighted the need for us to have regard to the time that CCG chairs have committed and suggested that workshops and meetings for CCG chairs are not held too frequently.

Wales Water Forum

In previous consultations, we highlighted the Wales Water Forum as a successful means of engaging a range of stakeholders on water issues in Wales, and we sought views on the role it could play in PR19. In its response, the Welsh Government said it would not want this to become the only route for engagement with Welsh stakeholders, as many of the issues relating to the regulatory framework require more detailed discussions than would be possible through this Forum. It has confirmed that it will be establishing a forum for PR19 that would write to Ofwat following the submissions of plans by the companies, either to highlight that they are content from a policy perspective or to highlight the positives and negatives of the process.

Publishing information

A number of respondents welcomed the provision of comparative information on company performance to strengthen the customer voice. South East Water and Yorkshire Water highlighted the importance of ensuring that any information used in this way is truly comparable.

Most respondents were in favour (many strongly so) of us publishing information on the WACC and outcome RoRE ranges early, to help frame conversations with customers about bill impacts, for example. Some, such as Affinity Water and Bournemouth Water CCG, raised a point that the technical nature of this information could cause potential difficulties when sharing it in a meaningful way with lay

persons. Beyond that, some felt a need to consider the skill set within a CCG to ensure it covers a broad spectrum, such as economics, technical and social.

Anglian Water thought we could also do more to set out our 'red lines' and 'green lights' for the price review at an early stage. That is, those areas where we feel the decision should be for the regulator alone and those where we are willing to see conclusions that would primarily flow from good customer engagement processes.

2.3.3 Our review and analysis

There was considerable support for our proposals on customer engagement. The responses confirm that the direction of travel set out at PR14 remains valid, and that stakeholders firmly support our intent to build on this strong foundation. As a result, we are not making significant changes to the proposals consulted on in December. We are building on (or making minor modifications or clarifications to) our proposals, with some of the detail based on further evidence and feedback from stakeholders. This is explained further in the next section and the accompanying 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19'.

2.3.4 Our policy decisions on customer engagement

In this section we summarise our policy decisions on customer engagement. Further important detail can be found in the accompanying 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19', which supersedes our customer engagement policy statement we published in 2011.

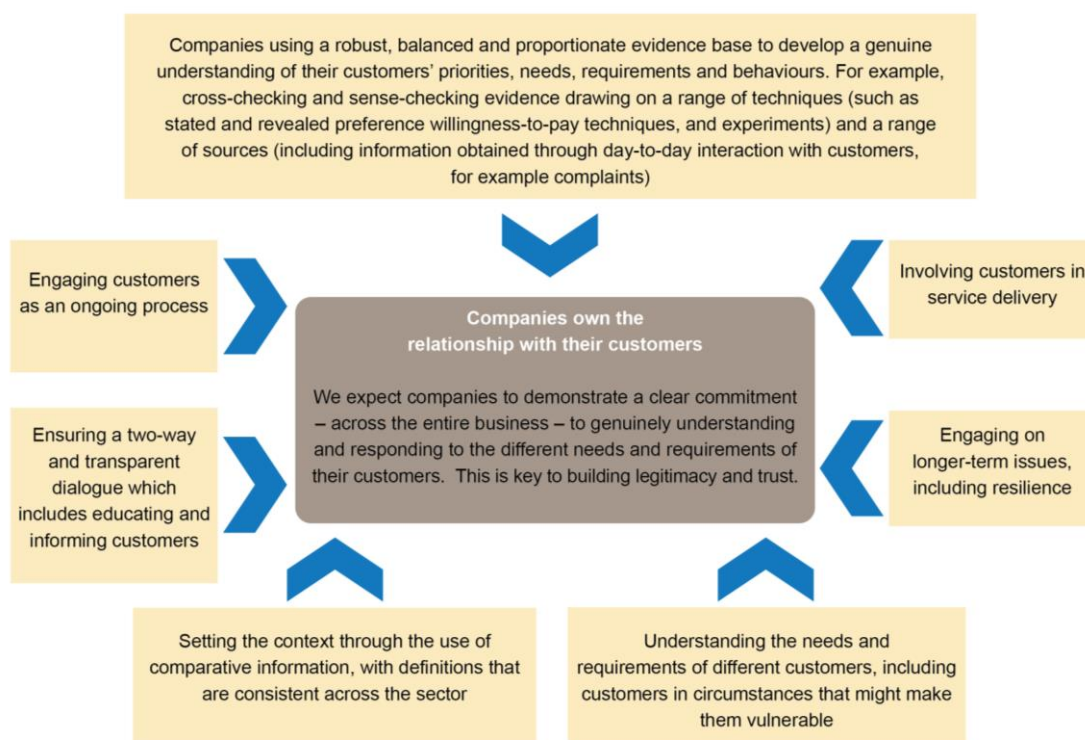
Role of companies

Companies will continue to be responsible for engaging directly with their customers; we agree with stakeholders that this is where ownership and accountability needs to sit. Companies are best placed to build the relationship, develop a genuine understanding of their customers' needs and requirements, and use this information to drive decision making. We still think, and stakeholders support this, that it is not for us to prescribe in detail how companies should engage with their customers. However, we agree we need to provide clarity on our expectations about what good quality customer engagement looks like at PR19, especially since we are expecting further improvements in this area. This expectation will be reflected in the standards we apply to business plan quality in the risk-based review at PR19.

Principles of good customer engagement

In 2011, we set out a number of principles that should apply to customer engagement at PR14. Building on these, and reflecting lessons learned from PR14 and the views of stakeholders, we have outlined a number of principles we consider to be important for delivering further improvements in customer engagement at PR19. Further information is provided in ‘Ofwat’s Customer Engagement Policy Statement and Expectations for PR19’.

Figure 3: Principles of good customer engagement



Using a robust, balanced and proportionate evidence base

While stated preference WTP techniques continue to have an important role to play, it is also important for companies not to place sole or disproportionate reliance on such methods and to build a robust, balanced and proportionate evidence base. We welcome the work that has been carried out by stakeholders around suggested improvements to Stated Preference WTP techniques. We also encourage companies to explore alternative and complementary tools, and to make use of evidence obtained through day-to-day contact with customers (such as from data generated through complaints, general contacts or social media). This also includes thinking about more innovative and frontier-shifting approaches to engaging with

customers, for example by using revealed preference WTP techniques and experiments and by applying behavioural economics insights to the design and interpretation of the engagement. In doing so, we encourage companies to be proportionate in their approach so that the more significant the decision, the more robust the evidence base to support it.

At PR14, WTP information was required to develop PCs and ODIs. We will consult on the proposed methodology for this in our methodology consultation (July 2017) but note that customer valuations remain important and WTP information may still feature in this framework.

Engaging customers as a continual and ongoing process

Customer engagement is not a one-off exercise restricted to a specific time period in the run-up to the price reviews. It is a continuous process of learning and responding. Engagement in this context also does not necessarily mean proactive contact or dedicated and targeted research projects. As noted above, a robust, balanced and proportionate evidence base will take account of operational data, and companies can consider how best to derive insights from business-as-usual interactions with customers. Continuous engagement means being open to gaining customer views and feedback across channels, interactions and platforms, and can be driven by customers rather than necessarily being solicited by the companies.

Ensuring a two-way and transparent dialogue

We would like to see companies informing and educating their customers as well as seeking feedback from them. It is important companies do their best to ensure the wider customer base is informed about decisions that have been made and plans that have been designed, including how the results of customer engagement have influenced these. This type of engagement can also be continuous and need not be limited to a one-off exercise at the end of a price review or at the start of a new price control period. The processes of engaging to learn and communicating to inform can run in parallel.

Understanding the needs and requirements of different customers

It is essential to understand and respond to the distinct needs and requirements of different customers. This includes, for example, those in circumstances that make

them vulnerable⁶, (micro-) businesses and communities that may represent multiple customer segments. We want companies to consider the different customer segments they serve, and ensure these are appropriately represented in the customer engagement process.

Engaging on longer-term issues, including resilience

Good quality customer engagement will involve informing and engaging customers on longer-term issues. Resilience, security of supply and long-term affordability are examples of longer-term issues that matter to customers. Companies should ensure their plans reflect the needs and requirements of current as well as future customers.

Involving customers in service delivery

We would like to see companies carefully consider how customers could help co-create and co-deliver solutions to underlying challenges (for example, supply-demand imbalances), drawing on best practice in the water industry and other sectors. Co-creation means companies are genuinely open to taking customers' views into consideration as they assess options and design their future service delivery. Co-delivery means companies actively consider where customers or communities can become part of the solution to specific issues and challenges.

Setting the context through the use of comparative information

We also think it is important companies are transparent with customers about their relative levels of performance by using comparative information, with definitions that are consistent across the industry. We will publish a consultation on comparative information at PR19 in November 2016. We expect companies to use the comparative information that gets developed or published through that process. Further detail can be found in the section below on outcomes.

These principles are consistent with and reflect the second recommendation of the independent [Task and Finish Group on Resilience](#) – a recommendation it addressed to water companies and governments specifically – to increase public engagement and education. We recommend water companies consider the relevant conclusions

⁶ To broaden the understanding of customer vulnerability in the water sector in England and Wales, and to stimulate interest and debate around the issue, we published '[Vulnerability focus report](#)' in February 2016. We also published '[Affordability and debt 2014-15](#)' in December 2015, which provides important information about vulnerable household customers in England and Wales.

and analysis of this report when designing and implementing their customer engagement strategies.

Costs

While there are considerable benefits from our principles for customer engagement, we recognise that principles such as using a robust, balanced and proportionate evidence base and understanding the needs and requirements of different customers could increase the cost of customer engagement for companies, at least in the short term. That said, some of our principles focus on making better use of existing information (for example, operational data), so should not necessarily lead to an increase in costs. Some companies forecast their customer engagement costs will increase for PR19, although six did not. Overall, companies are forecasting a relatively small increase in costs, compared with turnover, from £17.2 million at PR14 to £21.1 million at PR19. In the impact assessment below, we explain why we consider the benefits of our customer engagement policy to outweigh the costs significantly.

Role of CCGs

A summary of our policy decisions on the role of CCGs for PR19 is set out below. Further information can be found in 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19'.

We are aware that all companies have continued to have CCGs after PR14, and that most of these are currently providing assurance on delivery of the PR14 business plans. Whilst we have encouraged and incentivised companies to put in place robust assurance processes for reporting on their performance against business plans over the 2015-20 period, we have not specified how this should be achieved or mandated this latter role for CCGs, which is for the companies and CCGs to agree. If CCGs are also providing challenge and assurance on the delivery of the PR14 business plans, the CCGs and companies will need to be mindful of and transparent about the fact that, going forward, the groups will be performing two distinct roles.

Table 2: Summary of our policy decisions on the role of CCGs at PR19

Role of CCGs	<p>CCGs will provide independent challenge to companies and independent assurance to us on:</p> <ul style="list-style-type: none"> the quality of a company's customer engagement; and the extent to which the results of this engagement are driving decision making and are reflected in the company's plan. <p>CCGs are not a substitute for a company engaging with its actual customers and CCGs should not substitute its views for those of customers.</p>
Timetable	<p>CCGs will submit an independent report to us when companies submit business plans in 2018.</p> <p>Where companies do not achieve enhanced status in the risk-based review, CCGs will submit a second report when companies resubmit business plans (or parts thereof).</p>
Scope of CCG remit and CCG reports	<p>CCG reports should focus on those issues that customer engagement are most likely to genuinely influence, including but not necessarily limited to: outcomes (including PCs and ODIs); and affordability of bill impacts. A list of non-exhaustive questions intended to provide guidance on the issues that CCG reports should address are included in 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19'.</p> <p>We do not expect CCGs to provide assurance that all costs included in a company's plan are efficient, but we do not want to preclude them from challenging costs if they think it is appropriate.</p> <p>We do not expect CCGs to 'endorse' a company's overall plan. It is important that CCG reports highlight areas of challenge and disagreement, including how the company has responded.</p>
CCG membership	<p>CCG membership should reflect local circumstances and challenges facing residential and business customers.</p> <p>Chairs should act as individuals and not represent a particular organisation or group of customers.</p> <p>We expect CCGs to include a representative from CCWater and, if appropriate and possible, a representative from a debt-advisory body.</p> <p>We expect the environmental and drinking water quality regulators to play a significant role informing CCG discussions at PR19.</p> <p>We encourage CCGs to consider how smaller organisations are able to effectively participate in the process without being unduly burdened.</p> <p>Companies are responsible for meeting their environmental and drinking water quality statutory obligations. We expect the CCG report, either in the main body or through an annex, to include commentary on any concerns the CCG process has highlighted in respect of any tensions between delivery of the proposed plan and statutory environmental and drinking water quality obligations.</p>

Table 3: Summary of our policy decisions on our role

<p>Governance and transparency</p>	<p>In order to build trust and legitimacy, we would like to see more focus on CCG governance and funding process transparency at PR19. We will take greater assurance from reports from CCGs with stronger and more transparent governance processes in place.</p> <p>It is for the companies to ensure their relationship with the CCG is at arm's length. We do not intend to prescribe particular processes that should be adhered to, but we will consider what measures companies have taken to preserve and bolster CCG independence.</p> <p>CCGs can also take measures to ensure they can act (and are perceived to act by customers and wider stakeholders) independently. For example, we have agreed with CCG chairs that they should refresh their terms of reference to reflect their role at PR19 and how it differs from the role many of them are carrying out in relation to PR14 performance. We set out other examples in 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19'.</p>
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By providing clarity on the role of CCGs, we think this should avoid at PR19 any costs that were incurred at PR14 from CCGs spending their time and resources on issues not clearly within their remit.

Our role

As described above, our role is to inform, enable and encourage good quality customer engagement that puts customers at the heart of decision making. Ultimately, this is for companies to deliver, working with their customers and CCGs. But consistent with our statutory duties and strategy, we will step in if we need to, for example, if a company had not provided customers with information on their relative levels of performance. Here we set out a summary of our policy decisions on our role. More detail can be found in 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19'.

Table 4: Summary of our policy decisions on our role

Our role	We will inform, enable and encourage good quality customer engagement that puts customers at the heart of decision making. Consistent with our statutory duties and strategy, we will step in if required.
Setting out expectations	We have and will continue to provide clarity on our expectations regarding good quality customer engagement at PR19, including the roles we, companies and CCGs have in delivering this.
More CCG collaboration	We will host regular workshops with CCG chairs to facilitate the sharing of information, knowledge and good practice and help facilitate more CCG collaboration.
Wales Water Forum	The Welsh Government has confirmed it will establish a PR19 Wales Water Forum. This forum will also have an important role informing relevant stakeholders about the Welsh Government's legislative requirements and policy agenda. We expect this forum to complement rather than duplicate the CCG process at PR19.
Publishing information	<p>We have emphasised the importance of companies being transparent with customers about their relative levels of performance by using comparative information, with consistent definitions across the sector and we will publish a consultation on this issue in November 2016.</p> <p>We confirm our commitment to publish early indications on the WACC and outcome RoRE ranges before business plans are submitted. We will provide information on our cost assessment approach and cost-efficiency modelling, as part of the price review methodology statement which could inform companies' development of their view of efficient costs to deliver business plans and items such as special factor claims.</p> <p>We will publish a single table annually, which sets out how each company is performing against each one of its PCs.</p>

The risk-based review

We will link the quality of a company's customer engagement directly to our assessment of business plan quality in the risk-based review. Our assessment of quality will reflect our expectation that companies should strive to deliver a step-change in the quality of their customer engagement at PR19. As was the case at the last price review (PR14), we expect the quality of a company's customer engagement to be one of a number of aspects of business plan quality that we will assess in the risk-based review. As a result, excellent customer engagement that is genuinely reflected in a company's plan is likely to be needed to gain enhanced status, but is not the only factor required. For example, we would have concerns if customers are engaged on price-quality trade-offs that assume a level of costs we think is inefficient. Further information is provided in 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19' and we expect to publish further information on the risk-based review in the methodology consultation in July 2017.

We confirm that company performance in period will count towards our assessment of business plan quality at PR19. We are aware companies will not be able to fully control external events that can adversely affect their business and therefore performance. We acknowledge this and, in such cases, will be looking for evidence on how companies have responded to such events.

Customer challenge and expertise in Ofwat

In December, we noted it was useful to seek challenge from the PR14 Customer Advisory Panel (CAP) who challenged us as we developed the PR14 methodology. We also noted that it was sometimes difficult to reconcile the PR14 timetable and its milestones with the timetable of meetings planned for the CAP. We did not consult on a proposed option, but highlighted that we were considering options to embed an internal customer challenge function at PR19.

There are a number of ways in which customers can already challenge the design and delivery of our methodology at PR19, including via:

- CCWater and other customer representative groups;
- the CCG chairs;
- the New-Pin⁷, which is aiming to build capacity in the water and energy sectors to ensure public interest is better represented; and
- the Water 2020 expert advisory panel. This will provide external expertise from a number of different fields (customer, investor, environmental, regulatory and academic) to help us develop and test our thinking on issues of policy and practice in relation to our Water 2020 programme.

Having analysed a range of options, we have decided to bolster the existing challenge routes by adding additional customer expertise to our Water 2020 expert advisory panel. This approach will help embed customers at the heart of the programme. We will also draw down on this expertise at critical points, providing increased flexibility. While there are clear benefits from establishing a separate advisory panel, adding appropriate expertise to the existing panel can provide an effective and powerful challenge in a flexible and efficient way. More information is

⁷ New-Pin is the New Energy and Water Public Interest Network run by Sustainability First. It aims to build a stronger and more co-ordinated voice among customer, citizen and environmental advocates.

provided in 'Ofwat's Customer Engagement Policy Statement and Expectations for PR19.'

2.4 Outcomes

The move at PR14 to focus the regulatory process on the outcomes customers want and are willing to pay for is generally viewed by stakeholders as a success. We propose retaining the focus on outcomes at PR19. The use of outcomes means companies are focused on delivering what matters to customers rather than delivering particular schemes. One of the major benefits of outcomes is that they can be adapted to reflect local, regional and where appropriate national differences in customer views, circumstances and policy. For example, this allows water companies whose area is wholly or mainly in Wales to adapt the performance commitments they make at a price review to reflect differences in customer views, circumstances and government policy in Wales.

In relation to outcomes, we plan two further consultations ahead of PR19.

- In November 2016, we will consult on the role comparative information should play at PR19, the balance of common and bespoke commitments, the role of comparative assessments, asset health and how resilience might be reflected in outcomes. A stakeholder workshop has already been scheduled on this for 14 June.
- In July 2017, we will consult on more detailed aspects of the outcomes framework for PR19 (for example, the methodology for calculating ODI rewards and penalties and the approach to setting dead bands, caps and collars).

2.4.1 Our views as set out in the December consultation

In our December consultation, we stated we would like to build on the success of outcomes at PR14 and to reflect the lessons learned. We set out views in relation to the following issues.

Focusing on the longer term

We stated that the outcomes framework should encourage a longer-term approach as has always been its intention. This reflects our new resilience duty and our consumer interest objective (which covers the interests of existing and future consumers). To further sharpen the focus on the longer-term, we consulted on

whether certain commitments, such as asset health, should span more than a single regulatory control period.

Striking a balance between bespoke and common outcomes

There is a balance to be struck between bespoke PCs, which allow companies to reflect their local customers' requirements and issues specific to a company or area, and common PCs, which allow customers and CCGs to challenge companies to set truly stretching PCs by comparing them with other companies. We aim to cover this issue in our November 2016 consultation on outcomes. We explained that our consumer and resilience duties mean we cannot rule out intervening on companies' proposed targets if it was necessary to protect customers or to further our resilience objective. We proposed to carry out any comparative assessments of PCs during the risk-based review to allow companies time to review the results, engage with customers and CCGs and make changes to their business plans before draft determinations.

Confidence in performance commitment definitions

We explained that we want customers to be able to trust the definition of PCs and be able to rely on them being fair to customers. We proposed that companies should submit the definitions – but not the targets or any associated incentives – for their PCs in early 2018 before they submit their business plans to enable early comparison and clarity on definitions.

Better incentives

We would like to link companies' performance more closely in time to their rewards and penalties. To make payment of rewards and penalties timelier at PR19, we consulted on a licence modification to allow for ODIs for which revenue adjustments can be made during the price review period (in-period ODIs) rather than at the following review. We also proposed to consult in the methodology consultation document in 2017 on:

- the aggregate cap and collar for ODIs;
- calculating rewards and penalties;
- setting dead-bands, caps and collars;
- averaging performance; and
- moving away from scheme-specific performance commitments at PR19.

Delivery outcomes across disaggregated controls

Our proposals for separate binding controls for sludge and water resources could have effects on outcomes. We committed to revisit this issue in the future, as our approach to the sludge and water resource controls develops.

2.4.2 Responses to our December consultation

In our December consultation, we asked four questions on outcomes relating to:

- long-term PCs;
- the proposed contents of our November consultation on outcomes;
- submitting PC definitions earlier than business plans; and
- a licence modification for in-period ODIs.

Overall, stakeholders welcomed our outcomes proposals. Some provided views on some of the details of our consultation proposals, which we address in the following sections.

Long-term commitments

There was general support from stakeholders for the principle of long-term commitments, with many respondents seeing benefits in companies making long-term commitments. Many companies would prefer us to encourage rather than mandate long-term PCs, some companies objected strongly, while CCWater and the Environment Agency supported mandating. Respondents stated there might be a need to re-open long-term ODIs to avoid them becoming outdated and unrealistic. The Frontier Economics report for UKWIR investigated these issues and others, including how future changes in circumstances could be dealt with, whether dynamic ODIs could be used and which types of PCs might be amenable to long-term targets and ODIs. One respondent queried setting long-term targets without a commitment to the future expenditure associated with the PC.

Consultation on outcomes in November 2016

Some respondents suggested our proposal for a consultation on outcomes in November 2016 will be relatively late given companies are consulting with their customers this year. Stakeholders made several suggestions for adding to the scope of the consultation, including the form of the ODI rewards and penalties, local or general rewards and penalties, the appropriate strength of rewards and penalties and the link between outcomes and totex cost assessment. One respondent disagreed with the proposed emphasis on comparative information and possible

comparative measures rather than allowing companies more discretion over the outcomes they propose.

Submitting PC definitions early

There was general support for our proposal that companies submit their PC definitions ahead of business plans in early 2018. Respondents thought that submitting definitions early was appropriate for comparator PCs, relatively standard PCs or PCs that have not changed much since PR14. Some responses suggested that the definitions of any comparator PCs should be agreed across the sector in early 2017 rather than early 2018.

Respondents thought submitting definitions early was less appropriate for new or innovative PCs. There was a risk that the proposal might reduce the time for companies to engage with their customers iteratively on such PCs and might discourage companies from proposing them. One company thought this was an example of us shifting the focus of performance commitments away from customers and towards the regulator. Some respondents welcomed the proposal if it reduced the scope for our interventions later in the price review process.

In-period ODIs

There was general support for our proposal for a licence modification to allow for the in-period payment of outcome delivery rewards and penalties. Respondents suggested that in-period ODI payments could create a stronger incentive for companies to improve performance and could reduce bill jumps at price reviews. Some responses suggested that in-period ODI rewards or penalties could lead to bill instability between price reviews, might make companies more short-term in their focus and would introduce a new annual administrative burden. Several respondents suggested it should be up to customers whether and how a particular company implements in-period payment of ODIs.

2.4.3 Our review and analysis

There was considerable support for our proposals on outcomes. Stakeholders' responses firmly support our intention to build on the outcomes approach started at PR14. As a result, we are not making significant changes to the direction we set out in December. We are building on our proposals, based on the feedback we have received from stakeholders. This is explained further in the next section.

2.4.4 Our policy decisions on outcomes

Long-term commitments

We are consulting on some options for long-term commitments in this document (see below). Our preferred option is that companies should provide long-term aspirations for all their PCs at PR19 and be transparent about these with their customers and other stakeholders. We will also consider proposals by companies for long-term commitments (with a default assumption they remain unchanged at future price reviews) and long-term ODIs, provided they are supported by good evidence.

Our preferred approach strikes the right balance between the potential benefits and costs of long-term commitments. Such benefits could include incentivising companies to focus on their customers over the longer term and improving engagement with customers and other stakeholders on future levels of service. The costs could include targets becoming unrealistic over long time periods and companies being cautious in their proposed commitments due to uncertainty over the levels of performance that can be achieved further in the future.

Consultation on outcomes in November 2016

We will consult on outcomes in November 2016. The consultation will focus on:

- the role of comparative information on company performance;
- the balance between bespoke and common PCs;
- the role of comparative assessments;
- asset health PCs; and
- how resilience might be reflected in PCs and ODIs.

We will engage with stakeholders during this year ahead of the consultation, for example, we did so at the UKWIR workshop on outcomes on 2 March 2016 and we are planning a workshop on 14 June to discuss outcome issues. We are also engaging with other organisations' work on developing comparative information on company performance such as Water UK's sector strategic dashboard, CCWater's consultation on publishing information collected from water and sewerage companies (WaSCs), the EA's indicators for the Environmental Performance Assessment and the DWI's monitoring measures. We will ensure we complement rather than duplicate these organisations' work.

Stakeholders made several suggestions for adding to the scope of the consultation. Many of these covered areas relating to risk and reward (for example, the form of the ODI rewards and penalties), which we plan to address in the July 2017 PR19

methodology consultation when we will be looking at risk and reward issues in the round.

We intend that the increased use of comparative information on company performance will lead to companies engaging with better informed customers and CCGs that can provide more powerful challenge. It is important for the data to be comparable across companies and we recognise companies are working on this now. We will consider the output of the companies' work in our further development of comparative information so we complement rather than duplicate work done by others. We expect companies to draw on comparative information and best practice from beyond the water sector where appropriate.

The increased use of comparative information on company performance and the potential use of common PCs will still leave plenty of scope for companies to engage with and understand their customers' particular preferences and to propose bespoke performance commitments that reflect them. The framework for customer engagement and outcomes we are developing for PR19 provides the sector with the opportunity to step up, which should reduce the need for us to intervene in companies' proposed outcomes. However, we will intervene if necessary to fulfil our customer or resilience objectives.

We think it is important to clarify that comparative information on company performance and common PCs are different. Comparative information could cover a relatively wide set of measures companies can use to engage with their customers and CCGs. Common PCs are more likely to cover a smaller number of measures, probably a subset of the comparative information measures. We will consult on the use of comparative information and common PCs in November.

Submitting PC definitions ahead of business plans

We expect companies to submit their PC definitions ahead of business plans. This will allow us time to review the definitions and provide any feedback to companies ahead of them submitting their business plans. We will set out our expectation of when submission should happen at a later date. Companies should, of course, still develop their PCs focusing on their customers' needs. The early submission of definitions is in no way designed to shift companies' focus back towards the regulator.

By default, companies should submit the definitions for PCs ahead of business plans. However, reflecting stakeholders' comments, by exception, a company can choose not to submit a definition early if a PC is new, innovative or requires extensive customer engagement. Companies should be aware that we will scrutinise

these definitions more closely during the risk-based review at PR19 as a result of not seeing the definitions early. As some respondents pointed out, the work we are initiating on common PCs (which is different from comparative information as discussed above) might result in some definitions being agreed in 2017 for the whole sector.

While we propose to review the definitions of PCs, it is up to companies to ensure the definitions of their PCs are appropriate and that they have engaged with customers and CCGs on the measures appropriately. However, it can be difficult for customers to understand the detailed definitions of PCs and for CCGs to challenge them without information on the detail of what other companies are proposing. Examples might include the detailed exemptions for weather events or third-party actions that are included in the definitions of some PCs. For this reason, we expect companies to submit their PC definitions ahead of business plans.

In-period ODIs

We will propose a licence modification that will enable – but not require – all companies to have in-period ODIs. These will help shift companies' focus away from the five-year price review cycle to delivering for their customers now and in the longer term. The licence modification will facilitate, but not require the use of in-period ODIs. Following the licence modification, companies would need to engage with their customers on in-period ODIs for PR19 onwards to explain their potential benefits and bill impacts. Companies will need to reflect that engagement in their proposals for in-period ODIs at PR19. The licence modification would allow us to intervene to require in-period ODIs at PR19 if necessary, for example, if a company ignored its customers' wishes for in-period ODIs without good reason.

We will discuss the design of the licence modification and associated policy issues (such as whether to limit in-period adjustments to mitigate against bill volatility) through our engagement on licence modifications (see Chapter 8). We will also discuss the processes needed to administer in-period ODIs annually and how they can best be designed.

In relation to in-period bill volatility, we estimate the two companies in 2015-20 with a significant number of in-period ODIs could earn rewards that would increase bills by 2% to 3% for one year if they deliver exceptional performance. In 2015-16, we do not expect the two companies to earn rewards to this extent. Further rewards would require the companies to sustain their outperformance. On the other side, we estimate that companies could have to pay penalties equivalent to around a one year bill reduction of 4% if they delivered poor performance to their customers. Further penalties would require the companies to continue to underperform. This analysis is

based on the 2015-16 in-period ODIs and the associated licence condition those companies have. This compares with volatility in the annual RPI adjustment for inflation used in 2015-20 control, from around 0% to 5% in the last ten years.

2.4.5 Service Incentive Mechanism (SIM)

In our December consultation, we noted that, by PR19, the SIM will have been in place for two price control periods. We note that Government is looking to make a decision whether to introduce competition into the residential retail market in England, but would have in any case proposed to review the effectiveness of this incentive mechanism and whether it should be retained, modified or replaced in PR19.

Ofwat introduced the SIM in 2010. In the absence of true competitive pressure, it aims to provide companies with an incentive to provide more than a basic level of service to customers. It was our first move towards a customer-focused and outcomes-driven regulatory measure. The SIM encourages companies to understand and take responsibility for delivering what customers want, as would be the case in a competitive market. It also encourages companies to continually innovate and improve – because they are measured against each other.

The SIM has contributed to a real change in the customer service landscape in water and wastewater services. Since its introduction, we have seen a paradigm shift in how companies interact with their customers. Written complaints have dropped by 60% and companies agree the SIM has been a highly effective tool to drive improvements in performance. Some companies are increasingly looking to benchmark themselves against the top performers in all sectors, not just the water and wastewater sector.

We have already committed to continue using the SIM - in its current form - for this current price control to ensure customer service remains at the core of companies' focus. There are a number of reasons for considering changes at PR19 for the 2020-25 price control period:

- companies (and Ofwat) are in a different place from when the SIM was first introduced;
- SIM scores are beginning to converge; and
- customer expectations continue to evolve.

We are investigating how we can ensure the SIM (or a variant thereof) remains relevant following this current price control and reflecting any decision taken by the

UK Government whether to introduce competition into the residential retail market in England. After our December consultation, several companies provided suggestions for improvements. In developing any new approach, we will need to consider to what extent it will:

- put customers' needs and requirements at its heart;
- focus on outcomes not processes;
- incentivise companies to continually innovate and improve;
- be easy for customers and stakeholders to understand and compare;
- be fair and impartial;
- be relevant to modern customers;
- be based on outcomes attributable to the company;
- be robust, comparable and consistent; and
- offer value for money.

We are in the early stages of considering this. In the coming months, we will look to engage with stakeholders to get further views and ideas and we may use the November consultation as an opportunity to get feedback on more concrete ideas. We welcome companies getting in touch with us if they wish to discuss their initial views or propose to undertake their own research in this area.

2.4.6 Areas for further consultation on outcomes

We are planning extensive engagement on outcomes over the next 18 months, including a workshop in June, the November consultation and the July 2017 PR19 methodology consultation. We will also be engaging with stakeholders on the in-period ODIs through our licence modification.

Long-term commitments

We are consulting on one outcomes issue in this document: long-term commitments. We want to incentivise companies to focus on their customers over the longer term, rather than concentrating their effort around five-year price reviews. The water sector is a long-term business, with long-lived assets and intrinsic links to ecosystems. Decisions made today can have impacts well beyond the five-year price control. Long-term commitments should result in better quality engagement with customers and other stakeholders on future levels of service. Long-term commitments could also help ensure that the costs and benefits of supplying water are appropriately shared across generations.

Long-term commitments are part of the wider outcomes package and we plan to engage further on this area via the outcomes workshop in June and our November consultation. We welcome stakeholders' views on our current preferred long-term commitments option.

The diagram overleaf sets out four long-term commitments options we have considered.

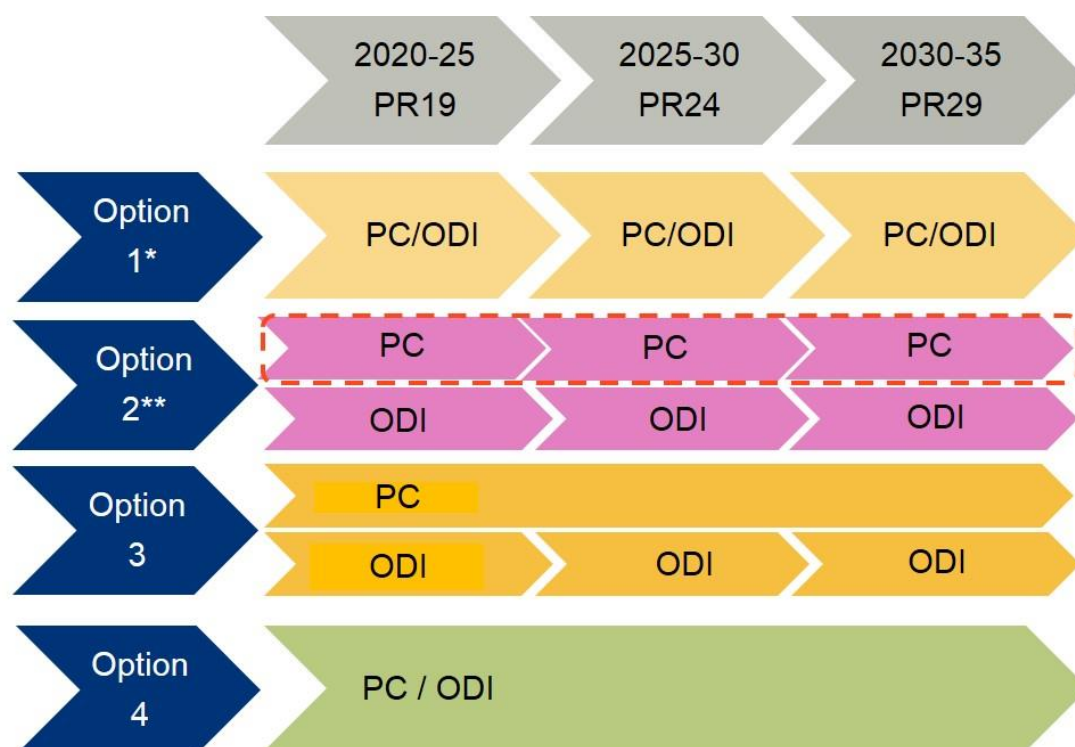
Option 1 is the approach we adopted at PR14 where five-year PCs and ODIs are set at each price review.

Option 2 involves five-year PCs and ODIs, with the addition that companies are transparent with their customers and other stakeholders about their longer-term performance plans. In option 2, the long-term PCs are forward projections and planning assumptions than firm commitments after the first five years.

Option 3 involves long-term PCs with five-year ODIs reset at each price review. In option 2, the long-term PCs are commitments with the default assumption that the PC will be maintained at subsequent price reviews.

Option 4 involves long-term PCs and ODIs, in this example 15 years.

Figure 4 Four long-term commitments options



* Existing PR14 approach

** Beyond five years, the PCs are aspirations/planning assumptions/projections

We recognise that different approaches can be applied to different PCs and that PCs already vary in several dimensions, such as financial versus reputational or annual versus five-year targets. The duration of the commitment could also vary.

Our preferred approach is that option 2 (long-term projections) should apply to all PCs at PR19. This will encourage companies to focus on the long term and support the emphasis we are putting on companies engaging with their customers on long-term issues. The approach builds on PR14, where most companies provided projections of their PCs for ten years. There might be instances where a long-term projection is not appropriate, but a company would need to explain why.

Under our preferred approach, we will also be open to considering proposals by companies for using Option 3 (long-term commitments with a default assumption they will remain unchanged) or Option 4 (long-term commitments and ODIs) in relation to some of their PCs. We expect companies to provide good evidence for their proposed approach, including from customer engagement. A company would need to deal with issues such as how the long-term commitment would address uncertainty around its future performance and its speed of improvement, perhaps by building a dynamic element into the long-term commitment.

Consultation questions: outcomes

Q1 What are your views on our preferred approach to long-term commitments?

2.5 The impacts of our decisions

Throughout this chapter, we have explained the benefits and costs of the options we have considered. This section summarises the impacts of customer engagement and outcomes decisions.

We have considered three high-level customer engagement and outcomes options:

- no change compared with PR14;
- enhanced customer engagement and outcomes; and
- negotiated settlements.

The diagram overleaf assesses these options against our Water 2020 objectives.

Figure 5 Options against objectives

	Preferred option		
	1 Do nothing	2 Enhanced engagement	3 Negotiated settlements
Achieving our objectives	The “do nothing” option does not strengthen the relationship between companies and their customers compared with PR14.	The enhanced engagement proposals should deepen and improve the relationship between companies and their customers. 	Negotiated settlements do not strengthen the direct relationship between companies and their customers as they create a new organisation which exists between companies and their customers. 
Addressing known problems	Remaining with the PR14 approach to customer engagement does not address known issues such as being clearer on the role of CCGs. 	The enhanced engagement proposal reflect feedback from the sector on the lessons to be learned from PR14 e.g. more clarity on the role of CCGs. 	Negotiated settlements could address some of the issues related to customer engagement at PR14, but would not address the need to strengthen the relationship between companies and their customers.
Practicality	Re-running the PR14 approach to customer engagement would likely be less time and resource intense than last time due to learning the lessons from PR14. 	Companies are generally forecasting a relatively modest increase in costs to implement the enhanced customer engagement proposals. 	It would be relatively time and resource intensive to set up a new approach to customer engagement using organisations to represent customers.

We have made policy decisions on customer engagement in this document, but most of the decisions on outcomes are not due to be made until later in the process. This section primarily reflects the impacts of our customer engagement policy for PR19, but it does also describe the likely impacts of our decisions up to now on outcomes.

The benefits to current and future customers of more robust business plans that more accurately reflect customer preferences are likely to be high and could reduce the need for regulatory interventions at PR19. Many stakeholders, including companies, raised views about relying too heavily on stated preference WTP at PR14 and our proposals for companies to rely on a more robust, balanced and proportionate evidence base should mean business plans more accurately reflect current and future customers needs and requirements.

It is difficult to quantify such benefits, but we can compare the costs of customer engagement with the expenditure to which it relates to understand the relative magnitudes of the numbers involved. The industry's totex allowed over five years at PR14 was £44 billion for England and Wales⁸. In aggregate, companies are planning to spend £21.1 million on customer engagement at PR19⁹. This implies that companies' customer engagement efforts would be net cost-beneficial if they improved the productive or allocative efficiency of their expenditure by more than £21.1 million, which is a 0.05% improvement. We think this is highly likely. For example, more robust information on customer preferences is likely to improve resource allocation. Similarly, by engaging with customers and stakeholders in a more continual, two-way basis, companies could learn about community-based approaches to achieving their PCs at lower cost, for example, targeted campaigns to reduce sewer blockages, reduce water demand or keep beaches clean. We are confident our customer engagement proposals will be beneficial in England and Wales.

We have also considered whether our proposals for improving the approach to customer engagement at PR19 will result in a disproportionate increase in costs. We asked companies for their estimates of their PR14 customer engagement costs and their forecasts for PR19 based on our proposals in the December consultation. At PR14, companies spent approximately £17.2 million on customer engagement; for PR19 they are forecasting this will increase to £21.1 million¹⁰, a 23% increase (if we exclude one company, it is a 10% increase). Overall, companies are forecasting an increase in these costs, but two companies forecast a fall and four companies forecast no change. For England, the costs are forecast to increase from £15.8 million to £19.7 million, a 25% increase (if we exclude one company, it is an 11% increase). For Wales, the costs are forecast to increase from £1.36 million to £1.39 million, a 2% increase. We do not consider this a disproportionate increase in costs given the expected benefits of the changes to customer engagement at PR19.

The benefits of improved customer engagement are hard to quantify, but the proposals we have outlined will benefit both current and future customers. The emphasis on companies drawing on a robust, balanced and proportionate evidence

⁸ We recognise that using the forecast for 2015-20 totex is only an approximation to a forecast for 2020-25 totex.

⁹ Generally these costs include engagement costs (surveys, focus groups, online panels, business plan testing, and so on), CCGs and internal staff costs. There are variations between companies on precisely what they have included in their estimates.

¹⁰ For five companies who did not provide a point value for their PR19 expected customer engagement costs, but who said they thought they were likely to increase, we assumed a 20% increase in costs.

base will help them develop a genuine understanding of their customers' needs, requirements and willingness to pay. This has the benefit that companies' plans and activities will better reflect customer preference and it will also build legitimacy and trust between customers and their companies. By putting less emphasis on the five-year regulatory cycle, our customer engagement proposals will allow for more focus on the long-term and resilience issues. They will also encourage companies to continually engage with customers and consider how they can involve them in the design and delivery of solutions. The benefits will be strengthened by companies adopting two-way communications that educate and inform customers.

Our policy on customer engagement also addresses some of the lessons learned from PR14, such as providing greater clarity about the role of CCGs, companies and Ofwat. This should allow CCGs to focus their attention on those areas of companies' plans over which they can have most influence. The increased use of comparative information will provide customers and CCGs with more evidence to robustly challenge companies about the ambition of their proposals.

In relation to outcomes, we will make most of our policy proposals in the November outcomes and the July 2017 methodology consultations. In relation to long-term commitments, our preferred approach is that companies should provide long-term aspirations for all their PCs at PR19. This will involve relatively few costs for companies, as our customer engagement policy already encourages them to engage with their customers on long-term issues and many companies made ten-year projections at PR14. However, there should be considerable benefits from companies focusing more on the long-term projections for their service commitments to their customers and facing challenges from their customers and CCGs on them.

We expect companies to submit their PC definitions ahead of business plans. This should have few cost implications for companies, especially as they can delay submission if a PC is new, innovative or requires extensive customer engagement. Ofwat having more time to review the detail of definitions (which can be difficult for customers to understand) will bring benefits for customers.

We are proposing a licence modification to allow all companies to have in-period ODIs. We think in-period ODIs will drive a greater focus on delivering performance commitments, as the rewards for doing so and penalties for not doing so will be more immediate. However, we propose engaging with stakeholders further on the precise design of the licence modification. This will include how we best secure the benefits we expect and reduce any possible costs arising from an annual reconciliation process and bill volatility.

We have also considered the distributional impact of our proposals. These customer engagement principles emphasise the need to understand and respond to the potentially distinct needs of different customers, including those in circumstances that make them vulnerable. We expect our proposals to have a positive impact on such customers, as their views might not have previously been known, sufficiently considered or taken into account as effectively as they could have been.

2.6 Summary of our decisions

We confirm our decisions to focus on current and future customers as follows.

- We will retain and build on the **focus on customer engagement and outcomes** at the next price review (PR19).
- We provide **clarity on the roles** that companies, CCGs and we have in delivering good quality customer engagement that drives decision-making.
- **Companies will** continue to be responsible for engaging directly with their customers and each company will have in place a CCG for PR19.
- To reflect our expectation that companies should aim to deliver a further improvement in the quality of their customer engagement at PR19, we have published a set of **principles for good quality customer engagement**.
- Our expectation that the quality of customer engagement should improve at PR19 will be reflected in the standards we apply to business plan quality in the **risk-based review** at PR19.
- **CCGs will** provide independent challenge to companies and independent assurance to us on: the quality of a company's customer engagement; and the extent to which this is reflected in business plans.
- **We will** inform, enable and encourage good quality customer engagement that puts customers at the heart of decision making. In keeping with our statutory duties and strategy, we will step in if required.
- We confirm our decision to **publish early indications** on the WACC and outcome RoRE ranges before business plans are submitted.
- We set out alternative options for **long-term PCs**, stating our preferred approach that “long-term aspirations” should apply to all PCs at PR19.
- We will propose a **licence modification** to allow all companies to have in-period ODIs.

3. Securing legitimacy of future price controls

3.1 Our decisions

- We will seek to change **revenue indexation** to the Consumer Price Index (CPI or CPIH) from the start of the 2019 price review (PR19) price control and to amend the licence conditions accordingly.
- We will change **regulatory capital value (RCV) indexation** to CPI (or CPIH). 50% of the RCV will be indexed to the Retail Price Index (RPI) at 1 April 2020. The rest of the RCV, including all new RCV, will be linked to CPI/H and so the proportion of RCV that is indexed to CPI/H will increase through 2020-25.
- We will confirm the final decision as to whether to use **CPI or CPIH** in the methodology for PR19. This will allow us to take account of developments in the use of CPI and CPIH including the advice of the Office for National Statistics (ONS) to the UK Statistics Authority (UKSA) on the status of CPIH as an official statistic.
- We will state a **single nominal cost of capital** – stated separately as real CPI/H-based and real RPI-based costs of capital – for the purpose of setting price limits.
- We will reconcile for the difference between the RPI and CPI/H forecast for setting price limits and the actual out-turn for RPI-linked cost of capital that applies to the RPI-linked part of the RCV. Together with a nominal cost of capital this will mean the change to indexation will be **net present value (NPV)-neutral** for a notionally efficient company.
- We have set out the **principles** we will apply when considering the transition of the indexation of the RCV beyond 2025 to make our intentions clear and predictable.
- We confirm that to the extent we use similar **cost assessment models** to PR14 at PR19, we will deflate the base cost data using the same measure of inflation we will apply for revenues.

3.2 Introduction

3.2.1 Overview

One main objective of economic regulation is to promote efficiency within the regulated companies. A key component of this is the efficient allocation of risk; in

particular to allocate risk to companies and their investors where they are best placed to manage it. Efficient allocation of risk ensures incentives can be targeted to allow companies to operate and finance themselves efficiently. This keeps costs down for customers now and over the long term.

Companies cannot control general inflation. They can control their own costs and they are exposed to this risk through price controls. If companies were exposed to general inflation risk, customers would pay a premium for the risk exposure and this would lessen the incentive on companies to reduce costs or manage risks more effectively.

Indexing our price controls to a measure of inflation is, therefore, a core part of our regulatory approach to promote efficiency. Currently:

- the measure we use is the Retail Price Index (RPI) which was the dominant measure when the companies were privatised in 1989 and when we began to set price controls in 1994;
- both wholesale revenue controls and the nominal value of the RCV are indexed annually. Indexation of company revenues allows customer bills to vary by reference to movements in general inflation. Indexation of the RCV reflects changes in asset values over time, which recognises that inflation can erode the value of any new investment, which in turn would understate the true economic cost of providing services with long-lived assets – such as water and wastewater services; and
- we embed a view of inflation when determining the real weighted average cost of capital (WACC). This means that the regulated rate of return reflects only the real cost of capital.

In this chapter we set out our approach for the indexation of the wholesale price controls at PR19. We will apply a consistent approach to indexation across the network plus and the sludge and water resources controls where we are taking steps to enable markets to develop. We will consider the issues associated with the retail price controls, including how inflationary pressures should be addressed, in the methodology consultation for the PR19 price review.

3.2.2 Our longer-term vision

Indexation of wholesale price controls will continue to be an important mechanism for addressing risk over the long term. As costs associated with movement in general inflation are passed to customers, it is important the inflation measure we use is

credible and statistically robust in the eyes of customers and their representatives. This will help maintain trust and confidence in the regulatory regime.

Indexation is important to both debt and equity investors. Some investors are attracted to the water and wastewater services by their risk profile (particularly in relation to wholesale activities); others by an inflation hedge (especially where they have inflation-linked liabilities). Some may seek a hedge to RPI specifically. Where changes are made to the way we regulate, it is important to maintain investor confidence, as this results in an efficient cost of capital, allowing customers to benefit from lower bills.

RPI was chosen as the indexation mechanism at privatisation, as it was the primary measure of inflation at the time. However, RPI is increasingly falling out of use. CPI is used as the inflation target by the Bank of England. The media refers to CPI when reporting inflation movements and CPI is increasingly used as the inflation measure in the pensions sector; we provide further evidence on this in Appendix 1.

Since March 2013, RPI has no longer been classified as an official government statistic. The legitimacy and robustness of RPI has been called into question in recent years. In January 2015, Paul Johnson stated in '[UK consumer price statistics: a review](#)' for the UK Statistics Authority (UKSA):

“RPI is a flawed statistical measure of inflation ... taxes, benefits and regulated prices should not be linked to RPI ... government and regulators should work towards ending the use of the RPI as soon as practicable”.

The legitimacy of RPI as a measure of inflation has been called into question. The formulae that underpins RPI (the Carli method) is upwardly biased and is used by very few countries in calculating their official inflation measures. The use of CPI by government, other regulators and in the pensions sector has increased, and is expected to increase. Our longer-term vision is to make sure the measure we use for the indexation of price controls is widely agreed to be legitimate in the eyes of all stakeholders, including customers.

3.2.3 Challenges and opportunities

We are looking to secure the long-term legitimacy of the price controls. For price controls to remain legitimate, the measure of inflation used must also be legitimate. This means that the measure used needs to be recognised and accepted by customers and their representatives. It means that the inflation measure that

underpins the regulatory regime must be statistically robust to maintain the credibility of the regulatory regime. Maintaining legitimacy and credibility in turn ensures the water and wastewater sectors are able to obtain efficient finance which in turn benefits customers through an efficient cost of capital.

We have looked at all of the areas where indexation is applied in price controls, including indexation of customer bills (through company revenues), the RCV and in determining the cost of capital and cost assessment. To maintain legitimacy for customers and to promote a consistent regulatory approach, it is our judgement that, in principle, all the areas of a price control where indexation is applied should use the same index. This means that where it is appropriate to change the inflation index that is applied, we should do this as fast as is practicable.

Indexing different elements of the price control to different indices would expose companies and their investors to an ongoing wedge between those different indices. This exposes companies to a potential risk that the actual difference between the indices is different to that which was forecast in setting price limits. While such exposure can be addressed through regulatory reconciliation mechanisms, this makes the regulatory regime more complex. If put in place on an ongoing rather than a transitional basis, it could potentially affect the trust and confidence and credibility of the regime.

The inflation metric that is applied to wholesale revenues is set out in the licence and so licence amendments are necessary if company revenues, and so company bills, are to be linked to an index other than RPI. The RCV is not referenced in company licences. The inflation metric that is applied to it is determined and underpinned by the methodology applied at price reviews. The strong regulatory commitment perceived by stakeholders in the RCV and its indexation through the price review methodology demonstrates that commitment to the indexation of the RCV does not need to be delivered through the licence.

In line with our vision of trust and confidence in water and wastewater services, we recognise that continued investor confidence is key as the sector will continue to require significant investment to deliver resilient services. We see a managed transition – which provides clarity on the direction of travel – as key to maintaining the confidence of investors, by providing time to adjust to allow the unwinding of embedded RPI-based debt over time and to ensure customer impacts can be managed.

We are taking action to start a transition now; this will avoid the need for sudden changes in the future. We recognise we need to be as clear as possible about each

stage of transition and to address this we provide a set of principles we will apply when determining the transition beyond 2020-25.

3.2.4 Our position and next steps

We have engaged extensively with stakeholders on this important issue, including through our July 2015 [policy discussion paper](#) and our December 2015 consultation¹¹. Our final decisions are the culmination of this constructive engagement.

We now want to start a managed transition away from RPI: one which provides certainty about how we will handle indexation for PR19, and which makes things clear and predictable as possible for the longer term.

The indexation method for company revenues is set out in company licences, so we need to modify these licences. The modifications need to be concluded in time for companies to draft their business plans.

3.3 Indexation of wholesale price controls

3.3.1 Our December consultation

In our December consultation, we proposed:

- to switch the indexation of company revenues for the wholesale price controls to CPI/H¹² from 1 April 2020;
- to transition the RCV from RPI to CPI/H from the start of the PR19 price control, with the RCV indexed to RPI as at 1 April 2020. The rest of the RCV, including all new RCV, would be indexed to CPI/H;
- a single nominal cost of capital for the next control period, with the real cost of capital stated separately for the RPI- and CPI/H-linked RCV;

¹¹ We have also signalled previously, for example in PR14, that we would consider the appropriate indexation measure for PR19 – see, for example, the investor conference call on the PR14 Final Determinations (December 2014).

¹² In this document we use CPI/H to refer to CPI or CPIH unless we need to draw a distinction.

- to reconcile for out-turn differences between forecast and actual RPI and CPI/H for the RPI-related elements of the control. This would mean the change to indexation will be NPV-neutral for a notionally efficient company;
- allowing companies, if supported by their customers, to propose the use of the RCV run-off or pay as you go (PAYG) financial levers to smooth the impact of a move to CPI/H indexation on customer bill profiles; and
- a preference for a move from RPI to CPI, rather than CPIH (subject to final UKSA recommendations).

We set out that switching company revenues to CPI/H would require a licence modification. All other changes would be addressed in the methodology for the price review.

3.3.2 Responses to our December consultation

We received extensive responses on the indexation issue, representing a wide range of views. In some instances, consultancy reports were commissioned that considered the issue of indexation, including a report by KPMG for United Utilities and a report by NERA for WaterUK. We welcome the scrutiny applied to our proposals, and the extensive and constructive engagement we have had with stakeholders since we published our consultation.

There was broad support for our revenue indexation proposals. The majority of respondents accepted the need for change. There is recognition that there are issues with RPI in terms of statistical robustness. Stakeholders also recognise that customer legitimacy stands to suffer if bills continue to be indexed by this flawed measure.

On RCV indexation, while there was support for a transition, most stakeholders raised issues with the speed we proposed. Several respondents proposed alternative transition speeds. A few disagreed with any change to RCV indexation for the next price control.

One party supported the proposals and expressed disappointment that we had not proposed a full and immediate switch to CPI/H for indexing the RCV.

We summarise in the following sections the range of issues set out by respondents to our consultation. These relate to comments raised by all respondents to the companies we regulate in both England and Wales.

Uncertainty associated with the status of CPIH

One respondent urged caution on any transition in indexation in the absence of a stable consensus on the best long-term measure of inflation.

Cost correlations

One company respondent explicitly suggested that their costs are more closely linked to RPI than CPI. They argued that this is due in part to RPI-linked contracts, which could be replaced with CPI-linked contracts on renewal. They noted that staff costs have also historically been more aligned with RPI, partly because this has been the figure used in salary negotiations.

Impact on customers

Respondents set out views about:

- the immediate effect of a change in RCV indexation on bill profiles, in the absence of any mitigation action;
- the increased complexity of company engagement with customers and reduced transparency to customers about topics of RCV indexation and the use of financeability levers; and
- the need to pass on the costs of additional financing costs to customers, if the transition is to be value-neutral for companies.

Some stakeholders also suggested that customer acceptability can be achieved by changing only revenue indexation away from RPI, as customers do not have visibility of the indexation of the RCV.

Use of the PAYG and RCV run-off levers

Respondents set out views that:

- PAYG and RCV run-off were not designed to mitigate effects on bill profiles, and using them to smooth bill impacts associated with a transition to CPI/H decreases regulatory transparency;
- it is unclear how credit rating agencies will view such use of these tools;
- the use of financial levers in effect reprofiles bills back to RPI, undermining the original intent;
- the use of these tools conflates the traditional concepts of operating and capital expenditure (even within a totex approach);
- constraints were imposed on companies' use of PAYG at the 2014 price review (PR14);
- the use of these tools could be perceived as perpetually deferring revenue; and

- use of such tools could be affected by any uncertainty about future RCV protection.

Impact on financing and refinancing costs

Respondents set out views that:

- a mismatch between existing RPI-linked debt and revenue based on CPI/H-linked RCV for PR19 could increase risk;
- even if there is no immediate impact for PR19, uncertainty about the longer-term approach (for example, RPI:CPI/H ratios for RCV indexation at PR24 and beyond) means exposure to a mismatch could arise in future;
- the absence of a deep and liquid CPI/H-linked debt market would make it more expensive to issue CPI/H-linked debt or hedging instruments;
- the Debt Management Office has not issued any CPI/H debt, which some respondents considered necessary for investors to have confidence that an efficient market will develop to support a transition to CPI/H indexation;
- companies with long-term RPI-linked debt profiles would not be able to make use of such a debt market, even if it is efficient, as exiting their debt arrangements would be prohibitively expensive;
- companies could incur refinancing costs or need to enter into expensive CPI-based hedging arrangements, the cost of which could potentially be passed on to customers;
- depending on companies' capital structures, gearing could increase as a result of the change, as the RCV would increase by CPI/H, while RPI-linked debt would increase by RPI. This would have a detrimental effect on companies' interest cover ratios, credit rating quality and ability to raise finance;
- any perceived increase in risk would have an effect on the cost of capital that would be detrimental to customers; and
- the proposals disadvantage some companies and that the overall methodology should recognise individual company circumstances.

Some stakeholders also argued that debt and equity investments were made on the assumption that revenues and RCV would continue to be linked to RPI in the future. They suggested that a transition would undermine this and have a retrospective impact on past investment decisions.

One investor specifically noted that the majority of the underlying capital it invested in the industry was from pension portfolios, which are looking for long-term investments to match against long-term liabilities. The investor noted that the majority of these liabilities are explicitly linked to RPI for UK schemes and as a result

there has been substantial appetite for long-dated investment-grade RPI-linked paper which the sector has been able to provide.

Reconciliation adjustment

Respondents expressed views about our ability and willingness to commit to the reconciliation adjustment being NPV-neutral, suggesting that:

- even if our commitment is genuine, pressure on us to keep bills down could lead to undue downward pressure on cost allowances or cost of capital calculations;
- we cannot commit to this in the longer term, as future price control determinations will ultimately be down to our discretion at that time;
- it is unclear how any proposed reconciliation mechanism (to correct for the difference between the forecast and actual difference between RPI and CPI/H for the RPI-linked part of the RCV) would work in practice;
- even if we can maintain revenue neutrality, value neutrality to the company may be compromised if any of the costs caused by the changes cannot be passed onto customers;
- the reconciliation mechanism would not protect against basis risk in-period; and
- the reconciliation could introduce additional bill volatility, which could undermine the initial rationale for the change.

One respondent suggested that the debate is a red herring; as long as the policy is NPV-neutral to maintain investor confidence, PAYG could be used to alter cash flows to suit company balance sheet structures.

Some respondents asked if our commitment to NPV-neutrality was to the notional or the actual company structure.

Several stakeholders suggested ways we could demonstrate our commitment to NPV-neutrality. These included:

- publishing a full model of the reconciliation mechanism;
- setting out the transition rate for full indexation of the RCV to CPI/H across multiple price control periods; and
- codifying our commitment to NPV-neutrality in licences.

Speed of transition

Respondents suggested that most points raised about our preferred consultation option could be mitigated or addressed by slowing down the speed of transition or abandoning the changes to RCV indexation altogether. However, some points raised

about our commitment to an NPV-neutral reconciliation adjustment for the portion of the RCV that is linked to RPI were independent of the speed of transition.

Most respondents who commented on our indexation proposals put forward alternative proposals, including the following.

1. **Maintain RPI indexation for all of the RCV.** As RCV indexation is a technical, regulatory concept – less obviously customer-facing than revenue indexation – it may be possible to exclude the RCV from any changes to our approach to indexation, at least for PR19. Some stakeholders felt this option addressed issues about the legitimacy of RPI.
2. **Link ‘new’ RCV to CPI/H.** RCV that existed at the start of the PR19 price control would remain linked to RPI and depreciate over time, with companies in control of the speed of transition through the use of run-off rates. All new RCV would be linked to CPI/H. A paper prepared by Anglian Water in the [marketplace of ideas](#) sets out further detail on this option. Most company respondents and stakeholders endorsed this approach.
3. **Alternative CPI/H:RPI proportions.** One suggestion was to commence the transition based on a CPI/H:RPI ratio of 33:67 or 25:75 based on the view that the RPI-linked debt market took several years to develop. Another was to use a 25:75 ratio at PR19 and transition to 50:50 at PR24, 75:25 at PR29, and 100:0 at PR34.
4. **Individual company CPI/H:RPI proportions.** One party suggested that companies should propose what proportion of their RCV will be indexed to CPI/H as part of their business plan.
5. **Full and immediate switch to CPI/H for RCV indexation.** One stakeholder expressed this preference in their response to the consultation.

In addition to the comments above, some respondents asked if the specific proportion of the RCV that is linked CPI/H was intended to be a fixed ratio across the five years of the price control in our preferred consultation option.

Where respondents raised objections to the preferred speed of transition in our consultation, no evidence was presented to suggest why the notional equity proportion of the RCV should not be indexed to CPI/H. Stakeholders did raise this issue at the industry workshop in March, where it was suggested some equity investors are attracted to the sector specifically for its linkage to RPI rather than any other inflation index. However, other stakeholders suggested that equity investors are attracted to index-linked returns but not necessarily a specific index.

3.3.3 Developments since we published our consultation

Since we published the consultation, we have engaged with many stakeholders including customer groups, companies and investors through bilateral meetings, investor roundtables and industry workshops. We also requested information from companies about RPI-linked hedging arrangements, to help validate the assumptions on which our December proposals were based. This engagement has been extremely valuable and we appreciate the extensive time, effort and attention dedicated to this by stakeholders.

The following developments have also occurred since we published our consultation.

- In March 2016, the UKSA published its '[Assessment of compliance with the Code of Practice for Official Statistics](#)', which set out its expectations for the ONS for the future development of CPIH: to establish credibility and user confidence in the accuracy of CPIH as a pre-requisite to reinstating CPIH's National Statistics status. The National Statistician subsequently [wrote to the Chair of the UK Statistics Authority](#) (UKSA) and stated that he was "inclined to consider that CPIH should become the ONS preferred measure of consumer inflation and the focal point of ONS commentary in due course".
- In May 2016, the ONS published a draft of the [first edition of an Economic Statistics and Analysis Strategy \(ESAS\)](#), to prioritise and guide ONS's work on economic statistics. In terms of priorities and timetable for the measurement of prices, the ONS states that: "ONS will address the recommendations raised in the UK Statistics Authority Assessment Report on CPIH and take the actions needed for CPIH to regain its National Statistics status." It confirmed this work will take place during the summer of 2019.
- It was announced in the 2016 Budget that business rates would be indexed to CPI rather than RPI from April 2020.
- The UK Regulators Network (UKRN) published '[Inflation measures in economic regulation](#)', an information paper including an explanation of the use of indexation in regulated sectors. This is evidence of the increasing interest of regulators on CPI/H.
- [Ofgem confirmed](#) it would not move to CPIH for the purposes of the Offshore Transmission Owner (OFTO) regime or for the indexation of wholesale price controls at this stage. However, it did indicate it will issue further guidance on this issue for its price controls under the RIIO regime as developments associated with inflation progress.

We commissioned Oxera to investigate the potential benefits and costs of different options for change. We published Oxera's report, '[Indexation of future price controls in the water sector](#)', in April 2016.

We held an industry workshop in March 2016 where Oxera presented the emerging findings of its report. We presented an [illustrative model](#) to demonstrate how the reconciliation calculations for the forecast and actual difference between RPI and CPI/H for the RPI-linked part of the RCV could work in practice. Responding to the request for further clarification from stakeholders, we also confirmed, and demonstrated through the model, that the proportion of RCV linked to RPI and CPI/H was not fixed across the five years. The model demonstrated that 50% of the RCV was linked to RPI from 1 April 2020 and that all other RCV, including new RCV, is linked to CPI/H.

3.4 Our policy decisions on the indexation of wholesale price controls

We have carried out our assessment with careful consideration of our duties. Our assessment has evolved in light of consultation responses, stakeholder conversations and additional evidence. We have revisited the assumptions, arguments and considerations that informed our original proposals, including proposals for a faster transition of the RCV to CPI/H than the preferred option we set out in December.

3.4.1 Our policy decision on whether to change the inflation measure for future wholesale price controls

We confirm **we will move to change the indexation of revenues and transition the RCV from RPI to CPI/H from 1 April 2020**. This is necessary to maintain the legitimacy of the price controls and the credibility of the regulatory regime. We will **determine whether to adopt CPI or CPIH when we publish the PR19 methodology statement**. This is due to the current uncertainty associated with the status of CPIH as a future national statistic. We also confirm that to the extent we use similar cost models to PR14 at PR19, we would expect to deflate the base cost data using the same inflation index as for revenues.

As set out in Sections 3.2.2 and 3.3.3, there is a clear direction of travel away from the use of RPI. As an inflationary measure, RPI is statistically flawed and the Johnson review called for government and regulators to work towards ending the use of the RPI as soon as practicable. Furthermore, CPI is in use as the inflation target and pension funds are increasingly adopting CPI as the inflationary measure. RPI is likely to become less and less acceptable throughout the wider community and economy. It is losing its legitimacy, not least in the eyes of customers, who

generally see reference to CPI – for example, where they see inflation measures or forecasts in the media.

Maintaining the legitimacy and credibility of the regulatory regime through the use of a legitimate inflation metric applies to both the indexation of revenues and RCV. As the indexation of the RCV flows through company revenues (through both depreciation and returns), the choice of inflation measure for the RCV has a direct impact on customer bills. For this reason there is a strong case for applying the change of indexation to the RCV, which should not be disregarded because the indexation of RCV is less visible to customers than the indexation of revenues. Also, there are benefits associated with ensuring the consistent application of inflation where it is applied throughout the price controls, as this reduces complexity and removes any potential risk to companies associated with exposure to actual and forecast differences between inflation indices used.

There is a benefit to both customers and investors associated with a switch to CPI/H. This is because both CPI and CPIH are less volatile measures of inflation than RPI (as illustrated in Table 1). A switch to CPI/H improves the predictability of nominal bills for customers. For investors, Oxera found that switching the indexation of RCV to CPI/H could reduce the volatility of firm value by increasing the alignment with a firm's nominal debt; Moody's¹³ also noted that since most companies have more nominal than RPI-linked debt, the relationship between revenues and total interest expense could improve, reducing the volatility of the funds from operations and earnings financial measures.

Table 5: Historical volatility of inflation measures 2006-15

	RPI	CPI	CPIH
Standard deviation	1.7%	1.2%	1.0%
Standard deviation/ mean	0.57	0.49	0.43
Range	7.2%	5.4%	4.5%
Range/mean	2.33	2.14	1.92

Source: [Oxera](#)

We acknowledge there is the possibility of a mismatch between RCV growth and debt liabilities for companies as a result of a switch to CPI/H. There are also potential

¹³ 'Transition to CPI creates risks for water and energy networks', Moody's, 2016.

impacts on customer bills arising from a change to the indexation of the RCV. These are issues which need to be addressed in considering the transitional arrangements and we discuss these issues in Section 3.4.2.

Given the current uncertainty around the future status of CPIH, we do not think it appropriate to confirm, at this stage, whether the measure of inflation we should use from 1 April 2020 should be CPI or CPIH. We will consult on this in the consultation on the PR19 methodology in 2017, which will allow us to take into account the advice of the National Statistician to the UKSA on the status of CPIH and any other developments that are relevant to the choice between CPI and CPIH. We discussed this issue at an industry workshop in March, where it was recognised there is a need for flexibility on the choice between CPI and CPIH.

The change to the indexation of the revenue component of wholesale price controls will require an amendment to company licences. The licence modification will need to provide flexibility so that a final decision between CPI and CPIH indexation can be made when we set the methodology for PR19.

The further work that Oxera carried out for us on whether a move from RPI to CPI/H indexation should better reflect water companies' **totex costs** concluded that there is not a stronger link between RPI and companies' cost movements compared with CPI or CPIH. From an operational risk perspective, this suggests there is no clear cost or benefit to the industry or customers from moving away from RPI. However, we note there is circularity between the choice of inflation index and how costs move over time.

Switching price controls to a CPI/H basis is likely to incentivise companies to switch existing RPI-linked totex contracts to a CPI/H basis when they expire. This will help to secure the continued legitimacy and credibility of the regime. Additionally, indexation of costs borne by the companies may continue to be impacted by other factors – for example, it was announced in the 2016 Budget that business rates would be indexed to CPI rather than RPI from April 2020.

Switching revenues to CPI/H would mean our cost assessment would also need to be made by reference to CPI/H. This does not introduce any greater complexity or risk around assessment of efficient costs. For example, companies have indicated they develop their business plan forecasts in nominal terms using a variety of cost inflation forecasts. Business plan costs would then be deflated to real terms using forecasts of the inflation index consistent with that used for revenue inflation. We note that, as panel data series used for cost modelling can stretch back approximately ten years with capital expenditure smoothing, we will also need to take account of the availability of consistent price index information over this period.

3.4.2 Transition of the indexation of the RCV

We have decided that **we will take a transitional approach to moving RCV indexation to CPI/H**. Our decision recognises the importance of long-term financing and, in particular, the role of embedded long-term debt, which has been a feature of our cost of capital assessment in previous price reviews. It also recognises the issues around the potential short to medium-term bill impact of an immediate switch to CPI/H for RCV indexation.

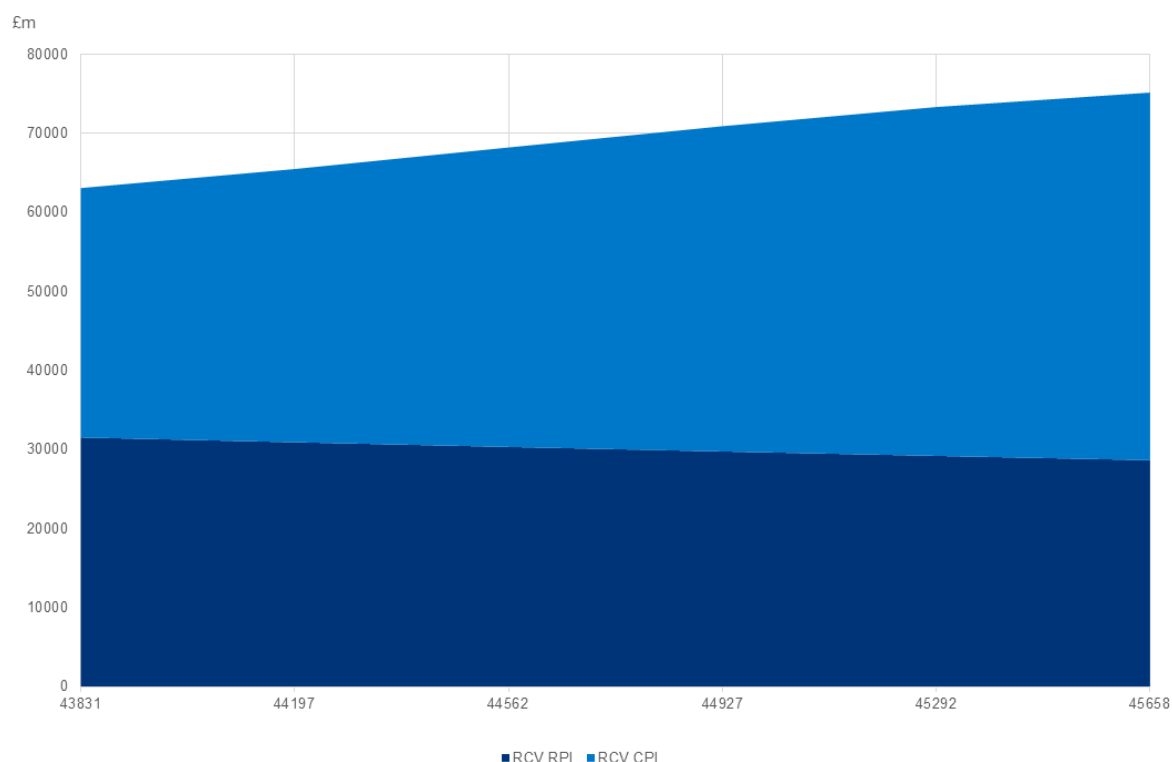
There are factors that support a fast transition. For example, Oxera concluded that from an operational and financial risk perspective (for the industry on average), there is no strong rationale for taking a phased approach to transitioning the indexation of the RCV to CPI/H and so it is possible to implement an immediate and full switch to CPI/H at PR19. A faster transition provides benefits as it secures the legitimacy of the regime and ensures customers and companies benefit sooner from the transition to a less volatile index.

However, our decision on the transition to CPI/H recognises the importance of maintaining the trust and confidence of investors and allows for a planned transition for existing debt. A rapid change to CPI/H might increase the perception of risk to investors. If reflected in the cost of capital demanded by customers, this would have bill implications for customers. Even a modest increase in the cost of capital may have a material impact on bills. On the other hand, a slow transition would not be justified as it maintains the use of a discredited inflationary index into the long term and so impacts on the legitimacy of the price control.

The proportion of RCV to be linked to CPI/H at 1 April 2020

We will index 50% of the RCV as at 1 April 2020 to RPI. The rest of the RCV, including all new RCV, will be indexed to CPI/H. We illustrate the proposed transition in Figure 1.

Figure 6: Illustrative transition based on 50% of the RCV linked to RPI at 1 April 2020 and the rest of the RCV, including all new RCV, indexed to CPI/H



Our decision is anchored to the proportion of embedded debt that is assessed to be in the notional capital structure we assumed for setting price limits at PR14. This assumed a notional gearing of 62.5% and embedded debt of 75%¹⁴. This approach recognises there is a case for allowing the unwinding over time of embedded debt that was raised when the RCV was fully linked to RPI. It also recognises there is no clear reason that either the equity or the new RCV portions of the RCV should be linked to RPI.

The transition we have set out is based on our assessment for a notional company. This is because we set price limits by reference to a notional efficient financed company and it is not in the customer interest that the speed of transition should be determined by the financing decisions of highly geared companies. While our decision has been made on the basis of the notional efficient financial structure, the proportion of the RCV that remains indexed to RPI is more than the sector average

¹⁴ We have rounded the actual calculation of 47% of the notional capital structure related to embedded debt to 50%.

of 35% on a weighted basis (or 46% on an unweighted basis¹⁵) of the RCV that is linked to index-linked debt (including the effect of RPI hedging instruments). We comment further on the impact of our decisions on company actual structures in the section 'The financial impacts of the transition'.

In reaching our conclusions, we have considered the merits of the range of transition proposals put forward in consultation responses. We have reconsidered the faster options we had set out in our consultation and the work carried out by Oxera, which considered the impact of alternative options on enterprise value. We have evaluated each of these options against our transition option to reach our final decision on a transition that is as fast as practicable.

In evaluating the alternative options, we have considered **the role of equity** in the transition of the RCV. Where respondents objected to the proposed speed of transition, no evidence was presented to suggest why notional equity (which amounted to 37.5% of the RCV in the notional balance sheet at PR14) should not be indexed to CPI/H. We raised this issue in discussion with companies during and after the consultation period. We have not received any compelling evidence that the RPI linkage necessarily needs to be maintained for the notional equity component of the RCV. Furthermore, Oxera suggested there is little evidence that there is a large group of equity investors who specifically prefer RPI to another inflation measure.

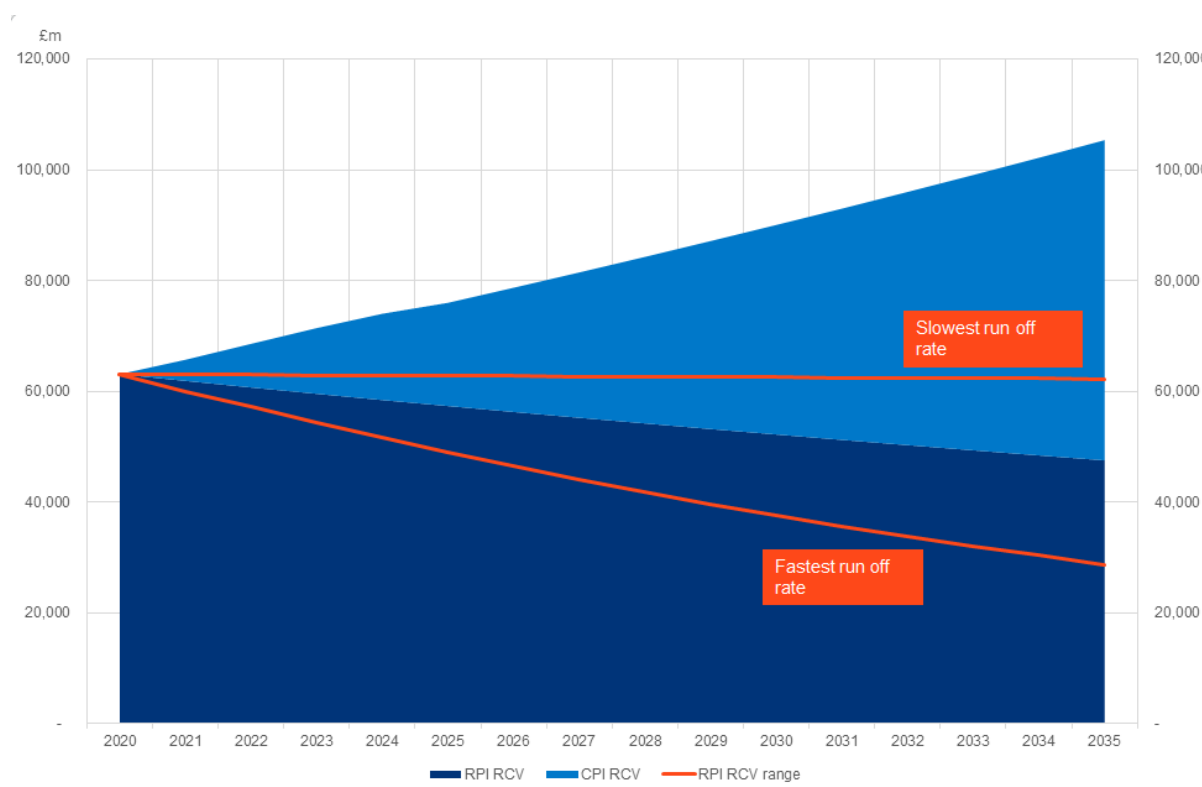
An approach supported by several stakeholders was to link **'new' RCV** to CPI/H. This approach allows for bill impacts to be managed. It may also act to reduce the perception of regulatory risk as, by maintaining RPI indexation for existing RCV at the start of the PR19 price control, investors would be protected from any subsequent regulatory decision on the inflation index that may impact on their investment. While we understand the arguments, it does not achieve a transition that is as fast as practicable.

Under this approach, the transition would occur over the very long term. Depending on a company's investment profile and the level of RPI, a significant proportion of the RCV could remain linked to RPI in the long term. This is illustrated in Figure 2, where by 2035, only 55% of the RCV would be indexed by CPI/H (using average industry data) and it would take around 60 years for a transition of 95% of the RCV to CPI/H. Given the flawed and upwardly biased nature of RPI and the need to maintain

¹⁵ On a weighted basis, the average as at 31 March 2015 was 34% for WaSCs and 52% for WoCs. On an unweighted basis, the average proportion of RCV financed by index-linked debt, including the effect of swaps, was 34% for WaSCs, 60% for WoCs and 46% for the sector on an unweighted basis as at 31 March 2015.

legitimacy as a result of the inflation index applied, there are benefits associated with a faster transition.

Figure 7: RCV transition based on new RCV from 2020 indexed to CPI/H and different assumptions about RCV run-off



The chart is based on the projected RCV in 2020 and totex levels projected forward using AMP6 levels. All totex additions have been added to the CPI RCV balance. Run-off rates are based on the industry average, minimum and maximum for AMP6. CPI is assumed to be 2.0%, RPI 2.8%.

We considered the option where the proportion of the RCV that is indexed by CPI/H is a **company choice** as part of their business plan submission. While this option could be considered consistent with our regulatory objective of companies owning their business plans, it runs counter to the notional approach we take to capital structure and is unlikely to meet the Johnson review recommendation that regulators should consider a transition as soon as practicable.

- Company choices on the speed of transition would be influenced by their own financial structure, rather than the notionally efficient financial structure on which price limits are based. This passes at least some of the risk of company financing decisions onto customers and reduces the benefits to customers of a faster transition.
- Other regulatory instruments, such as totex menus that offer companies a choice, incorporate an incentive to take account of customer interest. In the case of

company choices around inflation index, there would not be any incentive to align with best interests of customers.

- We have not seen a strong argument to support the view that the equity part of the RCV should not be linked to CPI/H. However, the evidence from the responses to our consultation provides little evidence that companies would choose a start point that encompassed the equity component of the RCV. If the decision on the speed of transition were left wholly to the companies, the starting point of the transition might not include the switch of the equity component of the RCV to CPI/H and so some customers may not receive the full benefits of an early transition.
- On the basis of the evidence presented in response to our consultation, it appears likely that companies would choose a slow transition that would take many price controls to unwind, reducing the benefits to customers or potentially requiring us to intervene to introduce a faster transition at a future date.
- If each company selects its own speed of transitions, this would mean different proportions of the RCV linked to RPI and imply different levels of blended real cost of capital, reflecting the different proportion of RCV linked to CPI/H. This may reduce comparability between companies and increase complexity to stakeholders.

We have considered **alternative opening positions** for the proportion of RCV that is linked to CPI/H at 1 April 2020. We have considered the suggestions put forward that 25% or 33% of the RCV should be linked to CPI/H, which were based on the development of the index-linked debt market. There is no obvious rationale for the use of these starting points, which will involve greater risk around the legitimacy of the price control than our preferred option. These options represent an opening position where the element of RCV that is linked to CPI/H is even less than the notional equity component of the RCV (37.5%). Furthermore, the evidence in the Oxa report sets out that the development of a CPI/H linked debt market is not necessary to transition the RCV to CPI/H.

We have also considered **options that confirm the speed of transition beyond PR19**, including the use of a 25:75 CPI/H:RPI ratio at PR19, followed by a transition to 50:50 at PR24, 75:25 at PR29, and 100:0 at PR34. We recognise the importance companies and investors place on clarity about the speed of transition at PR24 and beyond, and this option puts companies in control of the speed of transition beyond 2020-25. However, there are also disadvantages associated with making decisions now about the future speed of transition, not least because embedding the decision now would not take account of future developments. We address this in further detail in Section 3.5, where we set out our approach to adopting a set of principles for considering the speed of transition in future price controls.

We have reconsidered **options for a faster transition**. These included (i) switching all of RCV to CPI/H indexation at 1 April 2020 and (ii) a transition starting at 15% of RCV linked to RPI on 1 April 2020, which was consistent with the proportion of index-linked debt in the notional balance sheet that was assumed for the purposes of assessing financeability at PR14. These two options would deliver a faster transition than our preferred option, however, they would also have greater transitional impact on customer bills and could risk increasing the perception of regulatory risk among investors.

In reaching our conclusions on the speed of transition, we have considered the analysis carried out by Oxera, which assessed the potential impact of the different transition options. Oxera concluded there is unlikely to be a material, robustly quantifiable impact on the industry's risk (and hence financing costs) under any of the options for change it considered, including our proposed transition and the options favoured by respondents to our consultation.

In reaching its conclusion, Oxera modelled the volatility of the enterprise value experienced due to deviations in the out-turn RPI and CPI, relative to forecast. Oxera found that inflation uncertainty drives only a small proportion of the overall volatility of firm value. Oxera found that, for any of the transition options it considered, transition of the RCV does not increase this volatility and suggested that, if anything, nominal volatility is reduced in almost all cases. This is because CPI is a less volatile measure of inflation than RPI, and therefore a switch to CPI reduces the volatility of firm value by increasing the alignment with the firm's nominal debt. Oxera concluded that the volatility of the major components of firm value (the present value of net operating cash flows and the present value of closing RCV) is reduced if CPI is used to index revenues and some of the RCV, even for financing structures that include a substantial proportion of RPI-linked debt.

For companies with large proportions of RPI-linked liabilities, Oxera noted there is a mismatch between how these components of value move and the value of RPI-linked liabilities if RPI and CPI do not move in exactly the same way. This will act to offset the benefit of the reduction in volatility introduced by CPI/H indexation which is more closely matched to nominal debt. However, Oxera found that unless the proportion of RPI-linked liabilities is very material (that is, as high as 62.5% of the RCV) and all of the RCV indexation is switched to CPI, the net impact is still a reduction in risk, even accounting for the mismatch. Oxera stated that even in cases

with high proportion of RCV linked to RPI, the impact on firm volatility from full switch to CPI is modest¹⁶.

We acknowledge the view expressed by several stakeholders that an efficient debt market is a prerequisite for a switch to the indexation of the RCV, as this would be needed both for re-financing purposes and for issuing new CPI/H-linked debt. However, we make no assumption that companies need to issue CPI/H-linked debt to manage financing risk. This is supported by the Oxera analysis, which found that a transition to CPI/H does not increase risk to company financing, even where RPI-linked debt is used. Oxera stated that, although there was an RPI-linked government debt market when RPI-X price controls were introduced, the RPI-linked corporate debt market was insignificant. So the original inflation indexation of revenues and the RCV was not motivated by a desire to accommodate particular financing options. Furthermore, Oxera noted there is no evidence to suggest there should be any changes to the financing costs under any of the transition options it considered.

It is important to stress that the transition does not require a notionally efficient company to refinance any existing debt. Similarly, in reaching its conclusions on risk, Oxera stated there was no assumption that existing RPI-linked debt needs to be refinanced as a result of any change.

We have reconsidered the merits of all transition options. We recognise there are merits in pursuing a faster transition than proposed in our consultation and it would be possible to argue that a faster transition is reasonable. But we recognise that we must balance the potential for increased perceptions of regulatory risk and the potential bill impacts against the need to transition the RCV to CPI/H as soon as is practicable. We have taken these considerations into account in reaching our judgement on the transition of the RCV.

The use of financial levers to mitigate bill impacts

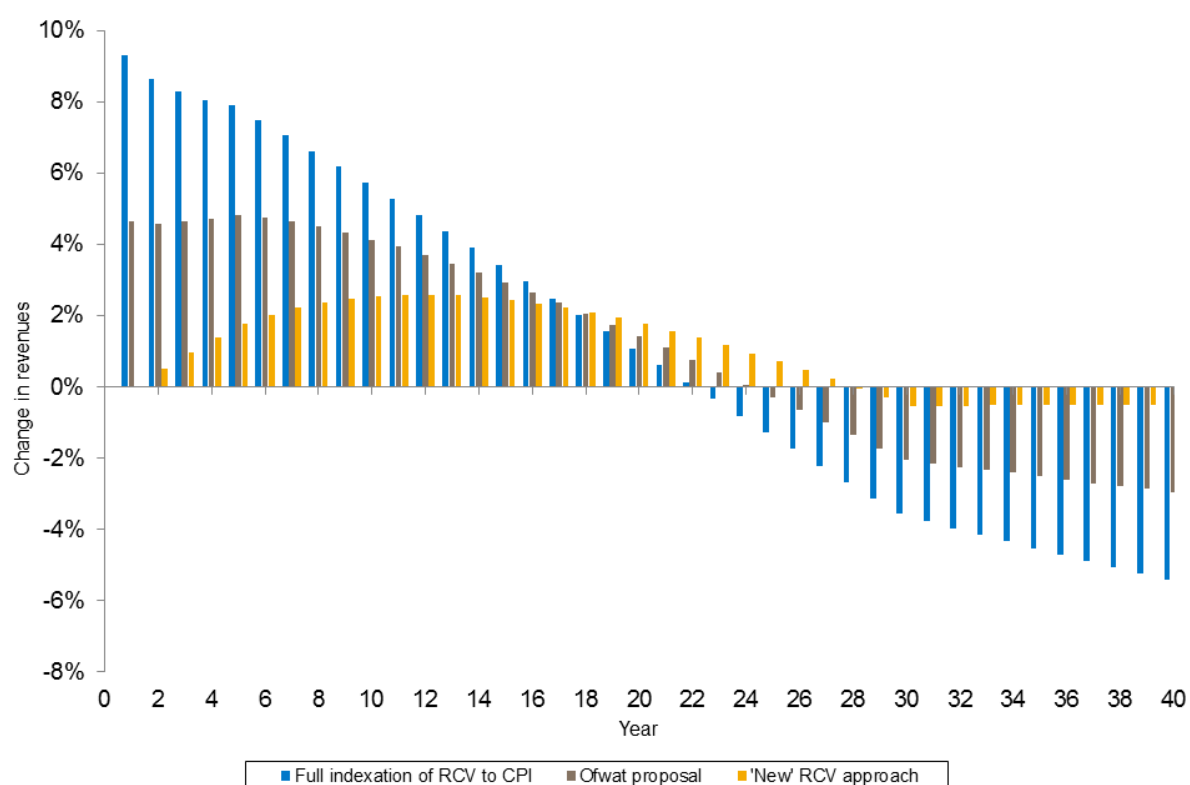
There is evidence that customers prefer bill movements to be smoothed. To mitigate the impact of a transition of the RCV to CPI/H indexation to customer bills and company cash flows, **we confirm that companies should consider smoothing the impact of a move to CPI/H indexation on customer bill profiles by using PAYG**

¹⁶ 'Indexation of future price controls in the water sector' section 7.1, Oxera, April 2016.

and/or RCV run-off financial levers, where there is evidence of customer benefits and support.

Switching the RCV to CPI/H indexation alters the balance of customer bills and how investors receive their returns. This is because inflation feeds through price controls by inflating the RCV each year and setting the allowed return on a real basis, which is subsequently deflated by inflation. As the impact on revenues and customer bills has an immediate impact (the real cost of capital would be higher on a CPI/H basis, as illustrated in Table 3), CPI/H would result in a step change in customer bills and company revenues in the short term, followed by lower customer bills and company revenues in the longer term. This is illustrated in Figure 3 for a range of transition options.

Figure 8: Impact of changes to RCV indexation on forecast revenues before the use of financial levers



To mitigate the potential step increase in customer bills, we expect companies to engage with their customers on the potential to smooth the bill impact of moving to CPI/H indexation through the use of the PAYG or RCV run-off financial levers.

Stakeholders referenced the potential for Ofwat to intervene to prevent the use of PAYG or run-off financial levers in business plans based on interventions in PR14. It is important to clarify that the PR14 methodology enabled companies to propose the use of financial levers to manage financeability. Where companies used the levers to

bring cash forward, we expected companies to demonstrate this was in the customer interest and to provide evidence of customer support. In particular, we tested whether companies who proposed use of financial levers as part of revised business plans were doing so in the customer interest. Such criteria is not inconsistent with our proposed approach to use financial levers to manage bill impacts resulting from the change in indexation.

We will consider our approach to wider use of PAYG and RCV run-off rates as part of the PR19 methodology statement. However, the use of the financial levers in the way described above, to mitigate the bill impacts of the transition to CPI/H, should not impact on credit ratings. This was supported by Oxera, who said assuming the NPV-neutrality is preserved, the proposed options for change should not negatively affect credit quality. Indeed, in discussing our December proposals, Moody's stated that higher current returns could be credit positive, but it would not regard credit quality as being improved if financial levers are used to offset the higher real return.

Companies will need to engage with customers on their proposed use of these levers to manage bill impacts. There already exists a wide range of issues on which companies engage with their customers, many covering complex issues and requiring careful weighing of interests. Well-designed processes of engagement should be able to consider the issue of indexation.

The financial impacts of the transition

The transition we have set out assumes a notionally efficient company would not need to refinance any existing debt, due to the change in indexation of the RCV. There is unlikely to be any change to a firm's ability to service existing RPI-linked liabilities and so there is no obvious rationale for refinancing these liabilities early. On the basis of the notional assumptions we made at PR14, we note that the proportion of index-linked debt we assumed (15% of RCV) is below the portion of the RCV that will be linked to RPI in 2020-25 for the notional balance sheet (as evidenced in Figure 1). Therefore, an efficiently financed notional company should see no increased costs associated with the transition we have proposed.

The transition also does not assume that companies must raise CPI/H debt or that a deep and liquid CPI/H market needs to exist. Companies' financing choices are driven by a range of factors, which are not just limited to the indexation metric used in the price control. The regulatory framework will continue to incentivise companies to raise debt in efficient terms, which may include a mix of fixed, floating or index-linked debt (which may be linked to CPI/H or RPI). Companies retain the choice as to the basis on which they raise finance and this could include RPI-linked debt. For

example, we are aware of two companies that have raised index-linked bonds since the start of our Water 2020 consultation.

We set out the evidence of CPI-linked debt issuance in our consultation. While we are not aware of any new issuance of CPI-linked debt since we published the consultation, there is evidence of potential demand for CPI-linked products (in particular from pension fund liabilities, as set out in Appendix 1). Table 6 presents evidence that CPI-linked issuance appears to be competitive. To the extent that an efficient market develops for CPI/H products, this is evidence that we would take into account when making our assessment of financeability at a price control.

Table 6: Issuance of CPI-linked debt instruments

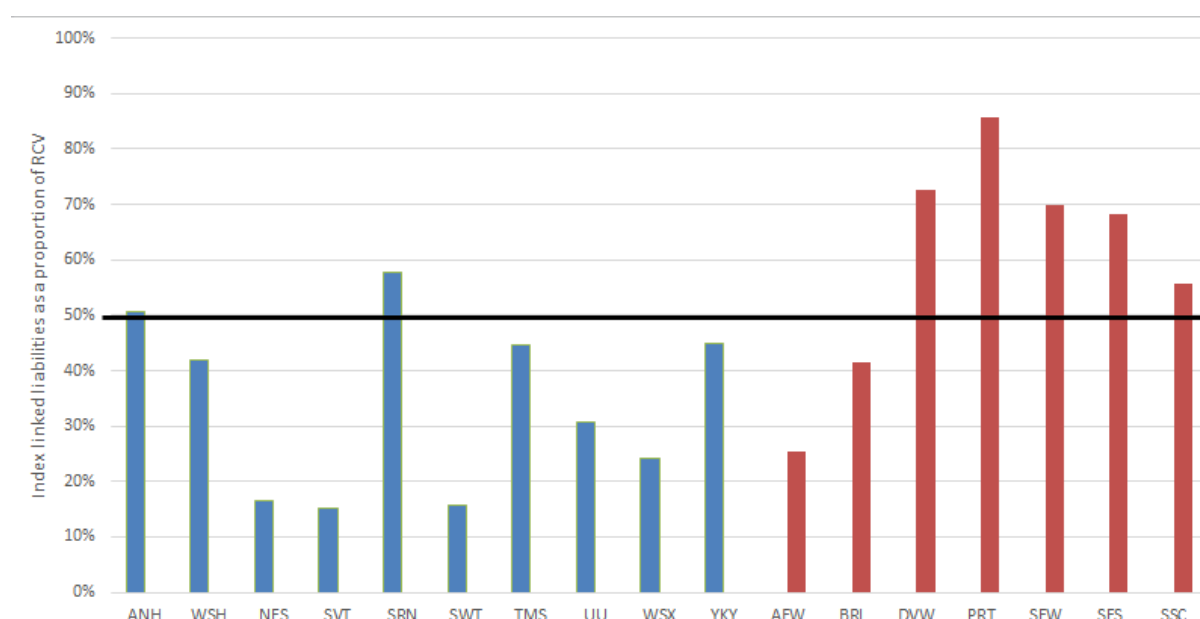
Issuer	Issuance date	Value	Term	Coupon	Notes
Greater London Authority	May 2015	£200m	25 years	0.34%	
Warrington Borough Council	August 2015	£150m	40 years	0.85%	CPI cap/floor of 3% and 0%
Church of England	August 2015	£100m	33 years	Initial coupon of 3.13%	CPI cap/floor of 4% and 0% (principal not indexed to CPI)

Source: Oxera

Our framework for the assessment of the cost capital (including the cost of debt, cost of equity and gearing) will continue to draw on evidence from the market data. While we are carrying out further work on our approach to the assessment of the cost of debt at PR19, we expect to continue to rely on evidence from the nominal debt markets. We will continue to give effect to our duties in setting the cost of capital and companies will continue to be able to challenge the decisions we make in our price determinations to the Competition and Markets Authority.

Figure 9 shows the actual index-linked debt liabilities of companies compared to RCV. A number of companies, largely the water only companies (WoCs), have proportions of index-linked debt that are higher than the approach we have proposed.

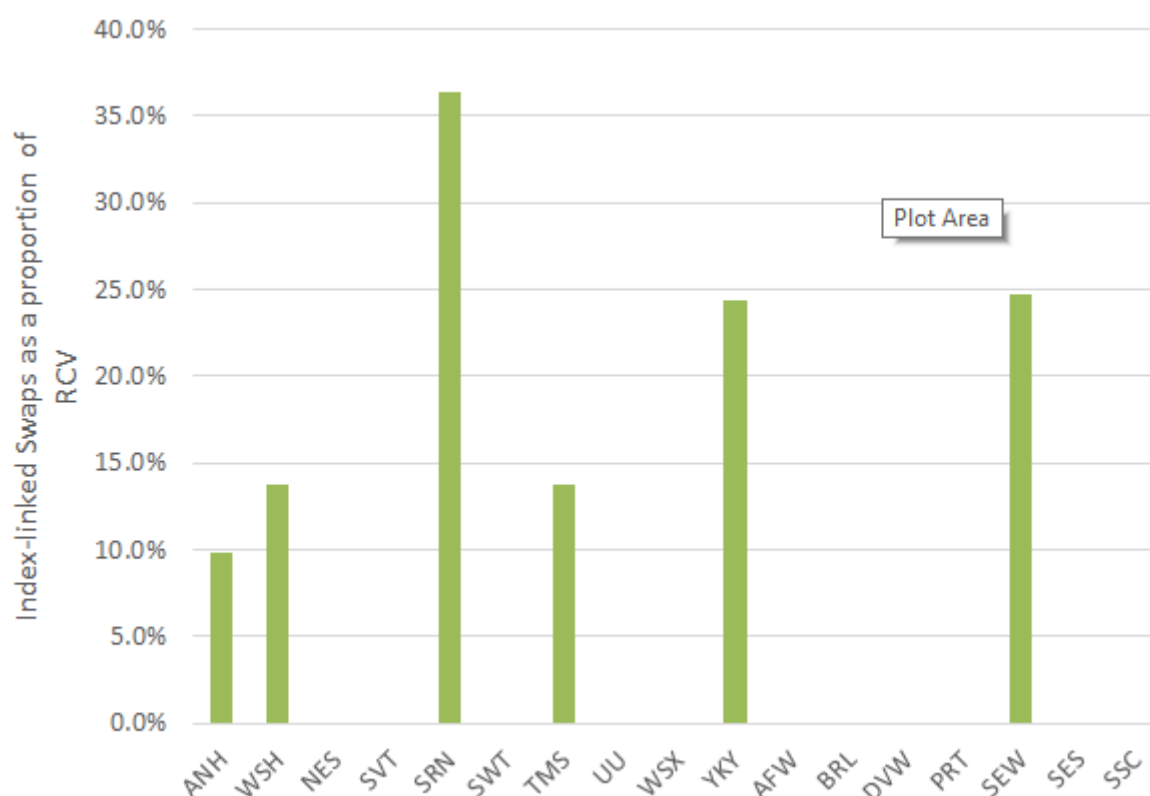
Figure 9: Proportion of RCV financed by index-linked liabilities for each company as at 31 March 2015



Note: SWT includes BRN following the merger in 2016. The black line represents the opening position of RCV that will be linked to RPI at 1 April 2020.

For companies with large proportions of RPI-linked liabilities, cash interest costs will be lower than if it were financed using our notional assumptions. This mitigates cash flow risk in the short term. For these companies, a mismatch could arise between RCV growth and debt liabilities if RPI and CPI do not move in the same way. Where companies make use of the PAYG or RCV run-off levers to mitigate the effect on customer bills, they will be able to manage the impact on RCV growth rates, as completely offsetting the impact on bills would mean that RCV growth rates would be similar to the profile of growth associated with RPI indexation. Furthermore, companies will be able to manage their liabilities to the extent that RCV growth or maturing debt is financed, for example, by nominal debt.

During the consultation we asked companies to provide us with details of the RPI-linked hedging arrangements that are in place. The responses we received revealed that six companies have RPI-linked hedging instruments in place, as demonstrated in Figure 10. At PR14, we made no assumption that the notionally efficient financed capital structure should include any hedging arrangements. As with company choices about financing structure, customers should not bear the costs of company choices of hedging arrangements – this is a matter for companies to consider under their actual financial structures.

Figure 10: Nominal value of index-linked swaps as at 31 March 2015

Source: company responses to our request for information about financial instruments, 3 February 2016

We have seen no firm evidence that companies that have adopted restrictive, covenanted financing arrangements will incur costs associated the transition. Should such costs arise, they should be incurred by the companies themselves as it was their choice (and the choice of their investors) to put such structures in place.

The cost of capital and reconciliation adjustments

We confirm we will state a single nominal cost of capital, stated separately as real CPI/H-based and real RPI-based costs of capital for the purposes of setting price limits. We confirm that **we will carry out a reconciliation** for any deviation of the forecast and actual difference between RPI and CPI/H in setting price limits for each of the wholesale price controls for the RPI-linked cost of capital that applies to the RPI-linked part of the RCV. The reconciliation will be carried out at the following price review.

To illustrate our commitment to the statement of the nominal cost of capital in real CPI/H and RPI-based terms, we provide an illustration of the decomposed PR14 cost of capital in Table 7.

Table 7: PR14 wholesale cost of capital decomposed into CPI and RPI terms

	CPI-based	RPI-based
PR14 nominal cost of capital	6.65%	6.65%
Long-term view of inflation	2.00%	2.80%
Real cost of capital	4.56%	3.74%

This table is for illustrative purposes. 3.74% was the PR14 cost of capital for the incumbent water companies that were not enhanced and we applied a 2.8% long-term view of inflation. The PR14 nominal cost of capital has been calculated using the Fischer equation, that is: $(1 + \text{PR14 real cost of capital}) \times (1 + \text{PR14 long term view of inflation}) - 1$. The calculations have been replicated for the CPI-based cost of capital using an illustrative view of the long-term view of CPI and the PR14 nominal cost of capital.

In determining the real cost of capital for the elements of the RCV that are linked to RPI and CPI/H, companies we will need to make assumptions about the forecast difference between RPI and CPI/H over the control period for their business plans and we will need to make assumptions in our draft and final determinations. To the extent that there are differences between the actual and forecast delta between RPI and CPI/H, companies will be exposed to any in-period forecasting error for the part of the RCV that is linked to RPI as revenues will be linked to CPI/H. We will carry out a reconciliation at a subsequent price review to ensure companies, on the basis of the notional capital structure, are protected from the forecasting error. We have published an [illustrative Excel spreadsheet](#) that demonstrates how this could be achieved, in NPV-neutral terms, in practice. As the adjustment will be calculated in NPV-neutral terms, this will not lead to any reduction in shareholder value.

The calculation of the cost of capital, combined with our commitment to the reconciliation for the proportion of RCV that is linked to RPI, means that the change to indexation will be NPV-neutral. This calculation does not depend on the company's level of gearing or financing structure.

3.5 Our approach at future price controls (beyond PR19)

The policy decisions we are setting out affect the way we will set price controls at PR19. The way we will set price controls at PR19 is within the context of our longer-term objectives for the development of markets and the regulation of water and wastewater services. It is not possible to say with certainty how price controls will evolve in the future. Investors are always exposed to uncertainty about how price

controls might evolve and we expect they take this into account in their investment decisions.

There will likely be a number of future developments that should be taken into account when considering the appropriate speed of transition at future price controls (beyond PR19). The decision on the final speed of transition will need to be made by reference to other relevant factors at the time, including analysis based on up-to-date information and following consultation with stakeholders.

It would not be in the interests of the sector – for customers, investors or companies – to embed a specified period of transition at this stage, as this would not allow us to respond to developments in the use of CPI/H in the future. For the same reason, the transition period or transition mechanics should not be embedded in company licences, as suggested by some respondents to our consultation.

However, we recognise that certainty about the speed of transition beyond 2020-25 is a key issue among companies and investors, particularly since the average debt maturity profile across the water and wastewater companies of 17.8 years (based on data reported by companies as at 31 March 2015) exceeds the duration of a price control¹⁷ and is aligned with our recognition of the importance of long term financing for the sector.

We have very carefully considered the need to balance clarity and predictability about the speed of the future transition with the need not to fetter the discretion of our future decisions, as at any given time we must make decisions that are best calculated to further our statutory duties. But in recognising the importance companies and investors have placed on the need for clarity and predictability about the transition beyond 2020-25, we set out the principles we will apply in making decisions on the speed of the transition at PR24 and beyond. We also set out an illustrative transition based on these principles and on the maturity profile of debt.

¹⁷ The weighted average maturity of debt as at 31 March 2015 was not materially different between WaSCs and WoCs at 17.7 years and 18.0 years respectively.

Principles to be applied in assessing the speed of transition at PR24 and beyond

We will retain discretion and flexibility to respond to developments with no pre-committed, specified path. In making the decision at future price controls about the pace of the ongoing transition we will take into account the need to ensure the:

- approach to inflation is seen as legitimate by customers and their representatives;
- price controls are underpinned by robust indices to maintain the credibility of the regulatory regime and to ensure efficient finance continues to be attracted to the water and wastewater sectors;
- future transition does not distort the incentives for companies to raise debt efficiently;
- prior commitments* are maintained; and
- objective of avoiding unnecessary or undue complexity is maintained.

Our assessment will:

- take account of the legitimacy of the inflation index to customers and their representatives;
- be made by reference to a notional financial structure;
- consider the extent to which RPI-linked debt instruments, embedded at PR19, remain embedded at the time we make our decisions; and
- take relevant factors into consideration, including the impact on customer bills and evidence on the use of inflation indices by the Government, other regulators and the financial markets.

*Prior commitments means:

- the continued use of the PAYG and RCV run-off levers to address bill impacts where there is evidence of customer support;
- reconciliation calculations to address any mismatch between the forecast and actual difference between RPI and CPI/H; and
- a single, nominal cost of capital, stated separately in real RPI and CPI/H terms.

We will consult on the future path of transition and take account of stakeholders' views in making our decisions.

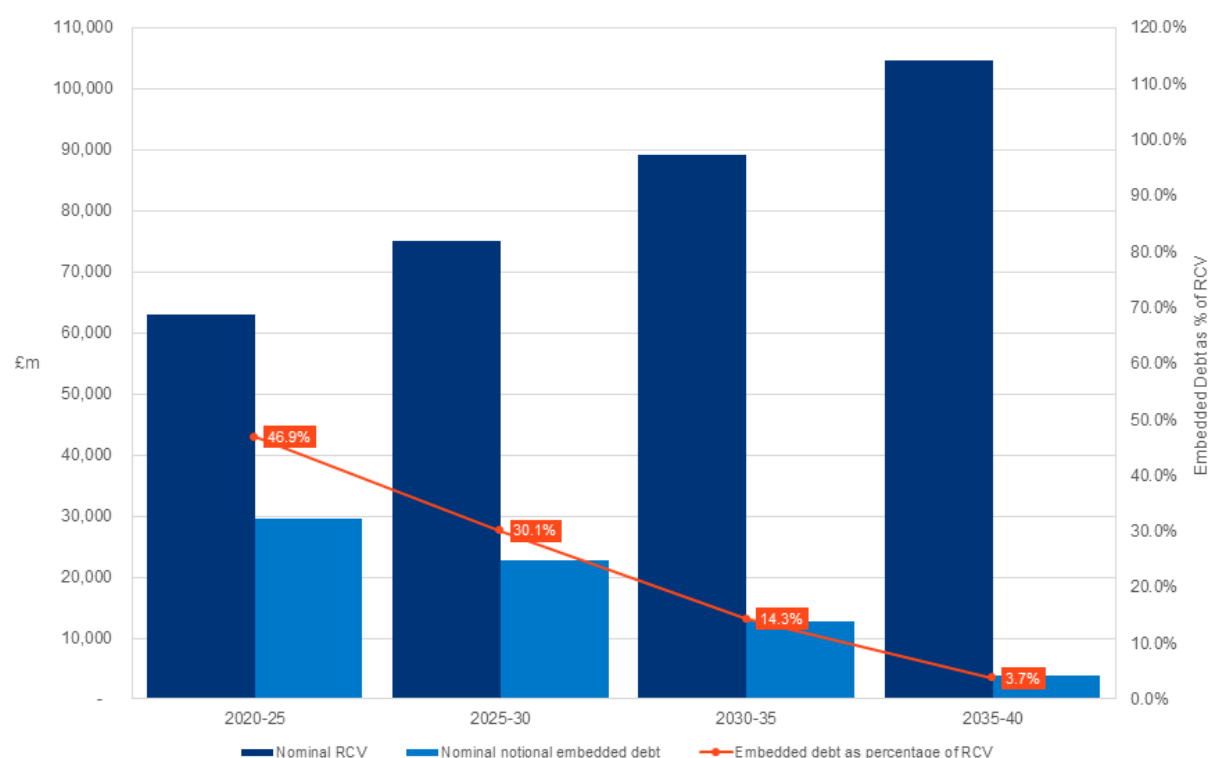
Taking account of the principles set out above, we provided an illustration of the potential path of the future transition beyond PR19. We set out the factors that could influence the speed of transition.

It would be possible to fully transition the RCV to CPI/H at PR24, provided this was acceptable from the customer bills perspective. However, such a speed of transition could increase perceptions of regulatory risk, so there is a case for aligning the speed of transition with the remaining term of debt in the notional balance sheet, consistent with long term approach to assessing cost of finance in price review.

In Figure 11, we illustrate the potential path of transition based on the maturity profile of the notional debt embedded in the notional balance sheet at 31 March 2020. In previous price reviews, we have distinguished between embedded and new debt on the notional company balance sheet. However, we have not needed to identify notional tenor of debt. The 75:25 embedded/new debt split in PR14 could be inferred to suggest the refreshing of debt over four price controls or 20 years. This does not imply a limit on the tenor of long-term debt of 20 years. Some debt is likely to be floating or shorter-term, and other debt longer-term, than 20 years.

The average tenor for the sector is 17.8 years (within a range of 13.8 years to 24.2 years), which is broadly consistent with the notional assumptions at PR14. We have used this average tenor for the sector as a basis for estimating a future transition path for the profile of RPI-linked debt. The analysis begins from 2020. However, early notice of our intended approach to PR19 allows companies to take account of the change in indexation well in advance of 2020.

We set out the factors that could affect the future speed of transition in Table 8.

Figure 11: Possible transition based on the maturity profile of nominal embedded debt

Note: The nominal RCV projections are based on projections using the RPI CPI reconciliation model published by Ofwat in March 2016, based on industry average totex additions and run-off rates in 2015-20. All totex additions are assumed to be added to the CPI RCV balance. The opening notional embedded debt is calculated on the basis of opening notional gearing of 62.5% and 75% embedded debt (consistent with our assumption that 50% of the RCV will be linked to RPI at PR19). The nominal notional debt is assumed to mature over 17.8 years. Consistent with the assumption at PR14, 33% of opening notional debt is assumed to be index-linked and to accrete with RPI. CPI has been assumed to be 2.0% and RPI assumed to be 2.8%.

Table 8: Factors that could influence speed of transition

Evidence of additional risk to notional company and hence potential impact on financing cost.
Developments in debt markets including issuance of index-linked, nominal debt and hedging instruments.
RPI is further discredited.
Adoption of CPI/H as the indexation measure in other regulated sectors.
Evidence that an increased or slower speed of transition benefits customers and is in the customer interest.
Evidence of customer acceptance of bill impacts and proposed use of RCV run-off/PAYG lever to mitigate run-off.
Windfall gains or losses to companies as a result of the use of a discredited index.

3.6 The impacts of our decisions

In this section, we summarise the impacts of our proposals for the indexation of the wholesale price controls.

3.6.1 Our December consultation

In the December consultation, we presented [a qualitative and indicative impact assessment](#) of our preferred option for the future indexation of the wholesale price controls. We suggested that our preferred option had an overall net positive impact, with clear benefits and minimal costs.

3.6.2 Responses to our consultation relevant to the impact assessment

Some stakeholders (who responded to the impact assessment questions) explicitly disagreed with our draft assessment of minimal costs associated with our proposals. The main arguments put forward are already included in the stakeholder responses we have set out above, and include representations that:

- the absence of a deep and liquid CPI/H-linked debt market would make it more expensive to issue CPI/H-linked debt or hedging instruments (which respondents suggest would need to be issued);
- companies with long-term RPI-linked debt profiles would not be able to make use of such a debt market, even if it is efficient, as exiting their debt arrangements would be prohibitively expensive;
- companies could incur refinancing costs or need to enter into expensive CPI-based hedging arrangements, the cost of which could potentially be passed on to customers; and
- any perceived increase in risk would have an effect on the cost of capital that would be detrimental to customers.

Other points included the following.

- One respondent stated a number of considerations that should be considered in the impact assessment, including possible costs associated with amending the terms and conditions of existing RPI-linked bonds to calculate indexation on a CPI basis, amendments to existing RPI-linked swaps, and possible trigger events associated with licence modification if it were considered to be a Material Adverse Effect.

- One company respondent noted that most of its costs were more closely linked to RPI than CPI. In part this is due to RPI-linked contracts, which could be replaced with CPI-linked contracts on renewal. Staff costs have also historically been more aligned with RPI, partly because this has been the figure used by trade unions in salary negotiations.

3.6.3 Our review and analysis

We have considered the benefits and costs of the options in our impact assessment, taking account of the issues we have set out in the preceding sections. In doing so we have drawn on the work we commissioned from Oxera. We set out more detail on the impact assessment in the indexation appendix.

3.6.4 Our updated impact assessment

Table 9 summarises the expected impacts of the policy options for indexation. Further details are set out in '[Appendix 3 Securing legitimacy of future price controls – further evidence and analysis](#)', where we also set out the distributional impacts on different stakeholders, including current and future customers, water and wastewater companies, the Thames Tideway and stakeholders in Wales.

Table 9: Summary of the impacts of the options for indexation

Impact Areas	Do nothing	Revenue and proportion of RCV indexed to CPI/H			
	Status quo	Revenue only (0% RCV)	New RCV	50% RCV as at 1 April 2020 plus new RCV	100% RCV
Legitimacy	Indexation of both revenue and RCV ultimately flow through to customer bills. RPI is losing its legitimacy: it is statistically flawed, is discredited and has been discontinued as a national statistic. In the context of legitimacy, a switch to CPI may improve forecasting on both revenue and RCV. Options that involve a faster transition away from RPI, across all elements of the price control, are therefore preferable.				
Volatility of customer bills	There is evidence that customers prefer smooth bill profiles. To the extent that CPI and CPIH tend to be less volatile than RPI, options that involve a change to revenue indexation are likely to benefit customers, although this impact is likely not to be large. Although the impact could increase in times of wider economic change, with constraints on household budgets. In terms of volatility of consumer bills, a move away from RPI for bills and revenue indexation is preferable.				
Operational risk/costs	There is no clear evidence that the industry's operational costs or risk will materially change under any of the indexation options considered, and so there is no clear cost or benefit to the industry of moving away from RPI. We consider that none of the options would lead to any costs or benefits. There is no benefit to a faster (or a slower) transition.				
Financing costs	Oxera found no material, robustly quantifiable impact on the industry's risk (and hence financing costs) under any of the options for change considered. Oxera found that inflation uncertainty drives only a small proportion of the overall volatility of the firm. Any option for change has a modest impact on volatility, and options that involve some transition for the indexation of RCV do not increase this volatility. We consider that none of the options would lead to any financing costs or benefits for the notionally financed company. There is no benefit to a faster (or a slower) transition.				
Financeability and financial levers	Any option for change that involves changes to the indexation of the RCV is likely to improve financial credit ratios in the short to medium term, since cash flows are brought forward. If offsetting changes are made (eg through PAYG or RCV run-off), at worst there will be no change to the forecast credit metrics (assuming no change to rating agency methodology). For the purposes of this impact assessment, none of the options would lead to any financeability costs or benefits. There is no benefit to a faster (or a slower) transition.				
Affordability and fairness	Given our expectation that levers can be used to smooth bill impacts (if supported by customers) to manage any impacts, and given that there is no clear-cut argument in terms of intergenerational fairness, we consider that none of the options would lead to any affordability or fairness costs or benefits. There is no benefit to a faster (or a slower) transition.				
Perceptions of regulatory risk	Options that involve changes to the indexation of the existing RCV are more likely to increase perceptions of regulatory risk among investors, which may impact on the cost of capital. However, options that represent a slower transition may introduce greater regulatory risk in the future – for example if it creates a need for less gradual change at that time. Nonetheless we recognise these perceptions, and our impact assessment assumes our commitment to the reconciliation is understood by companies and investors. The principles we have set out for future transition of the RCV provide clarity to investors in terms of our approach at future price controls at PR24 and beyond.				
Complexity	The use of both RPI and CPI/H to index the RCV in transition introduces additional complexity for us, companies and investor groups. However, all parties are well placed to consider and understand the increase in complexity as they must do with the introduction of new regulatory mechanisms at any price review. This complexity would be reduced in the case of a full switch to CPI/H for RCV indexation, although the engagement with customers on use of PAYG and RCV run off would remain with this option. All options allowing a transition of indexation of the RCV over time result in some additional complexity. We have not quantified the administrative cost to companies and investor groups associated with developing an understanding of the true-up mechanism for transitional options. However, we consider it will not be material as the work will be carried out by parties familiar with the regulatory regime.				

Colour coding: green represents no, minimal or positive impact; amber represents some negative impact; red represents a negative impact.

3.7 Summary of our decisions

We confirm our decisions to secure the legitimacy of future price controls as follows.

- We will seek to change **revenue indexation** to the Consumer Price Index (CPI or CPIH) from the start of the 2019 price review (PR19) price control and to amend the licence conditions accordingly.
- We will change **regulatory capital value (RCV)** indexation to CPI (or CPIH). 50% of the RCV will be indexed to the Retail Price Index (RPI) at 1 April 2020. The rest of the RCV, including all new RCV will be linked to CPI/H and so the proportion of RCV that is indexed to CPI/H will increase through 2020-25.
- We will confirm the final decision as to whether to use **CPI or CPIH** in the methodology for PR19. This will allow us to take account of developments in the use of CPI and CPIH including the advice of the Office for National Statistics (ONS) to the UK Statistics Authority (UKSA) on the status of CPIH as an official statistic.
- We will state a **single nominal cost of capital** – stated separately as real CPI or (CPIH)-based and real RPI-based costs of capital – for the purposes of setting price limits.
- We will reconcile for the difference between the RPI and CPI/H forecast for setting price limits and the actual out-turn for RPI-linked cost of capital that applies to the RPI-linked part of the RCV. Together with a nominal cost of capital this will mean the change to indexation will be **net present value (NPV)-neutral for a notionally efficient company**.
- We have set out the **principles** we will apply when considering the transition of the indexation of the RCV beyond 2025 to make our intentions clear and predictable.
- We confirm that to the extent we use similar **cost assessment models** to PR14 at PR19, we will deflate the base cost data using the same measure of inflation we will apply for revenues.

4. Moving beyond waste

4.1 Our decisions

- We will use our regulatory framework to **promote markets for sludge**.
- We will make **market information** available to facilitate efficient provision of sludge transport, processing and disposal across company boundaries and in the wider waste market.
- We will set a **separate binding price control** for sludge activities in the 2019 price review (PR19).
- We will set the sludge price control at a **company level** rather than site level.
- We will set a **five-year price control** at PR19.
- We will set an **average revenue control** to regulate sludge, which will reflect the volume of sludge produced by WaSCs.
- We will keep the sludge **system operator functions** within the incumbent companies.
- We will **not introduce sludge trading incentives** at PR19.
- We will use a **focused approach to allocate the regulatory capital value** (RCV) to the separate sludge control.
- We will not create a **regulatory mechanism** for guaranteeing the sludge RCV during PR19.

4.2 Introduction

In this section we set out our decisions about our future regulatory framework for sludge treatment, transport, recycling and disposal, along with areas for further consultation. This builds on what we set out in our December consultation. We reflect on what respondents to that consultation told us, confirm the decisions we have made (and the thinking behind them) and set out the next level of consultations.

4.2.1 Overview

Sewage sludge is the semi-solid material separated from the flow of wastewater during its treatment. Treatment, transport, recycling and disposal of sludge (sludge services) are mainly carried out by the ten WaSCs in England and Wales.

As well as being a by-product of wastewater treatment, sludge is increasingly being seen as a resource and indeed, a bioresource. For customers to have trust and confidence in the wastewater services they receive, the sector needs to continue to ensure safe and effective sludge management. It also needs to maximise the benefits that sludge can bring to society and the environment – returning essential nutrients to the land and generating renewable energy. Effective management of sewage sludge and biosolids (that is, treated sludge that meets strict quality criteria) ensures that value to society is maximised as useful materials are recycled to land, that crops grown on land where biosolids have been used are safe for human consumption and that harmful materials are not released to the soil or into water.

As we noted in December, the fact that sludge has a value implies that markets, rather than regulation, may lead to sludge being used and treated more effectively. So, our longer-term vision involves markets for sludge, unlocking its potential as a resource by informing, enabling and incentivising companies operating in these markets to do more for less, to make the best use of resources and to find new ways of doing things. This will help bring benefits for customers, investors and the environment.

4.2.2 Challenges and opportunities

We discussed the challenges and opportunities that companies face in our July discussion document and December consultation. For sludge, these include the following.

- **Environmental challenges.** Population growth and improvements to water quality to meet European standards, such as the Water Framework Directive, mean increasing volumes of wastewater need to be treated to a higher standard. This is likely to generate more sewage sludge.
- **Resilience.** The recent floods have underlined the threat disruption can pose to water companies, including operating their wastewater and sludge treatment sites.
- **Customer bills and affordability.** Our final determinations for PR14 will result in water and wastewater bills being 5% lower on average in real terms in 2019-20, compared with 2014-15. However, the challenges summarised above are likely to lead to upward pressure on bills.

There are also important opportunities, as sludge services are not a natural monopoly. They have many similarities with organic waste treatment services. There are also wider environmental objectives that present the sludge sector with

opportunities, such as the [European Commission's Circular Economy strategy](#)¹⁸ with its focus on recycling and reusing waste. Sewage sludge, when treated appropriately and recycled to land, is a sustainable source of nutrients.

There are opportunities to broaden the range of those involved in sludge services, to optimise treatment, recycling and disposal outside traditional company boundaries – through sludge trading or third parties, for example. The opportunities are not only about doing things at lower cost, but also about making the best use of resources, improving resilience and finding new ways of doing things. Markets can inform, enable and incentivise efficiencies and innovation for the benefit of customers and the environment. Therefore, while the refinements to our regulatory approach for PR14 provided clear benefits, there is a compelling case for our regulatory approach for sludge transport, treatment, recycling and disposal to evolve even further. The aim would be to address the challenges facing the sector and deliver efficiency improvements to benefit customers.

4.2.3 Our position and next steps

Our objective in changing the way we regulate sludge is to stimulate markets in sludge services. This would enable and incentivise companies to pursue the best solutions in sludge treatment and maximise benefits for customers, the environment and the companies themselves. As new providers enter the market, we anticipate increasing resilience in sludge services, with companies able to choose from a number of alternatives for treating, disposing of and recycling their sludge in both day-to-day operations and to lessen the effects of disruptions.

This objective is aimed at companies whose areas are wholly or mainly in England or Wales. Our proposals will encourage and enable companies to make the best use of sludge as a resource, and so will promote sustainable development. Our proposals will directly support the [Welsh Government's well-being goals](#)¹⁹ of a prosperous and resilient Wales.

Our priority for sludge is to incentivise WaSCs to use market options to run their sludge businesses more effectively. We need to ensure that our approach creates the right incentives and avoids distorting markets in sludge services, either between WaSCs or other waste service providers. The existing incentive regime provides

¹⁸ 'Closing the loop – An EU plan for the Circular Economy', European Commission, April 2016.

¹⁹ 'The Well-being of Future Generations (Wales) Act 2016'.

some incentives to minimise cost, but does not provide strong incentives to maximise capture of value from sludge. Our proposals do not depend on developing a bilateral market for sludge, nor on the Water Act 2014 provisions for competition. They apply equally, therefore, to all incumbent WaSCs.

In the longer term, our proposals will provide a solid foundation for bilateral markets for sludge, if the development of such market is in the best interest of customers and where there is a legislative basis for the developing this sort of market. We are not proposing the development of a bilateral market for sludge at this point in time.

By the time we next set prices for wholesale services in 2019, we plan to have taken considerable steps towards our objectives. Our market design for sludge activities will make sludge services a distinct and visible part of the wastewater value chain. We will make information on sludge production and current activities available so that anyone wanting to participate in sludge services markets can identify the opportunities. Although changes in sludge services are unlikely to be of direct interest to customers, we expect that, in due course, the value captured from sludge will increase and the cost of providing sludge services will reduce, leading to lower bills. We also expect optimising sludge use to lead to increasing environmental benefits and to contribute to the EU's Circular Economy strategy.

4.3 Our market design for sludge activities

4.3.1 Barriers to developing a sludge market

Our December consultation described the scope for increased sludge trading and optimisation across the WaSCs' regional boundaries and for trading with Other Organic Waste (OOW) companies. These unrealised opportunities indicate that there are market failures or barriers to optimisation. We noted in our December consultation that these barriers included the following.

- **Missing information.** Without knowledge about current sludge production and treatment facilities, it is challenging for incumbent companies and potential entrants (both out-of-area WaSCs and firms in the wider waste markets) to identify profitable trade or optimisation opportunities. This hinders the development of markets for sludge.
- **Cultural issues.** The Office of Fair Trading (OFT), in its market study in 2011, noted that there may be cultural issues in how companies behave that might deter them from outsourcing activities in these markets.

- **Regulatory incentives.** WaSCs and investors might consider ‘own and build’ to be subject to less regulatory uncertainty than contracting arrangements. And there may be views about our treatment of any additional revenues companies generate (either out-of-area or in wider waste markets).
- **Environmental regulations.** We recognise that in order to enable co-digestion of sludge and other organic waste by WaSCs, the current arrangements relating to environmental regulation may attract some costs to bring these WaSC operations on to a comparable basis with other similar operators. Similarly such operations will benefit from income associated with other waste streams such as co-digestion of sludge and other organic waste. Synergies can still be gained from co-location without co-digestion, for example, through co-treatment of the biogas produced through digestion of different materials.

4.3.2 Our December consultation

In our December consultation, we asked respondents whether they agreed with our preferred proposals to help promote markets. The proposals were:

- a binding separate price control for sludge services (treatment, transport, disposal and recycling);
- a market information platform;
- WaSCs and other market participants to undertake system operator functions;
- transparency of contracts with third parties; and
- no specific financial incentives at the next price review to support sludge trading.

The December consultation also asked one overarching question: whether respondents agreed with our proposed approach to promoting markets in both sludge and water resources.

4.3.3 Responses to our December consultation

Six out of ten WaSCs are broadly supportive of the five proposals above. Other supportive respondents included environmental regulators, the Consumer Council for Water, Citizens Advice, National Farmers’ Union and representatives of potential entrants to the market. We received a full response from CIWEM, which presented the wide range of views expressed by its membership.

Four WaSCs, some investors and other respondents expressed reservations or disagreed with some elements of our proposed approach to promoting markets in sludge.

4.3.4 Our review and analysis

We were encouraged by the support for our proposal. The reservations expressed by respondents were generally not about the principle of promoting markets but more about the mechanics of doing so. One respondent, however, suggested we were too late for the largest potential benefits to be realised because many of the WaSCs had recently invested in assets at fixed locations to treat their own sludge. However, our analysis suggests that there are significant benefits to be had even within the existing site configuration. Efficiency gains are likely to increase further as additional capacity for treatment is required, and as assets reach the end of their relatively short lives. We have concluded that promoting sludge markets has a positive benefit.

In developing our sludge market design, we aim to reveal and maximise the value of sludge as a resource, and incentivise innovation.

We are also considering how our regulatory regime could affect the closely-related market for OOW. In principle, WaSCs may be able to take part in this market using existing assets, or by developing new assets for that purpose. Alternatively, OOW firms may be able to participate in sludge services. In selecting our preferred approach in the December consultation, we took into account any possibility for cross-subsidisation between the markets that might be detrimental to customers.

We also noted in December that, while there appeared to be some scope for trading between WaSCs, this was localised. We cannot accurately predict how quickly the market might evolve. From a regulatory design perspective, this implies that a path towards full market deregulation, or uniform backstop price regulation, would not be appropriate at this time. It also implies that information to support markets needs to be localised.

4.3.5 Our policy decisions for promoting sludge markets

We will use our regulatory framework to promote sludge markets via a design package that informs, enables and encourages the sludge market. The specific elements of that design package are discussed in the sections below on improving information, price control for sludge and RCV for sludge.

4.4 Improving market information

In this section we discuss two aspects of our sludge market design that we consulted on in December – market information and transparency of contracts with third parties.

At the moment, there is no readily available supply-side information on where sludge is produced, its quantity or its quality. The evidence from water companies and potential entrants to sludge markets suggests that better information would help markets develop. This would enable potential market participants, including WaSCs, to identify opportunities to supply services to sludge producers.

Credible and easily accessible information would enable markets to develop and evolve, and would enable comparison that could lead to market choice.

More information may be needed to facilitate markets and to assess market activity. This could include:

- standard contract terms and templates;
- information on bids to supply services; and
- information about successful bids and contracts.

Since WaSCs are the monopoly suppliers of sludge services, we may need to introduce measures to ensure there is no discrimination against potential entrants bidding to provide sludge services. Our December consultation explored one way of doing this – making bid activity and assessments visible. This could be through publicly available information or by companies reporting in confidence to us.

4.4.1 Our December consultation

In our December consultation, we proposed regulatory options as part of our sludge market design to address the information issues described above and to promote trading and optimisation. We proposed a package of measures including the following.

- A central platform for market information to promote consistency and facilitate competition by lowering the cost of accessing comparative market information. We sought industry views on the range of information to include and proposed that it would be needed at two points in the value chain:
- location, volume and quality at the point of production (the wastewater treatment works); and

- location, capacity, utilisation, treatment, transport costs and disposal costs at the sludge treatment centre.
- The information platform would also contain details of bids from third party providers.
- High-level bid assessment guidelines (to apply to WaSCs as the monopoly seller) to ensure a level playing field for assessing bids from out-of-area WaSCs and OOW firms for sludge treatment and use.

4.4.2 Responses to our December consultation

No respondents disagreed with our proposals to make information available to facilitate market entry, and most respondents agreed that this information should be centralised. We have also had further discussion through the sludge working group²⁰ on what information is needed to facilitate the market and on the governance arrangements for a sludge information platform.

There are different views from respondents about which part of the sludge value chain should publish data – either wastewater treatment works (WwTWs) or sludge treatment centres (STCs). Respondents told us that not all of our proposed information was needed and that we should consider the costs and benefits of collecting the proposed information requirements. A key message from the consultation responses, reiterated through the sludge working group, is that sludge market information needs to be defined and collected consistently so that it can be compared across WaSCs. Most respondents did not comment on the specific categories of data and we discussed this issue with the sludge working group.

The Environment Agency suggested a potential need for more extensive data about sludge quality characteristics as defined by the European Waste Catalogue and the outcomes from the Chemicals Investigation Programme. In the context of market development, all market participants may need to provide information on the capacity of land to accept biosolids.

²⁰ We have set up a sludge technical working group to meet every six to eight weeks between January and autumn 2016. It is open to all interested parties and is a forum for discussion of sludge market design. It is not a decision-making body. We will publish the working group meeting material on our website shortly.

The Welsh Government asked for clarity about our proposed processes for disclosing information, in particular how these may be different in England and Wales.

Respondents were divided about the need to publish details of bids. Some felt it was not clear what the benefit would be and that it could reveal a company's position. As markets would initially be thin, it could discourage competition. An alternative suggestion was to publish agreed contracts.

There was a range of views about how the information platform could work in practice. While most respondents agreed it should be a central location, there was no consensus on funding or governance.

4.4.3 Our review and analysis

Market information

The December consultation responses and subsequent discussions support our position that publishing information is a key part of developing sludge markets.

Our initial thinking was that information should be provided to allow market participants to derive a 'gate price' for sludge at WwTWs, involving a range of data at both the WwTW and STC points in the value chain. However, at this stage, we propose that only data on quantity and demand should be required. This is because more time is needed to develop accurate cost data and it is likely to be more expensive to provide this information. As markets develop, we can review the requirements on companies. We will continue to work with the sector on cost or price data, so that this information can be provided, if needed.

Our objective is to promote the short-term and long-term development of sludge markets. Responses indicate it is relatively standard practice within the industry to identify cost-effective solutions for short-term sludge treatment – using alternative facilities during maintenance outages, for example. The purpose of a sludge information platform is to facilitate market interest in longer-term trading opportunities both from WaSCs outside their regional boundaries and from OOW companies. Information which helps to identify opportunities to supply sludge services should act as a catalyst for market participants to develop business cases and open commercial discussions with sludge producers.

In terms of the data content for a sludge information platform, our consultation and analysis suggest that identifying market opportunities will, as a first step, require standard information on the demand-side for sludge services. To reduce reporting and minimise costs, the information provided in relation to the sludge produced at WwTWs, would include:

- location of the WwTW site;
- volume of sludge produced;
- the dry solids concentration of the sludge;
- storage constraints (how often collection is required);
- information on sludge quality (for smaller sites, a proxy such as treatment process could be used); and
- any particular points that market participants may need to know, such as restrictions on the size of tanker that can access the site, or unusual constituents of the sludge.

We would also expect companies to provide basic information about the location and process type of current sludge treatment centres, many of which are co-located with WwTWs. There is a table in Appendix 2 to show these suggested information categories.

The proposed categories and points in the value chain have been reduced since the December consultation, but this should be a sufficient and cost-effective approach to enable participants to identify opportunities.

While we have decided not to require cost information or a derived 'gate price, we expect to return to this issue in the future as we consider it a necessary step for further market development. We will also consider whether it would be more helpful to focus on sludge treatment sites and transport costs separately, so reduce detail and complexity of required information. We will continue to work with both WaSCs and potential new entrants on this issue. Companies are free to decide whether or not they consider it helpful to publish this information.

Most respondents in our December consultation agreed with our proposal that information should be provided to market participants centrally. We think this is best achieved by requiring publication of information in a standard format and frequency.

For sludge markets to develop, all participants, both incumbent providers and new entrants, need to have confidence that the information on which they base decisions is robust and consistent. Some companies have indicated that they are willing to participate and provide information without the need for a licence change. However, a specific licence change is necessary so that companies are required to provide

information to support markets and to ensure the data is reliable and trustworthy, so that third parties can rely on it. The information would be limited to that which would be reasonable to support development of the sludge market.

We propose that the licence change would set out a requirement to ensure information is provided and shared, but would not include details of what information is provided, nor the means for sharing it. Our view is that this would be better specified through supporting guidelines, which would allow us to work with companies to develop and adapt in the light of market developments. We do not propose creating an independent information platform, rather that companies would publish data on their own websites. We will require incumbent companies to allow reasonable commercial and non-commercial use of the published information. Third party aggregators will be free to collect information and publish information at industry level. If third party providers do not develop aggregated information, we will reconsider whether information platform provider might need to be established to support markets.

The benefits of providing information to help identify market opportunities are equally relevant for companies whose areas are wholly or mainly in Wales as they are for companies whose areas are wholly or mainly in England. Dŵr Cymru Welsh Water may have cross-border trading opportunities with a number of English WaSCs which should lead to more efficient operations and lower costs to customers. There are also Welsh OOW facilities that may be able to offer sludge treatment services to Dŵr Cymru Welsh Water.

Our proposed approach for requiring standardised and defined information will:

- ensure trading opportunities can be identified;
- ensure data definitions and the quality of information provided is consistent across companies;
- provide greater certainty over when sludge information is made available to market participants;
- create momentum for sludge market development, consistent with our Water 2020 strategy; and
- provide for more comprehensive collaboration between the water and OOW sectors.

We will develop definitions for required information with stakeholders, primarily through the sludge working group and industry forums.

Market activity information

After reflecting on the responses we received to our consultation, we have decided that publishing limited information on location, contract duration and the sludge volumes of successful bids, but neither prices nor the successful third party companies, would be the right approach, rather than publishing all bid activity. A table in Appendix 2 shows the suggested categories of information in relation to successful bids.

We also propose that information on all bids received by WaSCs for sludge services should be recorded and provided to Ofwat if required. This could be valuable for monitoring market development and assessing efficiency of sludge services in our review of business plans at PR19. We propose, therefore, to require WaSCs to record this information and provide to Ofwat as part of supporting information for business plans (or on request), rather than requiring publication of this information.

In the December consultation document we also discussed the possibility of guidelines for assessing third party bids. There was no overwhelming support from respondents. We will continue to monitor this to check whether absence of guidelines does not hinder market development. We also expect all WaSCs to be able to demonstrate the efficiency and effectiveness of their approach to procuring sludge services (including self-provision) as part of their 2019 business plans. Some respondents also raised the issue of defining standard products and standard contract terms. At the moment, we see this as an area for the market to develop and would expect participants to collaborate on developing these for the purpose of facilitating commercial discussions. We also may follow up on product definition in the sludge working group.

4.4.4 Our policy decisions on market information

The response to our December consultation and further analysis supports our view that the sector should develop market information for sludge. We will take steps to make available market information that is credible, simple to access and enables comparisons that enable market choice.

4.5 Price control for sludge

In this section we discuss three of the characteristics of our sludge market design – the binding separate price control for sludge services, system operation functions and trading incentives.

4.5.1 Our December consultation

A separate control

In our December consultation, we set out the rationale for a separate binding price control for sludge. We explained this would clearly delineate the costs and revenues associated with sludge activities and was key to preventing cross-subsidisation between wastewater and sludge activities. This would ensure a level playing field for WaSCs and any third-party sludge service providers. We referred to Wessex Water's report²¹ on the commercialisation of sludge, which advocated a separate price control to encourage management to focus on sludge activities and increase efficiency.

The benefits of greater commercial focus: a Wessex Water GENeco case study

As part of Wessex Water's regulated business, GENeco manages a large sludge treatment centre and the co-located wastewater treatment works. It also manages non-appointed business, including organic waste treatment, on the same site.

As a result of setting up GENeco, Wessex Water has identified opportunities to produce more renewable energy and to sell its products to the farming sector. This has increased revenue generated through its regulated business. Wessex Water's customers have benefited too.

The non-regulated business has used (and paid for) the regulated business's assets, which has led to reduced running costs for the regulated business. Wessex

²¹ 'Water 2020: Potential developments in the commercialisation of the sludge treatment and recycling market', Wessex Water, June 2015.

Water reports that: “The additional revenues and reduced costs for the regulated business have materially reduced sewerage bills to Wessex Water’s customers.”

In our December consultation, we defined sludge activities as transport, treatment, recycling and disposal, but we did not specify the exact boundary for sludge activities. For example, we did not set out a preference for whether sludge holding tanks on satellite wastewater treatment works should be considered part of sludge activities or network plus activities.

Form of the sludge control

Our policy proposals from the December consultation included the introduction of “a price control with volume risk” for the sludge control.

We also stated that, “it is appropriate for companies to be exposed to volume risk associated with changes in the total volume of sludge to be treated in relation to new investment. As such, we do not think that a pure total revenue control would be appropriate. Instead, it is our initial view that the control for sludge treatment, transport recycling and disposal should include a volume element through either:

- a volume adjustment factor applied to a total revenue control (as with the PR14 household retail control);
- an average revenue control; or
- a price cap.”

System operator functions and trading incentives

In December, we proposed making no changes to the system operation activities of incumbent WaSCs within sludge. We decided that, due to the limit and localised nature of these functions, it did not need to be centralised.

We also stated that we preferred not to introduce sludge trading incentives, but instead to introduce regulatory transparency over contracts with third-party market participants.

4.5.2 Responses to our December consultation

We asked respondents whether they agreed with our proposal to have one separate binding price control for sludge services. We received 19 direct responses to this question, eight of which either strongly agreed or agreed with our proposal, seven neither agreed nor disagreed, and four either disagreed or strongly disagreed. Six of the seven respondents who neither agreed nor disagreed were WoCs who are not directly affected by our sewage sludge proposals. The reasons for not agreeing were:

- they do not consider sludge transport should be part of the separate sludge price control;
- they suggest that a non-binding price control, a shadow RCV allocation and separate accounting for sludge activities would deliver the same benefits as with a separate, binding price control;
- they disagree that the benefits of separation of sludge outweigh the costs; or
- they are yet to be convinced of the need for a separate price control.

Some respondents did not support transport being part of the separate sludge price control for the following reasons:

- that network plus needs to retain control of transport to avoid the increased risk of non-compliance in their wastewater treatment works due to sludge not being removed on time; and
- they divert tankers from transporting sludge to STCs to deal with network and wastewater treatment operational emergencies when they arise.

We asked in our consultation document: “Do you agree that future investment in relation to sludge transport, treatment, recycling and disposal should be exposed to volume risk and, accordingly, what are your views regarding the appropriate form of control in this area?”

Seven respondents agreed or strongly agreed with our proposal for future volume risk. Two respondents disagreed and six neither agreed nor disagreed, five of which were WoCs. Respondents suggested that volume risk might affect return for investors, and raised points about the complexity of understanding ‘non-market’ changes in sludge volumes, and the interaction between protecting pre-2020 RCV with volume risk. Some recommended postponing volume risk until 2025.

In our December consultation, we asked one direct question about system operation in sludge: “Do you agree with our proposals not to make any changes to the status quo in relation to system operation activities?” There were 11 responses to this

question; ten from WaSCs and one from a regulatory body. All respondents agreed or strongly agreed that the system operation function should not be changed. Three companies considered that separation of the system operator at this stage would be disproportionate and there should be time to see whether it could function effectively without separation. Some considered that a full benefit and cost appraisal would be needed to justify such a move.

A few respondents also considered that market codes needed to be developed to ensure a level playing field and an effective working market. One respondent also said that an effective market would call for consistent and transparent information to enable trades, develop pricing rules and standard contracts and deliver incentives to stimulate trading. One respondent was interested in the idea of extending system operation to catchment areas for the PR19 methodology.

We asked respondents whether they agreed with our proposals not to have any specific financial incentives to support sludge trading at present. Of the 20 respondents, 12 agreed or strongly agreed, seven neither agreed nor disagreed (six of these were WoCs) and one respondent strongly disagreed.

Some suggested that incentives could distort markets, while others said short-term financial incentives could stimulate trading and kick-start the market. One respondent said the need for financial incentives would depend on the pricing rules for establishing sludge trades.

4.5.3 Our review and analysis

The majority of respondents affected agreed with the principle of a separate price control and most of the reservations were about its definition or because they wanted more information on how it would be set. We have considered whether a non-binding sub-cap would give the same management focus and clarity of costs, but a binding price control is a better option for facilitating a transparent market where third parties can be confident of a level playing field with no cross-subsidy between the monopoly WaSC activities and sludge services. It will also focus incentives on incumbent companies to encourage them to explore commercial opportunities. Market activity and the associated efficiency benefits of a non-binding price control would be less than that anticipated from a binding price control arrangement, and the costs would be similar. However, sludge markets will take time to develop and may be localised, so there is still a need for price controls for sludge, rather than removing sludge from price controls altogether. With no price control, there is the potential for unregulated behaviour that could adversely affect customers.

Although we understand that sludge producers (that is, the network plus elements of the appointed company) will want to control when sludge is removed from their wastewater sites, we do not see that this makes a case for keeping sludge transport in the network plus activities. We discussed this with the sludge working group. Because it is activity already open to markets, we think it should form part of the sludge control. As negotiations and contract conditions are the responsibility of the companies, it will remain their decision whether to contract with third parties for sludge transport activities, or to use their own sludge transport fleet. Customers expect transport costs to be managed efficiently, however the services are procured. Any use of sludge tankers to provide operational emergency assistance to network plus could be accommodated in contracts. It is the responsibility of companies to ensure that their preferred procurement method gives enough scope for emergency situations.

We address some of the concerns around RCV stranding in the section on RCV below. In summary, though, we do not consider that there is a strong case against our preferred approach of setting a separate binding price control for sludge.

An approach that brings management focus and response to commercial incentives is equally appropriate for companies whose areas are wholly or mainly in England or in Wales.

The form of sludge control

As set out above, we considered three possible forms of control for sludge. Any of these would be set for PR19 using a building-block approach – based on RCV, a return on RCV (weighted average cost of capital, WACC) and totex.

A total revenue control would set a total allowed revenue for the sludge business. In its most basic form, this would set an allowed revenue of £X million + CPI ± K% per year. Changes to volumes of sludge treated would not affect this basic revenue control. In order to include a volume effect, an adjustment factor – that could be set at the average or marginal cost – could be included.

An average revenue control would set an allowed revenue for each unit of sludge treated, so that any volume adjustment would be more explicit and automatic. An average revenue control leaves flexibility with the WaSC to set prices differently for different types of sludge (based on quality, location, and so on) provided that, on average, revenues do not exceed the average revenue control. A price cap in contrast, would set a maximum price, or a basket of prices for different products (a ‘tariff basket’), that could be charged for each unit of sludge treated.

A total revenue control with no volume adjustment factor would not subject the WaSC to any volume risk, and so would fail to meet this objective for the form of control. Introducing a volume adjustment factor, as was done for the household retail control for PR14, would subject WaSCs to some volume risk, but this would be less direct than the average revenue control or price cap approach. We therefore consider that a total revenue control with or without an adjustment factor would not achieve our objectives as well as either of the other approaches.

An average revenue control would introduce some exposure to changes in the volume of sludge produced. This effect would be more direct and transparent for other market participants to see than a total revenue control with adjustment factors. The average revenue control requires information on total costs and total volumes to set effectively. WaSCs should be able to provide this information to a sufficiently high degree of accuracy for the next price review.

An average revenue control is effectively equivalent to a tariff basket price cap for which there is no maximum price on any one tariff, provided the average price is less than the allowed revenue. This leaves full flexibility to set tariffs with water companies, consistent with our approach to regulation. It also reduces data requirements for setting the control.

An average revenue control should help WaSCs to develop charges for sludge services and support more commercial approach to sludge. This is in contrast to a pure total revenue approach where there would be a broad revenue allowance without links to the service it pays for. An average revenue control should also help to improve information on sludge volumes, which will be useful for all market participants.

A tariff basket price cap would require separate prices to be set for treating each type of sludge, unlike average revenue controls, that only need to allow sufficient revenue at an aggregate level. Setting a tariff basket price cap therefore requires more detailed, and higher quality, information. At the moment, there is insufficient information to enable us to set this sort of tariff basket price cap.

We conclude that an average revenue control is the most appropriate form of control for sludge in England and Wales. An average revenue control will provide a link between the allowed revenues and the actual quantity of sludge in the market, which is key to providing a link between the price control and the wider market. This will provide incentives for companies to optimise the processing of sludge within and outside their facilities. This is beneficial because this risk is best managed by companies rather than customers.

The volume risk in the 2015-2020 price control period will, in our judgement, be limited. Because WaSCs will still have direct control over who treats their sludge – themselves or third parties – we do not consider there to be any RCV stranding risk. Instead, the volume risk comes from variations in sludge produced by treating wastewater from the WaSCs' domestic and business customers.

We think it is most beneficial to use the same form of control in England and Wales. This will enable Dŵr Cymru to work effectively with other providers of sludge transport and processing. The markets we are aiming to support through these proposals are possible under the current legal framework that is consistent across England and Wales, and does not depend on legislative changes in the Water Act 2014. Therefore, there is a case for a consistent approach in England and Wales.

Using the same form of control for companies whose areas are wholly or mainly in England and wholly or mainly in Wales will also allow us to make effective cost comparisons and set appropriate efficiency challenges in both jurisdictions. This is important because the Welsh Government's strategy puts an emphasis on using regulation to protect customers. Having a consistent approach and consistent data across Wales and England will allow us to do this most effectively. Using a consistent approach across England and Wales will also mean that if the legislative boundaries were to change to align with national boundaries, our approach would not need to alter. This would make managing the transition easier.

For PR24, we will review our approach to setting price controls. We will consider the scope for stepping back from price control regulation where effective markets emerge, and the scope for using market price information where price controls remain.

We explain in Appendix 2 how the average revenue control could work in practice.

Defining the sludge control within the licence

In order to implement a separate binding price control for sludge, we need to make a licence modification to condition B of the licence.

We have considered what type of modification might be most appropriate in defining the form, nature and duration of the sludge price control. In the section immediately above, we explain the form of control we expect to implement for PR19. We also explain how the form of control might change into the future as better information is revealed and if effective markets emerge.

As a result, the licence modification to allow separate binding controls should not be unduly prescriptive about the form of the sludge price control. Entrenching a high level of detail on the working of the control in the licence would not be appropriate, given the early stage of market development, the scope for future evolution of the sector and the need for the price control to be able to accommodate these developments. As set out in the sludge annex, further work may be required on the preferred volume measure for the control and it would be desirable to be able to accommodate this in the price review methodology. Consequently, not being unduly prescriptive on the form of control in the licence would be in the best interest of customers. This would work in a broadly similar way to the existing retail price control condition, which was used for new controls introduced at PR14, in similar circumstances where working of control required development and where regulation needed to be able to accommodate evolution of the market.

- As with retail, we do not see any advantage to setting a longer price control than five years, but as markets develop, a price control of less than five years' duration may be helpful to enable the industry to adapt to changes in sludge markets. We therefore want to consider an approach which would allow price controls to be set for five years or less in duration, although for PR19 we propose to set a five year control.
- We expect the licence to limit what would and would not be included in the sludge price control. We therefore propose to adopt the same approach as with the designation of retail activities and provide details of the definition of sludge in the regulatory accounting guidelines (RAGs), which will be reviewable by the CMA in the event of a reference. But, as with the existing approach to retail controls, we propose a less prescriptive approach so that we can confirm the detailed definition of sludge controls through the price review methodology. Our experience of setting retail controls was that issues in defining of activities emerged after the licence modification was agreed. Consequently, the ability to fine tune the definition without requiring a new licence modification was a vital step that was in the interests of both customers and companies.

We are mindful that there is a balance between ensuring the licence is not unduly prescriptive and a perception of uncertainty in what we intend to do. However, we note that the current licence condition is not very detailed, with nearly all the detail of how the price controls work set out in our price review methodology, not the licence. Equally, through our early and detailed engagement on our proposals companies already have clarity about key aspects of what our approach will be. For example, we have confirmed:

- the form and duration of sludge control for 2020-25;
- the form and duration of wastewater network plus control for 2020-25; and

- all wholesale revenue will be inflated (by CPI/H).

It is also important to note that we do not seek a less prescriptive approach for the wastewater network plus control. We would expect the licence modification to include a similar level of detail on the form, duration and nature of control of the network plus control as the current condition B describes for the existing wholesale control.

System operator functions and trading incentives

All respondents supported our proposals for keeping the status quo for system operation of sludge activities. We agree that any formal separation of this function should not happen without seeing how an effective market develops and evolves. We also note that broader system operation functions, including cross-company boundary trading, will be supported by the proposed market for sludge services.

We agree with respondents that it is important for entrants and incumbent companies to operate on a level playing field. This is important to ensure that markets develop effectively with maximum benefits for customers and the environment. In December, our preferred approach included improving information, and we are currently working with stakeholders on its design. We have provided more information on this in Section 4.4.1. Although pricing rules and standard contracts could reduce transaction costs and provide consistency and a transparent framework, they could also limit the type of trade between market participants. At this point, we consider it best to allow flexibility for parties to make arrangements that fit their own circumstances. We will monitor developments and consider whether pricing principles or rules and standard contract terms would be better for market development in the future.

In terms of sludge trading incentives, current rules on non-appointee revenues and transfer pricing provide strong incentives for parties to enter into trades by retaining benefits from trading activities. It is not therefore obvious that further incentives are required to incentivise efficient trading. We will consider further our approach to non-appointee revenues and transfer pricing to make sure they are fit for purpose and best placed for evolution of the sludge market as part of further work on the market and the price review methodology.

4.5.4 Our policy decisions on a separate control for sludge

We have decided:

- to set a separate binding price control for sludge activities at PR19;
- to set the sludge price control at a company level rather than at site level;
- to set a five-year price control at PR19, but we will consider whether a control is appropriate in future and what the length of any control should be;
- to set an average revenue control to regulate sludge, which will need a measure to reflect the volume of sludge produced by WaSCs;
- to leave sludge system operator functions with incumbent companies. We will monitor the markets to see how effectively they develop and consider any changes to the system operation function in the future; and
- not to introduce sludge trading incentives at PR19.

The introduction of a separate, binding price control for sludge will help in developing a sludge market between appointed companies and with third-party suppliers.

We expect sludge markets to develop gradually. Wastewater and sludge service providers may initially prefer to use their own assets for sludge treatment. This is because of the sunk costs of their pre-2020 sludge assets, concerns about losing control of the sludge treatment process to a third-party and managing risks. However, as old assets are replaced with new, as efficiencies are introduced and as appointed companies start to negotiate with each other (including managing risks), wastewater operators will have an incentive to select the most cost-effective provider for sludge treatment based on the unit cost of treating sludge, taking account of revenue generated from process and transportation costs. The efficiency from a market approach should ultimately lead to lower prices for customers, better outcomes for the environment and a more resilient system. We expect the number of sludge market transactions to increase and estimate that the net present value (NPV) of these benefits over 30 years could equate to £780 million.

4.6 Our approach to historical RCV and new investment in sludge

As well as consulting on RCV **allocation**, we consulted in December on our approach to RCV **protection**. This was because our regulatory changes designed to encourage greater use of markets in sludge services could create a risk of stranding assets, where revenue from sludge activities is insufficient to recover efficiently incurred sunk costs. We explained our view that potential asset stranding risk is low for sludge, and primarily related to sludge treatment, because the market scope is naturally limited to certain locations.

4.6.1 Our December consultation

In our December consultation, we proposed to extend our protection up to 31 March 2020 for historical, efficient investments included in the RCV. Beyond this date, investment in sludge assets should be incurred 'at risk'.

For sludge controls, we said that we proposed to expose companies to volume risk for sludge during 2020-2025. We also said that, when setting prices in 2024 and beyond, we would consider at that point whether controls should continue to be set on an RCV basis or by using an alternative approach such as a gate price. We stated that the RCV at risk should be allocated using a focused approach so that controls would reflect the value of the assets. We anticipated that the scope for sludge markets would be localised and that, in the early stages of market development, the risk to historical costs would be limited. We considered there to be no prospect of stranded sludge assets in the 2020-25 period because allowed revenues would still be set via a regulated allowance for efficient costs. We are not requiring companies to enter into trades where it is not efficient for them to do so. However, we would expect companies to trade where efficiencies are expected – where there are net commercial advantages from trading.

Despite no risk of asset stranding in PR19, we noted in our December consultation that we considered it prudent to start planning for regulatory mechanisms to enable us to protect pre-2020 investment in the RCV.

The approach we suggested for protection in both sludge and water resources was to guarantee recovery of RCV via the respective network plus controls. One mechanism would involve identifying and guaranteeing an appropriate level of revenue for companies, based on the costs protected. Any shortfall in revenue would be recovered through a reconciliation mechanism at the next review.

4.6.2 Responses to our December consultation

There was very strong agreement with our proposal to protect efficient investment included in the RCV up to 31 March 2020.

Where concerns were raised, these were around getting clarity in the following areas:

- how the guarantee mechanism would work;
- the risk to RCV for post-2020 investments in sludge;
- how efficient investment would be determined in the future; and

- how the pre- and post-2020 asset bases would be distinguished.

Most respondents disagreed with our view that sludge assets would not be stranded in PR19. Of the 17 company responses, 11 felt there was a risk of sludge asset stranding, two did not have a view either way, two others gave no response on this point and two agreed that there was no risk of stranding.

A number of respondents referred to the potential for trading of sludge between incumbent WaSCs, with the implication that this would reduce appointed sludge treatment volumes and lead to sludge assets becoming stranded.

4.6.3 Our review and analysis

We are proposing that, for PR19, we continue to determine revenues for the sludge price control by reference to an RCV-based revenue allowance for pre-2020 RCV and associated run-off. All costs associated with this pre-2020 RCV will be used to calculate the total costs of treating a defined volume of sludge based on observed amounts of sludge produced. The resulting expected sludge volumes will be used to calculate a unit price to then calculate an average revenue control.

In our December consultation, we proposed a specific mechanism to guarantee any shortfall in revenue from the pre-2020 RCV with a reconciliation adjustment at the subsequent price control that would allow revenue to be recovered from the network plus control.

We discussed how this guarantee mechanism could operate at the sludge working group in March, based on a proposal developed by Thames Water. Some companies then gave us further feedback on the guarantee mechanism. We consider it unnecessary to introduce the mechanism at PR19 because it could distort the market and lead to perverse incentives (which we discuss further in Appendix 2). We also consider the risk of asset stranding in 2020-25 to be within management control.

We recognise the importance of regulatory certainty for the sector. The introduction of a separate price control at PR19 for the development of sludge markets is part of a longer-term approach. Our proposals at PR19 will encourage companies to seek opportunities for sludge trading, particularly in developing new capacity. We consider there to be no additional risk associated with investment in the existing RCV as at 31 March 2020 because companies will have the choice about whether to trade or construct new assets and price limits will be determined on the basis of an allowance to cover efficient costs to treat all sludge produced, similar to our PR14 approach.

While the sludge controls will be exposed to volume risk (and new investment post 2020 will be at risk), there is no additional risk of loss associated with investment in assets that are within the pre-2020 RCV.

Beyond 2025, a guarantee mechanism may be required, this will be contingent on the future form of the sludge price control – for example, moving to a gate fee approach could introduce a stranding risk. We will consider development of a mechanism alongside the development of the form of control for PR24.

4.6.4 Our policy decisions on the historical RCV and new investment in sludge

We will not create a specific regulatory mechanism for guaranteeing the sludge RCV during PR19, as our proposed approach to setting the price control creates no additional risks of asset stranding. An explicit regulatory mechanism could introduce distortion to sludge markets and could result in perverse incentives.

We note, however, the risks associated with stranding new assets could change in subsequent price control periods. We will assess this and consider developing a stranding mechanism alongside the implications for the cost of capital at PR24 as part of a broader evaluation of the approach to the regulation of sludge services.

4.7 RCV allocation for sludge

We confirmed earlier in this chapter our intention to establish a separate price control for sludge. This raises the question of whether, and how, to allocate the historical RCV associated with sludge assets. The RCV allocation to sludge assets will be the basis of the new sludge price control.

In our December consultation, we explained that, in principle, there is a range of options –from leaving 100% of the legacy RCV within network plus control, through to allocating all the RCV to the new sludge price control. Below are our four main reasons for considering an allocation of the RCV to be beneficial.

- **Ensuring a level playing field for sludge transport, treatment, recycling and disposal** so that third-party service providers have clarity and confidence that they are participating in markets on equal terms with incumbent companies.
- **Ensuring a level playing field for wider markets and protecting the interests of wastewater customers where WaSCs are involved.** A WaSC could use legacy assets to offer services to customers outside its existing area or for non-

regulated activities. One example is providing organic waste treatment outside the core area of wastewater treatment.

- **Avoiding over-recovery of gains from legacy asset sales/purchases** by incumbent companies.
- **Maintaining consistency** between charges and cost recovery.

The legacy RCV is not directly linked to any specific sludge transport, treatment, recycling and disposal assets, although under accounting separation rules, companies are required to recharge for using assets when providing non-appointed services. This includes capital costs, implying an allocation of the RCV in these charges. So, if the RCV is to be split, we will need to decide how this is to be done. In December, we outlined two possibilities: a focused approach, where the RCV allocation is based on the value of the assets used (for example, as represented by their net modern equivalent asset valuation (MEAV), and an unfocused approach, where RCV allocation is based on the proportion of the assets to be separated relative to the total assets of the business.

Considering the options for allocating RCV, we said that we needed to consider the decision whether to include the RCV discount when water assets were privatised, the impact on customers (both directly via bills, and indirectly via, for example, impacts on incentives for new entry), the relationship between RCV allocation and price signals, and the robustness of the cost basis used for allocation.

4.7.1 Our December consultation

We proposed in December that a focused approach would be the most appropriate for allocating RCV to sludge. This reflects our view that, given the nature of sludge treatment with relatively short asset lives and technological development, there is a strong likelihood of markets emerging. A focused approach would mean that the RCV reflects the economic value of the assets (depending on the valuation approach) and will ensure capital costs are reflected in sludge charges. This would give the right signals to third-party suppliers and ensure competition in wider waste markets was not distorted. We decided a focused allocation would ensure wastewater customers still benefited from the privatisation discount and that this benefit was not transferred to customers outside the sector. This is consistent with our four objectives above.

4.7.2 Responses to our December consultation

The majority of respondents either supported or were neutral regarding our rationale for allocating the RCV using a focused approach. Where respondents disagreed, the reasons were as follows.

- They disagreed that the RCV needed to be allocated to achieve the desired outcomes. Three respondents suggested that a separate price control was not necessary and a shadow RCV could be used to create an efficient market for sludge.
- They felt there was a risk of creating uncertainty for investors by changing the basis for calculating returns.
- They wanted to ensure that assets were revalued using a consistent approach.

A number of respondents suggested that valuations should reflect the true value of the underlying assets. They suggested that a level playing field, free of market distortions, could only be ensured if this true value was achieved.

4.7.3 Our review and analysis

We confirm that the pre-2020 legacy RCV will stay with the incumbent water company. The proposed allocation of RCV to sludge transport, treatment, recycling and disposal is to allow for calculating and determining price controls. We are not proposing any formal separation of sludge or allocation of the RCV to different legal entities. While the RCV will be allocated to separate price controls, we still propose that a single RCV for the incumbent water company should be calculated for reporting purposes.

Some stakeholders suggested that RCV allocation was not necessary and sludge markets could be developed through existing price controls, with a shadow allocation of RCV. While we agree that allocation of the RCV is not the only method of introducing cost-based pricing into sludge markets to encourage trades between WaSCs and with potential new entrants, we acknowledge there are benefits. These are set out below.

A separate, binding price control for sludge activities will help in developing markets as a result of increased management focus and separate reporting of information. These benefits will be greater than if activities were regulated as a sub-control within wholesale wastewater activities – using a shadow RCV. Respondents that favoured a shadow RCV said this option would be more flexible as none of the RCV would actually be allocated. However, a similar cost and effort is required to set a shadow

RCV as for a full RCV allocation and that the costs of a binding allocation are low. A clear allocation of RCV for PR19 gives investors and companies greater certainty about the future regulatory environment – a sludge price control based on an explicit allocation of wastewater RCV to sludge activities.

Allocating the RCV is the best way to protect customers against the risk of over-recovery of assets by their supplier. At present, incumbent companies have to allocate capital costs when transfer charging for non-appointee services. Without an RCV allocation, we would not be confident that companies were recovering appropriate costs.

A level playing field is required if efficient sludge markets are to develop. If assets are overvalued, the unit price for sludge treatment, recycling and disposal will also be overstated. The short-term results of this will probably be an increase in sludge treatment costs for customers (although this would be offset by a decrease in wastewater costs). Appointed companies will be disadvantaged compared to new entrants and potentially to other incumbent providers (depending on whether they also overvalue their assets). In the long-term, inflated asset values will help new companies, such as OOWs, enter the market. These will have lower capital cost bases and will be able to offer lower wholesale sludge treatment prices, leading to lower customer charges.

Conversely, if sludge assets are undervalued, the unit price for sludge will be lower, leading to lower charges for sludge customers, offset by higher charges for wastewater network plus customers. This could result in appointed companies for sludge having lower capital costs than other organic waste (OOW) companies and incumbent water companies could use this to their advantage in competing with OOWs. Companies may have an incentive to sell undervalued assets to capture the actual value of the assets, which may not benefit customers.

There are a number of alternative options that could be pursued for the separation of the RCV on a focused basis. These options include:

- using the MEAV from PR09 indexed to current prices. However, we noted that companies made different assumptions for equivalence, indexing costs and remaining asset lives when conducting the PR09 valuations. This is unlikely to be a viable approach;
- a single organisation to value sludge assets for the industry to ensure consistency across all appointed companies. This option might be perceived as reducing company ownership, albeit enabling a high degree of consistency;
- appointed companies value their own assets and provide assurance around valuations. Appropriate guidance, asset valuation cross-checking/triangulation

from other methodologies and valuation auditing and assurance could be used to help promote a consistent approach across companies. This approach is also consistent with our wider strategy that companies take responsibility for provision of accurate data, subject to assurance and risk based review; and

- a centralised (Ofwat) unit cost approach. This would lead to a single industry valuation and might be based on valuing the assets required for an efficient sludge process, drawing on benchmarking data based on up-to-date sludge technology, rather than a valuation based on current sludge assets.

We will consider the objectives and issues associated with valuing sludge assets for the purposes of setting a separate price control for sludge at PR19. We will discuss the merits of the alternative approaches with the sludge working group before developing an approach to asset revaluation. We will also discuss the recommendations of the [report](#) by Cambridge Economic Policy Associates Ltd (CEPA) on the review of sludge and water resources. The report said these recommendations should be considered if carrying out an asset revaluation for RCV allocation to the sludge price control for PR19.

Revaluation of sludge assets – a summary of points raised by CEPA

CEPA recommended that the following be considered before asset valuation policy decisions are made:

- whether assets are assumed to be built on existing or greenfield sites;
- whether valuations should be at the individual asset level or at a process level;
- MEA or replacement of current assets;
- boundary issues between sewerage and sludge;
- whether and how economies of scale should be incorporated;
- how Management and General (M&G) assets are allocated;
- how to value abandoned, decommissioned or mothballed assets; and
- whether net or gross MEA valuations should be sought.

CEPA recommended that a joint company/Ofwat working group consider these valuation issues more fully.

4.7.4 Our policy decisions on the RCV allocation for sludge

We have concluded that, as part of our wider proposals for developing markets for sludge, the RCV should be allocated to the sludge price control on a focused basis.

We will consult on the methodology to be used for allocating the sludge RCV, including the possibility for a revaluation exercise, through the sludge working group.

4.8 The implications of our decisions on the balance of risk

4.8.1 Our December consultation

In the December consultation, we examined the relative impact of each element of the water and sewerage value chain on the balance of risk and reward – and the cost of capital – focusing particularly on areas where markets could provide the greatest benefit, including sludge. Our assessment drew on the work we commissioned from [PwC](#), who advised on how risks are spread across the value chain.

PwC assessed the cost of capital impacts, based on systematic risks reflected in a company's beta (and consequently the cost of equity), and risks that are specific and reflected in a company's gearing.

We suggested that creating separate controls under common ownership did not, of itself, lead to a discernible change in risk, provided incentives were consistent across price controls. This was supported by the Competition and Markets Authority (CMA) when determining Bristol Water's PR14 price limit referral²². We stated, though, that the cost of capital could increase if separate controls changed the intensity of regulation (for example the replacement of a revenue control with volumetric control without any mitigating factors).

As we proposed a sludge control involving volume risk, this would be likely to increase risk to water companies because they would be exposed to some of the same systematic demand risks as the rest of the economy. However, PwC noted that beta increases resulting from the introduction of volume risk were broadly offset by the relative increase in the capital intensity of sludge in a contestable part of the value chain, which arises as a result of RCV allocation. This leads to a reduction in operational gearing, which PwC suggested reduced risk and compensated for volume risk.

²² Competition and Markets Authority (2015), Bristol Water plc: reference under section 12(3)(1) of the Water Industry Act 1991, para 10.218.

In terms of risks from opening the sludge market, we noted that trading arrangements were voluntary. Companies would be expected to only enter into arrangements that were beneficial to their interests. So, as stated earlier, there was no risk of stranding in the 2020-25 period. We also noted that the scope for gains or losses would be limited due to the co-location of assets and as a result of transport costs.

We acknowledged that resetting controls at PR24 or evolution to market pricing could introduce asymmetric risk with an impact on the cost of capital – that is, where trading revealed new information about the efficient cost of untraded services and this information was used to reset price controls. It could be argued that companies are currently exposed to risks around regulatory adjustments disallowing inefficient costs. We said we would consider the impact of changes to the market on the cost of capital when we reset controls in PR24.

4.8.2 Responses to our December consultation

Responses to the questions we raised on the impacts of a separate, binding RCV-based price control for sludge on the balance of risk and reward were mostly high-level. Some respondents suggested it was difficult to give a view on the potential impact of proposals at this stage.

Where respondents commented on the impact on the cost of capital, it tended to be a more general response to our proposals rather than the specific impacts on the cost of capital for sludge. While not disagreeing with our analysis, two respondents suggested the regulatory method and form of control were the fundamental drivers of risk for the sector. One respondent suggested, for example, that differences in business risks and operational gearing were relevant, but generally less important, than the regulatory incentives and risk mechanisms and the investor perception of RCV risk in each part of the value chain. One respondent considered there was no compelling evidence for significantly different risks that are not diversifiable for investors in different parts of the value chain.

Five respondents suggested that the overall changes proposed in our December consultation (including those for sludge) were likely to increase the cost of capital and four respondents referred to a comment by Moody's that the reforms could be credit negative.

One respondent agreed with PwC's analysis that it was unlikely competition would have an impact on systematic risk. However, they stated that competition did introduce greater downside risks for companies, and this meant that there would

have to be correspondingly significant opportunities for upside benefit for companies to earn their cost of capital. The company suggested the appropriate way of dealing with this depended on the overall package and an uplift to the cost of capital, along with opportunities for upside benefit, should be considered in the regulatory approach. However, the respondent noted that, without further evidence that the asset beta for sludge was materially different to wholesale, they would support applying the same asset beta across the value chain.

Another respondent suggested there would be differing costs of capital across the assets – infrastructure having the lowest, followed by water resources. Sludge assets were the highest of the wholesale assets, with the retail costs of capital being nearly twice that of wholesale.

4.8.3 Our review and analysis

As set out in previous sections, the sludge control should be subject to volume risk from 1 April 2020 as a step towards developing markets for sludge.

With the average revenue control set out above, WaSCs will be exposed financially to variations in the volume of sludge produced in the course of their sewage treatment activities in their area of appointment. However, a WaSC will get the same revenue under the price control irrespective of whether it chooses to treat and dispose of this sludge using its own assets and infrastructure or whether it arranges for sludge treatment to be carried out by another incumbent or new entrant. Only changes to the total volume of sludge produced will affect the total revenue under the average revenue control.

There is a risk that the volume of sludge produced could increase or decrease due to changes in the economy. The rate on which the sludge control is set represents average expected volumes through the price control period. Any increase or decrease in the actual volumes of sludge produced against forecasts may, at least in part, be non-diversifiable, as some of the variation may be associated with the wider economic cycle. This will lead to an increase in the asset beta and the cost of capital. PwC estimate this might increase the cost of capital by 0% to 0.4% for a transitional period where investors do not view potential upside from reform, but this could substantially be negated where investors anticipate potential gains from reform. However, in its analysis, PwC concluded that the impact on beta associated with a shift from a revenue control to a volumetric price cap is broadly offset by an increase in the capital intensity as a consequence of a focused RCV allocation.

We discuss this risk further in the Appendix 2. To address any perceived asymmetric risk, which would have an impact on investors' expected returns (and so the cost of capital for the sludge control at PR19), it is important that the average revenue control is set against an appropriate central assumption of volume, which would give companies an equal chance of over- or under-recovering against factors that drive the overall sludge market. We will consider this issue further as we consider the methodology for PR19.

4.8.4 Our policy decisions on the balance of risk

We consider there to be no risk associated with stranding of new assets in 2020-25 as a result of market share loss. There is increased scope for upside returns to companies from increased trading and the scope for market gains or losses remains within the control of company management.

It is possible the introduction of the average revenue control exposes companies to some non-diversifiable risk associated with the wider economic cycle, but based on evidence from PwC this risk is offset by the increase in the capital intensity as a consequence of a focused RCV allocation.

We recognise the importance of setting the average revenue control by reference to a central view of expected volumes of sludge. We will consider this further through the sludge working group.

On the basis of evidence that is currently available, we do not consider that the introduction of an average revenue control will lead to an overall increase in the cost of capital for wastewater activities in 2020-25. We will, of course, consider the appropriate cost of capital for sludge services along with other price controls as part of PR19.

4.9 The impacts of our decisions

In this section, we summarise the impacts of our proposals for sludge. We first recap our views from our December consultation and explain the responses we received. We then set out more detail about our impact assessment.

4.9.1 Our December consultation

In the December consultation, we presented a qualitative and indicative impact assessment of our preferred sludge market design option. We suggested a medium level of net benefit would result from a balance of the improvements and costs set out below:

- efficiencies within company boundaries from management focus and changes in technology;
- efficiencies from trading between WaSCs and with OOW companies;
- improvements in resilience, gained from more service providers in the market;
- more renewable energy generation;
- increased use of biosolids, displacing fertiliser in agriculture;
- smaller carbon footprint for sludge service;
- costs of implementing regulatory changes and setting up markets;
- on-going costs of providing information and running a separate price control, as well as potential sludge financing cost impacts; and
- potential costs from an increase in the potential for service providers to go into administration.

4.9.2 Responses to our December consultation

We received few responses to our impact assessment questions. One respondent expressed surprise that the net benefit for sludge was lower than for water resources. Their view was that the potential for trading was greater for sludge even if each sludge trade was of a lower value than a water resource trade. A further view was that we may have underestimated the costs of our sludge proposals. We discuss this further in the Appendix 2 for individual cost items.

The other main points raised related to our quantitative impact assessment, including potentially overstating the benefits in the sludge trading model and that the impact assessment should be extended to all options rather than just the preferred option.

Some respondents were concerned about the duty of care for sludge disposal when third parties provided the service. One respondent also gave a list of key activities it considered would be required to implement our proposals and suggested these activities would help in ensuring all costs had been included in our impact assessment.

4.9.3 Our review and analysis

We have considered the benefits and costs of the options in our impact assessment and these are detailed in the preceding sections and in more detail in Appendix 2. Our preferred option outlined in December is still the one that would give the greatest net benefit, taking into account the risks and uncertainties.

4.9.4 Our updated impact assessment

In line with our general approach set out in Appendix 6, Table 10 summarises the expected benefits and costs of our preferred policy option (versus the alternative 'do nothing' scenario). Details of the inputs, assumptions and calculations that support these estimates, as well as the risks and uncertainties of our sludge policy package are also set out in Appendix 2.

Table 10: Summary of estimated costs and benefits for the final preferred policy package against the 'do nothing' option (2015-16 price, NPV over 30 years)

	Benefits		Costs	
Elements that have been quantified	Productive efficiencies: Greater management focus and trading between OOWs and WaSCs will result in improved performance, reducing overall costs.	£230 million to £690 million	Market set-up costs.	£6 million to £15 million
			Ongoing costs of the sludge market.	£12 million to £18 million
	Ongoing efficiencies: Over time, further reduction of costs is likely through increased uptake of innovative solutions and new technologies.	£142 million to £697 million	Cost of the sludge price control.	£7 million to £11 million
			Ofwat regulatory costs.	£4 million to £14 million
	Total scope of quantified benefits	£372 million to £1,386 million	Total costs for England and Wales	£29 million to £58 million
	Wales	£13 million to £48 million	Wales	£3 million to £6 million

	Benefits		Costs	
	England	£359 million to £1,338 million	England	£26 million to £52 million
Elements that cannot be quantified	Increased utilisation of AAD technology and increased sludge biomethane to grid will contribute to a reduction in the UK's greenhouse gas emissions; partially negated if transport of sludge increases.		Company and third-party transaction costs associated with individual trades.	
	Greater resilience through integration with the wider OOW sector and creation of more value from sludge. Also increased resilience of the sector to unplanned outages.		Further steps may be required to ensure that all providers adhere to safe disposal of sludge to maximise environmental benefits.	

4.9.5 Our impact assessment conclusion

Having considered the impacts of the different policy options, we estimate that our policy package will generate the greatest net benefits, taking account of the risks and uncertainties involved and demonstrates that our policy package is in the public interest. Based on the evidence gathered, our preferred option can create efficiencies through greater trading between WaSCs and with OOW companies, and incentivise more innovation, which should also benefit the environment.

Separating the price control and facilitating access to market information will enable companies to better understand and compare their performance against others, as well as identify more ways to drive efficiencies.

Our proposals will benefit companies in both Wales and England. Our modelling suggests that trading could occur between companies in Wales and England because of differences in operating expenditure, which could benefit customers. Greater use of trading should also optimise investment in new infrastructure.

4.10 Summary of our decisions

We confirm our decisions to move beyond waste as follows:

- We will use our regulatory framework to **promote markets for sludge**.
- We will make **market information** available to facilitate efficient provision of sludge transport, processing and disposal across company boundaries and in the wider waste market.

- We will set a **separate binding price control** for sludge activities in the 2019 price review (PR19).
- We will set the sludge price control at a **company level** rather than site level.
- We will set a **five-year price control** at PR19.
- We will set an **average revenue control** to regulate sludge, which will reflect the volume of sludge produced by WaSCs.
- We will keep the sludge **system operator functions** within the incumbent companies.
- We will **not introduce sludge trading incentives** at PR19.
- We will use a **focused approach to allocate the regulatory capital value** (RCV) to the separate sludge control.
- We will not create **a regulatory mechanism** for guaranteeing the sludge RCV during PR19.

5. Tackling water scarcity

5.1 Our decisions

- We will use our regulatory framework to **promote markets in water resources**.
- We will require incumbent companies to **make key data available on supply-demand deficits and water resource costs in a consistent format**. This should be available on company websites with Ofwat providing a webpage that signposts where that information is held.
- We will require each incumbent company to **publish a bid assessment framework** setting out its policies and processes for assessing bids from third party providers of water resources and leakage/demand management services.
- We will **develop a new access-pricing framework** for England to help third parties enter the market if they can provide new water resources as efficiently as incumbents. This will be implemented with a combination of cost-based charges for network plus services and a compensation payment that reflects the incumbent's forward-looking incremental water resource costs.
- We will **introduce separate binding price controls** for water resources and network plus.
- We will **provide regulatory capital value (RCV) protection** for efficient expenditure up to 31 March 2020.
- We will **require incumbent companies to bear some under-utilisation risk** for investment in new water resource capacity from 1 April 2020, and are consulting further on how this will work in practice.
- We will **require RCV allocation** to enable the separate water resources price control. We will use an unfocused approach, but each company will propose its own allocation to the water resources control to Ofwat for review.
- **System operator functions will be carried out by incumbent companies** and other market participants, with a broader role to be played by markets.

5.2 Introduction

In this chapter we set out our decisions on the future regulatory framework for water resources. It builds on our December consultation and the responses we received from stakeholders. We begin by reviewing the water resources sector in England and Wales. We then discuss our long-term vision, the challenges and opportunities in the sector, and our immediate priorities, before moving on to our specific policy

proposals. For each policy area, we reflect on what respondents in the December consultation told us and set out our decisions, along with the thinking behind them. We set out issues for further consultation in Appendix 3.

5.2.1 Our longer-term vision

As we noted in December, this is an area with scope to use markets to encourage companies to innovate, do more for less and make the best use of the resources available. These incentives should drive companies to look beyond the assets and systems they own to options for water trading with other companies, including non-water companies, and to other options available from third parties such as water efficiency schemes or reclaimed water provision. Overall, we expect water resource markets will help bring benefits for customers, investors and the environment.

In particular, we expect to see:

- more third party provision of new water resources and innovation in third-party demand-management services;
- incumbent companies providing and managing water resources more efficiently. This will be achieved through more (and more transparent) information and management focus;
- more clarity for customers, regulators and stakeholders on costs, decision-making and the pressure on availability of water resources;
- innovation to provide greater resilience, by giving incumbent companies more options for meeting long-term challenges, greater flexibility in managing short-term shocks, and scope to target abstraction in areas of lowest environmental impact; and
- in areas served by companies wholly or mainly in England, a bilateral market in which wholesale providers of water resources negotiate directly with water retailers as the retail business market develops in line with the Water Act 2014. This will be supported by an access-pricing framework.

5.2.2 Challenges and opportunities

In our July discussion document and December consultation, we discussed the challenges and opportunities companies face. For water resources, these include the following.

- **Future supply and demand balance challenges** – a number of areas face an emerging gap between available supply and projected demand.

- **Environmental challenges** – especially water scarcity and environmental quality. Climate change and population growth will increase these pressures in the future.
- **Maintaining and improving resilience of systems and services** – recent experience has underlined the threat disruptive events such as drought and flood can pose to water company operations.
- **Customer bills and affordability** – our final determinations for PR14 will result in water and wastewater bills being 5% lower on average in real terms in 2019-20, compared with 2014-15. However, the challenges summarised above are likely to lead to upward pressure on bills.

As well as challenges, there are also **important opportunities**. These include optimising key activities and resources beyond traditional company boundaries – through water trading or third parties, for example. The opportunities are not only about doing things at lower cost, but also about making the best use of resources, improving resilience and finding new ways of doing things. Markets can inform, enable and encourage efficiencies and innovation for the benefit of customers and the environment. Therefore, while the refinements to our regulatory approach for PR14 provided clear benefits, there is a compelling case for our regulatory approach for water resources to evolve even further. The aim would be to address the challenges facing the sector and deliver efficiency improvements to benefit customers.

If we are to realise our shared vision of developing and maintaining trust and confidence in water and wastewater services, it is important that companies show they understand and are willing to respond to the opportunities available from the use of markets. It is also important that all stakeholders understand how our proposed regulatory approach aims to address the challenges facing the sector and are ready to help us shape the detail of our approach and its operation.

5.2.3 Our position and next steps

Our Water 2020 framework envisages two distinct types of water resource markets.

- A **bidding market model**, under which third parties submit bids for supply or demand/leakage management services to an incumbent water company to help it meet the future water needs in the company's water resource zone (WRZ) or zones.
- A **bilateral market model** in line with the Water Act 2014, in which third party providers of water resources (who could be out-of-area water companies or other third parties) contract directly with independent retailers in the non-household

market, and pay an access price to incumbent companies to use their distribution system and, if needed, treatment facilities. As the Welsh Government has decided not to expand business retail competition at this time, the bilateral market model will not apply to incumbent companies whose areas are mainly in Wales.

These two routes to the market can reinforce each other. The ability for water resource third parties to use the bilateral market model should help encourage incumbent water companies to thoroughly explore third-party offers made to them through the bidding market. Potential third parties who have been unsuccessful in bidding may find opportunities in bilateral markets. These market models are explained further in Appendix 3.

We also want to ensure that our approach to the economic regulation of water resources creates incentives that are challenging and do not distort the market. To help do this, a number of our policies focus on improving information and incentivising greater management focus.

By the time we next set price controls for wholesale services in the 2019 price review (PR19), we plan to have taken considerable steps towards these objectives. Our decisions set out in this document aim to bring greater clarity to water resources, making them a distinct and visible part of the water value chain and enabling greater diversity of supply. We expect that the increased use of markets will help to keep bills affordable and supplies resilient and increase the options for tackling environmental challenges.

5.3 Our market design for water resources

5.3.1 Our December consultation

Our December consultation paid particular attention to water trading between incumbent companies and looked at the scope for making greater use of markets in water resources. We noted that levels of trading between incumbent water companies has remained persistently low over time, at 4-5% of supply, even though there is potential for significant savings from increased water trading. This suggested that current levels of trading cannot be entirely explained by economics but are the result of barriers to trading.

We noted that the factors that affect water trading between incumbent companies also affect third-party options more widely. However, while there is some scope for third-party involvement in providing or sharing a water resource (from farmers and

brewers, for example), this is likely to be more limited than for sludge because water resources tend to be long-lived assets, most of the investment is sunk and demand growth is slow. It also reflects the fact that, unlike for sludge where demand and value could increase over time as new uses and technologies emerge, demand for water resources is generally linked to meeting peak conditions which are driven by population growth, consumption and weather effects (such as droughts and climate change).

These findings were supported by a study we commissioned from Deloitte LLP ‘[Water trading – scope, benefits and options](#)’ and by qualitative interviews with stakeholders who already, or could potentially, take part in water trading or providing water resources (a summary of the interviews is reported in Annex 1 of [Appendix 2](#) of our December consultation).

We also identified some specific issues with the development of bilateral markets in water resources. The opportunities for bilateral market entry depend on the framework for setting access prices for services required from the incumbent water companies. This enables third parties to compete in the market (for example, a third party may need to use the company’s treated water supply system to carry the water it abstracts and supplies to water customers). These prices are currently governed by the ‘cost principle’, which has been widely identified as a barrier to market development. The Water Act 2014 will, when the relevant provisions are brought into force, remove the cost principle from the Water Industry Act 1991 for companies operating wholly or mainly in England, replacing it with charging rules. The Welsh Government intends to retain the cost principle for access pricing at the present time.

Our evidence suggested that the key issues or barriers to a greater role for markets include the following.

- **Asymmetric information** – new market participants interested in identifying opportunities for trading face ‘search costs’ as well as an information barrier compared to incumbent water companies. There is also a perceived lack of transparency in the WRMP decision-making process.
- **Cost structure** – new water resources tend to be more costly than existing ones and incumbent water companies’ historical costs reflect a substantial RCV privatisation discount. As a result, there can be large differences between the historical costs of an incumbent company’s existing water resources and the costs of developing new water resources.
- **Culture and practice** – given low levels of trading, there may be a lack of interest from other parties to engage in trading. This may be reinforced by a wider regulatory framework, under which incumbent companies may perceive that owning supplies makes it easier for them to meet their obligations.

- **Existing legislation** – a number of features of the current market have been defined by legislation. The pre-Water Act 2014 requirements on access pricing and licensing are examples of this.
- **Regulatory incentives** – historically, evidence suggests that there has been a capital expenditure (capex) bias in investment decisions. There may also have been insufficient incentives for trading and/or interconnection. RCV protection may also introduce distortions.
- **Wider policy issues** – this includes concerns over security of supply, perceived risks to drinking water quality and uncertainty over abstraction licence reform. These wider issues may reinforce cultural barriers to trading.

These issues lead to the following problems. Following the December consultation, we have identified these more clearly.

- **Problem 1:** Incumbent company incentives are biased towards within-company solutions rather than markets/third-party providers to meet their water resource needs.
- **Problem 2:** Potential third parties may be deterred from bidding markets because of a lack of information, high transaction costs, an opaque WRMP process and perceived lack of interest in trading from incumbent companies.
- **Problem 3:** Entry under the bilateral market model is not viable, because of factors including the existing access pricing regime which makes it difficult to compete with incumbent providers, even when their costs are higher or similar.
- **Problem 4:** Market entry may not maximise value to customers, given the structure of price controls and the approach to the RCV.

We proposed a range of solutions to help tackle these problems.

- **An information platform and bidding framework** to support bidding by third-party water resource providers through the WRMP process (problems 1 and 2).
- **A new access pricing framework** to support the development of a bilateral market in areas whose undertakers are wholly or mainly in England (problems 3 and 4).
- **A separate binding water resources price control** based on an unfocused RCV allocation (problems 3 and 4).
- **A market and regulatory model that does not create new sources of risk for pre-2020 RCV, with more limited RCV protection after 2020.** There would be protection for historical, efficient investments included in the RCV up to 31 March 2020, with investment in water resources from 2020 onwards explicitly ‘at risk’ (problems 3 and 4).
- **A set of options to support market development** and tackle wider regulatory/policy and cultural barriers to trading. This included potential guidance

on contract issues and best practice/standardised model contracts, reviewing the regulatory approach to cross-company interconnection and reviewing water trading incentives (all four problems).

We also proposed that system operator functions in water resources should continue to be undertaken by the incumbent companies and other market participants, rather than an independent system operator. This was because our proposals for increased bidding of third-party resource options will facilitate a wider, out-of-area, approach to optimising supply. Taken together, our proposals are intended to promote better long-term decision making.

There is a full summary of our December consultation proposals across all policy areas and the alternative options in Appendix 3.

5.3.2 Responses to our December consultation

Our December consultation asked one overarching question: whether respondents agreed with our proposed approach to promoting markets in both sludge and water resources. We also asked respondents individual questions on each of the policy areas and we discuss the responses to these questions in the sections below.

Most respondents were broadly supportive of increasing the role of markets for water resources. This was true among the incumbent water companies and regulators, investors and consumer groups.

The main reasons for agreement included the potential for markets to deliver lower costs, prices and better service, adding value for customers, and to improve resilience. There was also strong support for our focus on encouraging markets in new water resources, and it was noted that our approach was in line with the Water Act 2014.

The main concerns were around the potential risks – to the environment, for example – and the potential complexity of our proposals. Some stakeholders also considered that there was uncertainty around the benefits.

Welsh stakeholders, the Welsh Government and Natural Resources Wales raised specific points about the implications of our proposals for Wales, although they were not opposed to our overall approach. There was a suggestion that our policies did not capture the costs and benefits for Wales or fully reflect the Welsh Government position. There was also a suggestion that water trading (particularly water

exporting) could be detrimental to the ecosystem in Wales. All incumbent water companies operating in Wales supported our overall approach.

Almost all respondents (whether or not they agreed with our overall approach of encouraging greater use of markets in water resources) made comments about specific elements of our proposals. These are discussed in the sections below.

5.3.3 Our review and analysis

Since December, we have quantified, wherever possible, more of the potential costs and benefits of our water resource proposals. The results of this analysis have been incorporated into our policy decisions to ensure that our assessment of impacts and policy analysis are fully aligned. This includes further work to understand the distribution of costs and benefits across England and Wales. Our analysis has shown that our market design proposals for water resources have a positive net benefit in both England and Wales, which is summarised in Section 5.12 on the impacts of our decisions.

We have tried to reduce, where possible, the complexity, cost and risk associated with our proposals. We have, for example, reduced the scope (and cost) of our proposed market information database.

A number of stakeholders made comments about environmental issues. Creating markets that help to reveal information can help to ensure that the wider costs and benefits associated with activities in the water sector – including their environmental impacts – are factored into decision-making. This should reduce the likelihood of environmentally damaging transactions taking place. Regarding the specific suggestion that water exporting could be detrimental to the ecosystem in Wales, our proposals work within the existing regulatory protection in this area and should not lead to any increased risk to ecosystems or the environment. We have also agreed to look at trading scenarios with the Welsh Government to understand cross-legislative boundary issues.

5.3.4 Our policy decision on market design

We will inform, enable and encourage the development of water resource markets via our preferred policy package for the regulation of water resources. Our specific policy decisions are discussed below in the sections on:

- improving market information;

- access pricing for bilateral markets in England;
- a separate price control for water resources;
- our approach to historical RCV and new investment;
- RCV allocation for water resources;
- system operation; and
- further options to support market development.

We also provide a summary of the impacts of our decisions on the balance of risk and then summarise the impacts of our decisions.

5.4 Improving market information

5.4.1 Our December consultation

In the December consultation, we noted that market participants interested in identifying new opportunities for trading faced ‘search costs’ as well as information barriers compared to incumbent water companies. There is also a perceived lack of transparency in the WRMP decision-making process. We noted that increased information and certainty on bid assessment would enable and encourage potential market participants to identify and put forward opportunities to supply water resources for companies’ WRMPs. To enable this, we proposed the following.

- A **market information database** managed by a third-party organisation. The database would be likely to need data on technical criteria, water source and quality, environmental and security of supply impacts. Incumbent companies would be required to submit information, and others could contribute information on a voluntary basis.
- This information database would be a **platform for bid assessment** from third-party providers. Incumbent companies would record and publish information about third-party bids, and the reasons for accepting or rejecting those bids. This would be on an ongoing/real-time basis to help build on the WRMP process. It would be mandatory for incumbent companies.
- We also proposed a **principles-based approach for bid assessment**, which would set out the basis for bid evaluation to help ensure a level playing field. We suggested this should include recourse to Ofwat if participants thought a bid had not been evaluated in line with the principles.

These proposals, and our subsequent analysis, concern all of the statutory water undertakers in England and Wales with the exception of several much smaller

companies, the new appointee and variation (NAV) companies and the Cholderton and District Water Company.

5.4.2 Responses to our December consultation

Our December consultation asked whether respondents agreed with our proposal to create a market information database and bid assessment framework to allow for the 'bidding in' of third-party resource options on an ongoing basis – as set out in the Deloitte report. We also asked whether respondents agreed that a third-party organisation would be best placed to manage the database.

Most accepted the case for encouraging trade and supported action to address information barriers. This was true for incumbent water companies and across other stakeholders, including regulators, investors and consumer groups.

Most of the feedback was on the market information database rather than the bid assessment framework. Where comments were provided, those that supported the market information database also tended to support the bidding framework and vice versa.

The key challenges raised by stakeholders were as follows.

- **Resilience, water quality, environmental impact.** Dee Valley Water and a wide range of stakeholders including CC Water, CIWEM, the Environment Agency, Natural Resources Wales, M&G Investments and the Welsh Government made comments about the risk that third-party sources could pose to drinking water quality, the environment and resilience of a company's services.
- **Cost and complexity.** A number of companies, including Affinity Water, Anglian Water, Severn Trent, South East Water and Sutton and East Surrey Water, raised questions about the compliance costs of the proposal. There were also questions about how costs would be recovered.
- **Sharing sensitive data.** Thames Water and South East Water suggested that sharing cost information would undermine negotiations. Yorkshire Water referred more generally to commercially sensitive information and the intellectual property rights of the incumbent company. The Welsh Government questioned whether companies had any appetite for sharing information and said that their policy would not support mandatory participation.
- **Management of the market information database.** Most respondents supported independent, third party management, citing the benefits of clarity, consistency and confidence. Severn Trent and Dŵr Cymru suggested, as an

alternative, that companies could be required to publish information on their own websites.

- **The case for a bid assessment framework.** Affinity Water and Southern Water considered existing duties and incentives were sufficiently strong to encourage trade and prevent discrimination. Southern Water noted that water companies are already covered by procurement law and the Competition Act 1998.
- **Alignment with WRMP19.** A range of companies and stakeholders, including Thames Water, United Utilities, CIWEM, the Environment Agency, South West Water and Yorkshire Water questioned how the information database and bid assessment framework would interact with the WRMP process. In particular, comments were made around the idea of the rolling bid/submission/assessment process. South East Water highlighted the limited time available to inform the next round of WRMPs.

Welsh stakeholders expressed a similar range of views about the package of proposals to stakeholders in general. Dee Valley Water broadly supported the proposals but was cautious about costs; Dŵr Cymru suggested WRMPs already offered the information needed and rejected the need for a central database in favour of information being posted by companies. Natural Resources Wales recognised the potential benefits of trade but raised questions about environmental impacts and the risk of water companies dominating the market. The Welsh Government questioned the scale of the costs and how these would be recovered, as well as setting out the policy context for companies whose areas are mainly in Wales. The Welsh Government also queried whether or not participation should be mandatory given the policy position in Wales.

5.4.3 Our review and analysis

We have reconsidered our proposal for a market information database in light of the responses. The evidence we have gathered underlines the importance of developing a targeted and proportionate approach to improving information, especially given the uncertainty about how the market will evolve. As a result, we have revised our proposal to focus on greater visibility and accessibility of existing information, including key assumptions and economic data that underpin the preferred options presented in WRMPs. We discuss our revised approach in more detail in Appendix 3.

Our revised approach is to provide information required to stimulate conversations between incumbents and potential suppliers of water or demand/leakage management services, rather than hold all the information needed to decide a trade. As a result, complex questions about resilience, water quality and environmental

impact, as well as any regulatory approvals required, would be dealt with through negotiation and approvals.

Regarding sensitive data, such as cost information, we accept that this kind of information would not be revealed in a fully competitive market. However, the current opacity of this data strengthens the position of incumbent companies in the market and acts as a significant barrier to a third party understanding the scale of opportunities that exist to offer supply or demand management services. We see the transparency of information from incumbent companies, much of which is already available in WRMP technical tables, as key to creating a level playing field for third-party providers without adding a significant new burden. The simplification of December's proposals should address concerns about intellectual property rights. Though we will require companies to allow reasonable commercial and non-commercial use of the published information.

The information database we proposed in December was envisaged as being managed by a central entity, acting as the custodian of information submitted by market participants. This approach was supported by some respondents who saw it as essential for creating a fair system that would be handling commercially sensitive data. However, our revised approach would not require such data to be held or posted nor will it provide a platform for bid appraisal as originally envisaged.

It is also clear that approaches to information management including [linked data](#) protocols mean that central ownership is not a prerequisite for the aggregation and analysis of multiple datasets. As a result, there is not a compelling case for us to set up a single database or a third-party operator. Rather we expect companies to post information to a common standard. This avoids the complexity and cost of formal data gathering and creates an opportunity for market-driven innovation by third parties – for example by offering brokerage or market insight services. Should the absence of a central entity impair market development, we will reconsider having a third-party operator.

Simplifying data requirements and functionality puts greater emphasis on commercial negotiations to understand the viability of a trade and agree terms.

Our revised design will ensure that the net impact of our decisions will be positive. In February, we sent out a request for information to incumbent companies. As a result, we now have more information on the potential costs of our improving market information decisions. The request focused on system set-up and ongoing costs of providing a market information database. We have used the results to estimate that the net present value (NPV) of costs for the revised proposal over 30 years would be £11.5 million – based on a set-up cost of £0.7 million and operational costs of £10.7

million. These figures are likely to be conservatively high given the changes we have made to the design. There is an overview of company responses and details of how our estimate was calculated in Appendix 3 and we set out the benefits available from our decisions in Section 5.12.

We will ask each incumbent water company to develop and publish a **bid assessment framework** setting out policies and processes for assessing third-party bids that ensure, among other things, that the incumbent does not unduly favour in-house solutions at the expense of more cost-effective third-party approaches to delivering services. We expect the bid assessment framework to reflect the wider policy and legal framework for bid assessment that operate in England and Wales, provide greater confidence to third parties that they will be assessed on an equal footing, and set guidelines on the kind of information a third party needs to provide. We set out our approach in Appendix 3.

With regards to alignment with WRMP, we agree this is an important consideration. WRMPs provide much of the information required by potential new third parties along with the models needed to assess the technical and economic viability of bids (including sustainability and resilience) in the context of the wider system. However, we note that companies can and do acquire resources outside their approved WRMPs where opportunities arise (see case study). Our objective is to stimulate the market to make sure such opportunities are fully realised and that the updating WRMPs is informed by a fuller understanding of the third-party options available.

Case study: Water trading on the River Severn

In February 2016 Severn Trent Water purchased abstraction rights for 31Ml/day on the river Severn. The purchase from EoN represents the largest water trade in England and Wales to date. The acquisition of new resource brings a range of benefits including the deferral of some planned, long term water resources schemes outlined in Severn Trent Water's WRMP, improving operational flexibility, meeting environmental needs and increasing drought resilience.

We do recognise, though, that the timing of the next round of WRMP updates poses a challenge for developing improved information. On balance our preferred approach is to have the companies' information platforms running with draft WRMP information from January 2018 with updates posted as final plans are published. Bids received within the WRMP development period would be considered through that formal process so as to avoid the risk of duplicated effort. We discuss this further in Appendix 3.

The question of mandatory participation was only challenged directly by the Welsh Government, who questioned whether it was compatible with their policy. Our approach will draw heavily on information that the Welsh Government already requires to be released into the public domain. Moreover, under our revised approach, the platform itself will not determine a trade. Instead detailed negotiations and regulatory approval will occur offline. These negotiations will be subject to a bid assessment framework, which companies will use to set out, among other things, the relevant legal requirements and policy framework that would apply to a proposed trade. This should ensure that the different regimes in England and Wales are reflected in decision-making.

The participation of all statutory water undertakers in England and Wales including those with surplus resource, will maximise the benefits for companies and customers in both England and Wales. The only exceptions will be the much smaller companies, the NAV companies and the Cholderton and District Water Company.

Our focus on markets is not just about doing things at lower cost. We also expect them to inform, enable and encourage innovation to help meet the key challenges of balancing supply and demand, environmental quality and resilience while addressing affordability. In addition the information revealed will help us to assess efficient business plans and drive the evolution of water resource markets and regulation. For markets to develop, all participants – incumbent providers and third parties – need to be confident that the information on which they base decisions is robust and consistent.

We consider a specific licence change that requires companies to provide data to be key to ensuring participation and establishing trust for third parties. The information would be limited to that which would be reasonable to support the development and operation of a market in water resources and demand management/leakage services.

We propose that the licence change would set out a requirement to ensure information is provided and shared, but would not include details of what information is provided, nor the means for sharing it. Our view is that the detail would be better specified through supporting guidelines, which would allow us to work with companies to develop and adapt them in the light of market developments. We do not propose creating an independent information platform, rather that companies would publish data on their own websites. We will require incumbent companies to allow reasonable commercial and non-commercial use of the published information. Third parties will be free to collect information and aggregate it for publication at regional or industry level.

Finally, some consultation responses from stakeholders indicated that water trading opportunities might be supported by regulatory provisions to ensure that there is no undue preference or undue discrimination by incumbent water companies (for example in the assessment of bids or in the negotiation of terms for supply curtailment as part of bulk supply agreements). We are not proposing any specific licence modifications relating to undue preference in water resources or in relation to bulk supplies. Nonetheless, as set out in Chapter 8, we plan to take forward work to develop more general licence modifications in consequence of Section 23 of the Water Act 2014 which introduced a general duty on Ofwat regarding undue preference and undue discrimination in the provision of services. This could support the specific policies set out above for the development of markets in water resources.

5.4.4 Our policy decisions on improving market information

We will facilitate market development through better information by:

- requiring incumbent companies to make key data available on supply-demand deficits and water resource costs in a consistent format. This should be available on company websites with Ofwat providing a webpage that signposts where that information is held;
- requiring companies to allow reasonable commercial and non-commercial use of the published information; and
- requiring each incumbent company to publish a bid assessment framework setting out its policies and processes for assessing bids from third party providers of water resources and demand management/leakage services.

5.5 Access pricing for bilateral markets in England

The bilateral market model is one of the two main routes to market that we envisage for organisations with water resources available that wish to trade with water retailers in England. There is more information on this model in Appendix 3. This section discusses our approach to access pricing. It is intended to apply to bilateral market entry for companies that can provide raw or untreated water only, and also for companies that may be able to provide drinkable treated water or partially treated water. The term ‘access pricing framework’ describes the regulatory approach and charging rules for the services third parties need from incumbent water companies if third parties are to engage in bilateral market opportunities.

Our access pricing framework for water resource entry is intended to lead to new charging rules that could replace the cost principle for introductions of water into public water networks by water supply licensees, as envisaged under the Water Act 2014. The implementation of the new rules is part of the market-enabling provisions of the Water Act 2014, and will take place after Defra has brought the relevant provisions of the Water Act into force for this purpose for English water undertakers. Further, the requirements for the new access pricing rules may well differ across England and Wales because of differences between the policy and legal frameworks for English water undertakers and for Welsh water undertakers. As we take forward our work on the potential new access pricing framework we will need to have regard to both the [guidance on charging principles issued by Defra](#) and the [equivalent guidance recently consulted on by the Welsh Government](#), as well as any guidance on the content of the access pricing rules.

We have focused our work to date on the access pricing framework that would apply to incumbent water companies operating wholly or mainly in England, and have taken account of the recent Defra guidance on charging principles in this regard as well as the considerations that underpinned the provisions of the Water Act 2014 that enable replacement of the cost principle.

We do not currently expect any equivalent bilateral market development involving Welsh water undertakers because water supply licensees will, as now, only be able to supply their own customers if they introduce water into the networks of Welsh water undertakers and those customers' premises must use at least 50 megalitres of water per year. We will consider the development of an appropriate Welsh access pricing framework as we develop our overall approach towards the new charging rules, having regard to the Welsh Government's guidance on charging.

5.5.1 Our December consultation

In December, we set out how we would move forward on the new access pricing framework for water resource entry. Our proposals aimed to help develop markets for providing new water resources and capacity. We aimed to identify an approach to access pricing that would facilitate entry for companies who could supply raw/treated water efficiently. We recognised that, as a consequence of the RCV discount at privatisation and the cost structure of water resources, the average (and historical) costs for incumbent water companies could be significantly below the costs of potential third parties. Those third parties, however, could be more efficient than existing providers in helping to meet future water needs within a WRZ where additional resources are required.

We proposed that, for the networks of water companies based wholly or mainly in England, the approach to access pricing would involve two main elements.

- **Cost-based charge for network plus.** The first element would allow incumbent providers to recover network plus costs. We said that we would expect companies to split out the treated water network distribution, raw water distribution and treatment elements of the network plus charges, supported by accounting separation data, and charge separately for the relevant services provided.
- **Compensation payment.** The second element would be a compensation payment (or offset mechanism) to offset the difference between the incumbent provider's estimated incremental cost of new water resources and the incumbent's average cost of its water resources. This element was intended to address the concern that, even if a third party is more efficient in providing new/additional water resources within a WRZ, it could be unable to supply the market in an efficient way if it had to compete against the incumbent provider's average costs across its whole water resource activities. The compensation payment would be calculated using measures of the incumbent water companies' forward-looking incremental costs. We recognised this could, to begin with at least, use data on average incremental cost (AIC) contained in incumbent companies' WRMPs.

5.5.2 Responses to our December consultation

Most respondents were either broadly supportive or neutral, although several noted that more work was needed on the details of how it would operate in practice. Only one respondent (Northumbrian Water) disagreed, arguing that our proposals on access pricing (together with the separate price control and RCV) introduced a level of complexity and uncertainty disproportionate to the likely benefits they would unlock. Yorkshire Water did not support the proposed offset mechanism (again noting the complexity and cost), although it was generally supportive of access pricing.

Respondents also made a number of comments on the design of the access pricing framework and these are reported in Appendix 4.

5.5.3 Our review and analysis

We have reviewed our approach to the access pricing framework in light of stakeholder responses.

We have a duty to issue access pricing rules, but even if this were not the case, we do not consider it would be appropriate to rely on competition law alone in relation to access pricing. Both water undertakers and potential third parties would face uncertainty about access pricing under competition law, and this could hinder market development at a critical stage of development. The use of competition law to set the precedent for access pricing for other parties is likely to be expensive and slow, with high costs for the parties directly involved. We would also prefer to work more collaboratively with the industry on developing pricing rules, drawing on the understanding and experience of third parties and access providers.

We consider the specific approach to the access pricing framework we set out in December to fit best with our objectives. An alternative, simpler, approach would be for access prices to only comprise of cost-based charges for network plus services, without any compensation payments. That alternative seems unlikely to support efficient entry when incumbent providers' water resource and network plus costs reflect the RCV discount and where the costs of incremental water resource schemes tend to be higher than the average costs of the existing water resources.

We recognise that access pricing is a challenging area and that there were some points raised about complexity and the work required to develop new access pricing rules. However, we do not consider that a 'do nothing' approach fits with the expectations and requirements of the Water Act 2014.

Our approach can meet the expectations of the new legislation by enabling efficient upstream entry in wholesale water in a proportionate way. The compensation payment is intended to address the specific concern that, even if a third party were more efficient than the incumbent company in providing new/extra water resources within a WRZ, it could be unable to supply the market if charged simply on the basis of cost-based network plus charges (see the example in Appendix 4).

The compensation payment would not apply in all circumstances. For example, there may be no need for it to apply in WRZs with excess capacity and where there is no new water resource investment by the incumbent company. The compensation payment would depend on the contribution that a third party made to the demand-supply balance in a zone. We will need to specify the conditions under which third parties qualify for the compensation payment as the access pricing rules are developed. Where a third party does not qualify for the compensation payment, the access prices will reflect the cost-based network plus charges, without any offsetting compensation payments. The level of the network plus charges will reflect the allocation of costs and RCV between the network plus and water resources price control, and so the separate water resources price control and the RCV allocation will affect the bilateral market opportunities.

Separate charges should be calculated for treatment and distribution services (for example) rather than companies publishing a single access price for network plus. If companies are to set appropriate charges for network plus services then we would, in any event, expect them to build these up from calculations for the separate activities. Separation of charges should also help give more clarity to third parties. However, we recognise that it may not be proportionate for companies to publish a tariff covering all services that third parties may conceivably require (if treatment charges are to vary according to the specific characteristics of an entrant's raw water quality, for example). We will work with market participants to find an appropriate balance between published tariffs and methodologies for deciding charges for more bespoke needs.

Stakeholders made comments and suggestions on a number of more detailed and technical issues, such as capacity versus volumetric payments. More generally, they requested greater clarity and information on how the approach would work in practice and some wanted to reserve judgement until this was available. There is more information in Appendix 4. Developing new access pricing rules will be a phased process and we welcome further engagement with market participants.

5.5.4 Our policy decisions on access pricing

We have now started the process of developing a new access pricing framework that could form part of new charging rules to replace the cost principle. In developing the rules, we will take into account current and future guidance from Defra and the Welsh Government. We will consider carefully whether a different set of rules is needed for companies mainly in Wales, or whether it is better to have one set of rules that reflects the different frameworks for English and Welsh water companies. We will consult on the draft rules before implementation. The earliest date for any new rules to come into effect as a replacement to the cost principle for water resources will be decided by Defra in England, while the introduction in Wales would depend on any decision of the Welsh Government to decide to replace the cost principle.

At this stage, we can confirm a number of fundamental features of the new access pricing framework for companies wholly or mainly in England. This is to provide a foundation and direction for further work and to give stakeholders greater clarity about our approach.

- We will develop the access pricing framework for water resources to facilitate market entry for companies that can supply raw/treated water efficiently,

compared to the costs of incremental capacity provided by the incumbent water company.

- We will develop rules for access prices, and companies will be required to publish and apply access prices in line with these rules. The prices will apply to defined service levels and qualities.
- There will be two parts to the access prices that each incumbent water company will need to publish – firstly, a set of cost-based charges for a range of network plus services that third parties may need (transport and distribution services, as well as treatment services, for example); secondly, if applicable, the incumbent provider will need to offer third parties a compensation payment that reflects the extent (if any) to which the incumbent's incremental cost of new water resources exceed its average water resource costs.
- For companies with more than one WRZ, the compensation payment may need to vary by zone to reflect any significant differences in the incumbent's incremental water resource costs between zones. The compensation payment may need to apply at a more local level in some cases – if companies simplify their definitions of WRZs for practical purposes and there are significant and persistent differences in costs between different parts of the same WRZ, for example.
- Incumbent water companies will not be required to vary their access prices for network plus services between WRZs (or at a more granular level), unless this is needed for consistency with their standard wholesale tariffs.

To develop this framework, we will draw on the approaches and cost measures (particularly AIC) used in the current WRMPs. This will be a starting point for the process of developing access pricing and compensation payments. We do not expect the AIC to be easily applicable to the access pricing calculations without further analysis and work because it was not developed with that purpose in mind. The AIC methodology, however, is highly relevant because we expect that the approach will ultimately require an estimate of the incumbent's annualised whole-life unit cost of providing additional water resource capacity within a WRZ. We will start with existing costing approaches for water resources and adapt these for access pricing and price control purposes rather than developing a completely new approach.

We expect there to be substantial benefits from the creation of explicit or structural links between the methodology for the calculation of the compensation payment element of the access price and the level of regulatory funding available to the incumbent water company through the price control. To take a simplified example, if the PR19 price control were to include a regulatory allowance to an incumbent water company to cover incremental water resource capacity at an estimated cost of £1 per cubic metre (this might be the average across several planned schemes), the

same figure of £1 per cubic metre could be used for the compensation payment calculation for third parties that provide equivalent capacity. This would create a more level playing field for potential third parties. We also expect it to improve the quality of information for price control purposes and encourage companies to market-test their costs, and more thoroughly explore opportunities to buy water from third parties. A company that over-estimates its costs of incremental water resource capacity in its price control business plan would be likely to face a greater risk of bilateral market entry. For that reason, we will aim to create structural links between the access price and price control frameworks.

Appendix 4 contains more discussion on other issues relating to the new access pricing framework. We look forward to working with stakeholders to take this forward.

5.6 A separate price control for water resources

5.6.1 Our December consultation

In the December consultation, we proposed a separate binding price control for water resources and put forward some initial views on the form and structure of the control. We suggested that a total revenue control would be appropriate for water resources, based on return on RCV set with reference to a weighted average cost of capital (WACC). We indicated that this would apply both to the legacy RCV and to new investments made during the course of the PR19 price control period (and possibly beyond), in light of uncertainty regarding the pace at which bilateral markets might develop. However, this is a complex area and one potential issue of using such an approach for both existing and new water resources is it could give an advantage to incumbent providers of water resources over new third-party providers.

We also proposed that the new water resources price control should apply to all incumbent companies in England and Wales, even though companies whose areas are mainly in Wales will not be subject to the bilateral market reforms in the Water Act 2014. Introducing separate price controls will still benefit customers of companies whose area is mainly in Wales, as separate controls will allow us to more effectively regulate by providing greater transparency, setting better targeted incentives and facilitating greater efficiency. This is appropriate to ensure that data can be compared across all companies, and to allow us to protect the interests of customers in Wales using a comparative benchmarking approach to regulation. A separate price control will also facilitate the costing and the sharing of benefits for customers where Welsh incumbent water companies' resources are used to export water to other water companies.

In December, we also stated that the separate water resources price control should be based on an RCV allocation carried out on an unfocused basis. This is discussed in more detail in the RCV allocation section.

5.6.2 Responses to our December consultation

Respondents were fairly evenly split on our proposal for a separate price control for water resources. Nine broadly agreed (with caveats in some cases), seven were neutral and eight disagreed. This balance of views was true among the incumbent water companies and among other stakeholders, including regulators, investors and consumer groups.

Stakeholders who supported the proposal for a separate price control expressed largely similar reasons to those we put forward in December – improving transparency of information and enabling better targeted regulatory incentives, for example. Bristol Water said that a separate price control was a logical step towards market transition but that, in the long-term as markets developed, controls may not be needed. For this reason, they suggested Ofwat should also consider the criteria that would need to be met for controls to be removed. South West Water said they anticipated similar benefits to those realised with the separate retail price controls introduced under PR14.

The key issues raised by stakeholders were as follows.

- **Binding price control separation is not necessary to achieve our stated objectives.** Northumbrian Water and Yorkshire Water both argued that a non-binding price control, alongside non-allocation or shadow allocation of the RCV, could achieve our objectives with less complexity and risk. It was also noted that the scope for comparative efficiency gains in water resources is small because wholesale asset costs are driven by factors outside management control (such as geography). Similarly, some respondents stated that robust accounting separation would be enough, while others suggested that access pricing alone would deliver our objectives without the need for price control separation. On the latter point, Severn Trent Water and Wessex Water pointed out that, under our December proposals, access prices would be set using AICs rather than the costs allocated in a separate price control, while United Utilities argued that the proposed water resources price control was unrelated to our market proposals either in terms of pricing for network access or bidding in to WRMPs.
- **A separate price control would introduce extra complexity leading to higher compliance costs and a bigger regulatory burden, particularly for smaller**

water companies. This may ultimately outweigh any benefits, particularly as the water resources RCV is a small proportion of the total in most cases.

- **Separate price controls could distort company decision-making and lead to poorer investment decisions.** South East Water said that a separate water resources price control would require greater consistency between the WRMP process and the price review process. They suggested that, as a minimum, the two should be assessed using the same principles and guidelines.
- **Boundary issues in setting the price control could distort incentives and competition.** The distinction between water resources and water treatment could be difficult to define, for example, as when groundwater abstraction sites provide simple on-site treatment.
- **The proposal could create the wrong incentives and interaction with the WRMP process.** For example, CIWEM said that price control separation could have a negative impact on resilience because some supply-side options in the WRMP (such as increased treatment capacity and connection through trunk mains) could continue under network plus and lie outside the scope of the separate water resources price control.

Several respondents (including both supporters and opponents of the proposal) raised specific design issues for us to consider if we were to proceed with price control separation. These included: the need to consider the financeability of water companies as a whole and assess this across all price controls; the need to ensure robust and consistent cost allocation; the need to keep administrative costs of the price control to a minimum, and the potential to adjust the design of the price control in future in light of abstraction reform.

Among Welsh stakeholders, Dŵr Cymru was opposed to price control separation, while Dee Valley Water was supportive. Natural Resources Wales also agreed with the proposal, subject to the proviso that Ofwat pay attention to Welsh legislation – in particular the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016. The Welsh Government did not make any specific comments on the question of a separate price control.

5.6.3 Our review and analysis

In the light of stakeholder responses, we have considered the following issues relating to the proposed separate water resources price control:

- the case for a separate price control for water resources;
- the duration of a separate price control for water resources;
- the companies to which the separate price control should apply;

- the boundary between water resources and network plus for the purposes of a separate price control;
- the form of the separate price control for water resources; and
- defining a separate water resources price control within the licence.

The case for a separate water resources price control

Taking a step back, it is important to highlight two limitations of the existing wholesale price control framework for water resource market development.

- The existing price control framework tends to transfer the risks of competition away from the incumbent water companies and towards customers, who effectively compensate incumbent water companies financially for losses in market share. Therefore as water resource markets develop, customers could fail to receive the benefits or even be worse off.
- A single revenue control covering the full set of wholesale activities may provide opportunities for incumbent water companies to engage in forms of cross-subsidy, which make it harder for third parties to compete against them in parts of the value chain that are potentially competitive (such as water resources). At the same time, incumbent providers could recover more revenue from parts of the value chain where their monopoly position was strongest (such as water distribution to existing customers). The incentive arrangements and risk protection that apply under the existing wholesale price controls (partial pass-through to customer of unexpected increases in totex) may also give incumbent water companies an advantage that could limit opportunities for third parties to compete and discourage development of an efficient market.

A separate price control for water resources is a targeted and proportionate response to these issues. It allows the regulatory framework for water resources to be adapted to realise the greater opportunities from markets in this part of the value chain, while maintaining the existing framework for the other parts of the wholesale price control where there is less scope for markets at present.

These two issues above are particularly important for customers connected to the networks of English water undertakers, in the case of potential bilateral market entry as envisaged under the Water Act 2014. We will develop new access pricing arrangements to encourage and enable efficient new entry through the bilateral market route. However, a new access pricing framework is not enough on its own, and it is not enough to introduce new charging rules to provide market opportunities for efficient third parties. We want to ensure that customers are protected and can benefit from new entrants to the market – and this requires changes to the price

control framework. The separation of the water resource price control is part of a package of measures that includes a new access pricing framework and the proposal that, from 1 April 2020, new water resource investment by incumbents will be undertaken 'at risk', without the same degree of regulatory protection as the historical RCV.

The benefits of a separate price control go beyond bilateral market entry however. Where incumbent water companies want to agree voluntary water trades between each other, these trades will need to reflect information about the cost of water resources – for both the importing and exporting company. A separate price control can help improve the information available and the consistency of cost allocation and reporting across companies. It will also ensure that an exporting company's customers benefit from the transaction by providing information on the cost of the resource for transfer pricing.

The case for a separate price control in the context of market development is supported by other examples. One is the case of business retail competition in the water industry. The Water Act 2014 included reforms that will allow the development of retail competition to supply water and wastewater services to business customers of incumbent companies whose area is wholly or mainly in England. We adapted our price control framework to separate retail price controls from wholesale price controls. The retail price controls operate differently to the wholesale price controls and are more compatible with market development. There is also wider regulatory precedent from sectors such as energy and telecoms for the principle of setting separate price controls for parts of the value chain considered more open to competition compared to parts for which competition is more limited.

The realisation of benefits from markets are an important part of the case for a separate price control, but not the only element. As highlighted above, the separate price control is likely to help in developing better targeted regulatory incentives, and in increasing focus on the water resource part of the value chain (both within companies and with the regulator). We expect that the separation of price controls will increase the accuracy and consistency of cost reporting for different wholesale activities because the regulatory reporting and cost allocations will become more important.

Separate price controls provide stronger incentives for companies to understand and disaggregate their costs and should improve the overall quality of information on costs that is reported for regulatory purposes. Experience with separate retail price controls suggest that, despite several years' experience with accounting separation, it was not until separate price controls were introduced that costs were disaggregated between retail and wholesale activities on a consistent basis between

companies. The quality of information on incumbents' water resource costs will improve as this information plays a more important role in the price control framework.

Some stakeholders considered that a separate price control for water resources risks distorting company decision-making and leading to sub-optimal investment decisions rather than whole-system optimisation. We recognise that where boundaries are drawn for regulatory purposes (in this case, between network plus and water resources) there may be risks of distortions. However, our overall policy package for water resources reflects a concern that, as things stand, there are already significant distortions and risks of sub-optimal investment decision-making, for example due to insufficient account of the potential for water trades. Moreover, the current WRMP and price review processes recognise that the financial interests of incumbent water companies may not be perfectly aligned with optimal long-term investment decision-making for water resources and system-wide optimisation – other checks and balances are required and applied. In this context, the risks of significant distortions should be reduced overall by our decisions.

We also considered a range of alternatives to a separate binding price control for water resources, but found these to be less effective. These alternatives are discussed in Appendix 3.

Companies covered by the separate water resources price control

The discussion of a separate water resources price control applies to all statutory water undertakers in England and Wales, with the exception of several small companies – the NAV companies and the Cholderton and District Water Company – which operate under different price control arrangements.

We considered two main options:

- a separate price control for all water undertakers in England and Wales; and
- a separate price control for companies whose areas are wholly or mainly in England.

The second option reflects the view that the benefits from a separate water resources price control are greater for incumbent water companies operating wholly or mainly in England than for companies operating mainly in Wales. This is because part of the case for introducing a separate price control is based on the potential development of bilateral markets for water resources as a consequence of the Water Act 2014. The opportunities for bilateral markets involving companies operating

mainly in Wales, however, are more limited because, for example, third parties will only be able to supply their own customers if they introduce water into the networks of Welsh water undertakers and those customers' premises must use at least 50 megalitres of water per year.

As mentioned earlier, the views of Welsh stakeholders were mixed on the issue of price control separation. Dŵr Cymru was opposed, while Dee Valley Water was supportive as was Natural Resources Wales (provided that we paid attention to Welsh legislation). The Welsh Government did not comment on the question of price control separation.

On balance, even though the benefits of a separate price control may be greater in England, it would still be beneficial if the separate price control applied to all water companies rather than only to companies operating wholly or mainly in England. The case for separate price controls is only partly related to bilateral markets. Other benefits include improved information and the potential for better targeted regulatory incentives, which apply equally to companies operating in England and Wales. The future scope for bilateral market entry may also be wider than the area served by companies operating wholly or mainly in England – because of potential changes to the devolution settlement recommended by the Commission on Devolution in Wales (Silk Commission), for example. There are also benefits in applying a consistent price control methodology to all companies in terms of transparency and ease of benchmarking. We also consider that there would be limited cost saving from exempting companies operating mainly in Wales.

In light of these considerations, we have decided that the separate water resources price control should apply to companies across England and Wales. Further detail on our rationale can be found in Appendix 3.

We will design the water resources price control, however, to fit the circumstances that each water company faces. This approach would involve a consistent price control methodology applied to all companies but with variation in how that was applied. For companies without any expenditure planned to cover forecast deficits, the separate price control for water resources at PR19 would work in a very similar way to that for PR14 – a pure total revenue price control. Similarly, if there was no realistic prospect of bilateral market entry within a WRZ (for example, one served by a Welsh company), we could allow the water resources price control to operate as a pure total revenue control. There is more information on the nature and form of the water resources price control in Appendix 3.

The duration of the separate water resources price control

As discussed in Chapter 7, we have decided to keep the current five-year price control periods for the network plus price controls because this strikes an appropriate balance between flexibility and encouraging a longer-term approach to business management and because we are taking other measures promote longer term approach. These same arguments apply in relation to the separate water resources price control, and there are significant benefits from aligning the water resources price control with the water network plus control.

Most respondents agreed with our proposal to keep a five-year price control, although two indicated a preference for a longer period (Bristol Water stated six years, while Severn Trent Water stated eight years). Some respondents also said that, while they were comfortable with a period of five years, they would like to see better alignment between the price control review and other regulatory processes – in particular the WRMP process. On that issue, we have recently issued letters to [water companies operating wholly or mainly in England](#) and to [water companies operating mainly in Wales](#) (in collaboration with Defra, the Environment Agency and Natural Resources Wales) setting out our next price review timetable and explaining how this will be aligned with WRMPs.

The boundary for the water resource price control

We have considered the boundary for the water resources price control, in light of stakeholder responses and the findings of the [Targeted Review of Sludge and Water Resources report](#) (prepared for us by Cambridge Economic Policy Associates in March 2016). The targeted review of accounting separation for water resources revealed inconsistencies between companies and also highlighted issues where increased guidance is required from Ofwat to specify the boundary between water resources and other water businesses. We are pleased to make early progress on these issues, based on experience with separation of retail controls, we appreciate that this process require careful work from both Ofwat and the companies. We still intend to use the regulatory accounting guidelines as the basis for setting the boundary. The further work on accounting separation boundaries will take into account the practicalities of the different types of water resources and the need to avoid any undue regulatory burden.

Appendix 3 sets out our thinking on this issue. We look forward to working with stakeholders on the detailed definition of the boundary derived from accounting separation for the purposes of the separate water resources price control.

The form of the water resources price control

We have decided that the water resources price control should be a restriction on the total revenues attributable to water resource activities, calculated as the sum of two elements:

- a fixed element (for example, £X million a year); and
- a mechanistic within-period adjustment factor that depends on the scale of bilateral market entry.

The fixed element will include allowed revenue for the incumbent water company's water resource capacity at 31 March 2020, calculated using a building blocks approach. This will include a return on the water resources RCV at 31 March 2020. The fixed element will also include allowed revenue for remuneration for totex and returns for any additional capacity required from 1 April 2020, also calculated on a building blocks basis. It will allow for the efficient totex that would be needed in the absence of any additions to the capacity available at 31 March 2020.

The mechanistic adjustment factor is a new element to help adapt the price control framework to fit better in a context where water resource markets are developing. The purpose of the adjustment factor is to ensure that the revenue that the incumbent water company collects under its water resources price control depends on the extent to which the additional capacity it provides after 2020 contributes to meeting customer demand. In particular, if less capacity is needed from the incumbent than forecast at the price control review, as a consequence of bilateral market entry, then the revenue collected by the incumbent should reduce. Without the adjustment factor, the incumbent would earn the same revenue during the price control period regardless of how much customer demand it supplies and irrespective of its market share relative to entrants. As explained above, we do not consider it to be in customers' interests for the price control framework to provide complete risk protection to incumbent water companies against the effects of bilateral market entry by third parties that can help meet demand for water more efficiently. It also provides the incumbent with appropriate incentives to anticipate capacity from other providers in its own investment decisions.

The calculation of the adjustment factor will reflect two main elements.

- **Volume differential:** a measure of the extent, if any, to which the customer demand met by the incumbent using additional capacity developed from 1 April 2020 is lower or higher than that expected at the time of the price control review,

due to bilateral market entry rather than changes in market-wide demand (for example, effects of weather or population growth).

- **Unit cost measure:** a measure of the costs of the additional capacity from 1 April 2020 that is funded through the price control, expressed on an annualised unit cost basis. This can be applied to the volume differential measure to calculate the financial adjustment factor to apply to the water resources revenue control.

To take a simplified example, suppose that the water resources price control determination at PR19 includes a revenue allowance of £1 million per year for additional water resource capacity from 1 April 2020, which is calculated on the assumption that additional capacity of 10 MI/day is needed to meet demand (taking account of peaks and headroom). If it turns out that in 2024/25 only 8 MI/day of additional capacity is needed from the incumbent, because of the transfer of some customer demand to third parties, then a downward adjustment of £200,000 would apply to the 2024/25 revenue allowance (2 MI/day at a unit cost of £100,000 per MI/day). However, if the reduction in demand relative to forecast was attributable to lower market-wide demand, rather than to greater bilateral market entry than expected, then no adjustment would apply.

These calculations require comparisons of the demand and capacity forecasts used for the price control with out-turn demand for the incumbent water company and third parties. The adjustment factor would be small compared to the fixed element. For some companies, such as those with no forecast deficit in any of their WRZs, there may be no need for the within-period adjustment factor and only the fixed element would apply (in these cases, the adjustment factor could be set at value 0 in all years). This would be determined as part of the price control review.

The adjustment factor would not be used to expose the incumbent provider to new sources of financial or utilisation risk in relation to the existing RCV or existing water resource capacity at 31 March 2020 (including any future expenditure to maintain that capacity).

We discuss this risk exposure further in the section on Impact of our water resources decisions on risk and in Appendix 3. This appendix also gives further information on the alternative forms of price control that we considered.

Defining the water resources price control within the licence

In order to implement a separate binding price control for water resources, we need to make a licence modification to condition B of the licence.

We have considered what type of modification might be most appropriate in defining the form, nature and duration of the water resources price control. Above, we explained the form of control we expected to implement for PR19. We propose to specify the licence condition in a broadly similar way to the existing retail price control condition which was introduced at PR14. The licence would not specify the detailed form of the control. This approach allows us to work with stakeholders to develop and refine the more detailed aspects of the price control for water resources (for example, the formula for the within-period adjustment mechanism) as we develop our price review methodology, and this would be confirmed in the final determination. Our proposed approach to the form is set out above to provide clarity about the form of control and direction of travel. We did not consider specifying further detail around form of control in the licence to provide greater regulatory commitment. Our guarantee of the pre 2020 RCV is a key element of providing certainty, as with current approach to RCV, this is not in licence, nor do we consider that it would be appropriate to include in the licence.

We propose the licence condition should provide for a maximum five-year price control for water resources. We have decided to set a five year control for PR19, but consider that it is important to provide ability to set controls for shorter periods, if this is appropriate to accommodate development of the market.

We expect the licence to limit what would and would not be included in the water resources price control. But, as with the existing approach to retail price controls, we propose to confirm the detailed definition of water resource price controls through the price review methodology. We therefore propose to adopt the same approach as with the designation of retail activities and provide details of water resources in the regulatory accounting guidelines (RAGs), which will be reviewable by the CMA in the event of a reference. This protects companies and customers from the risks of hard-coding an inappropriate boundary between water resources and network plus controls in the licence and makes it easier to address any practical issues or ambiguities that arise with the definition of the boundary. The form of the water network plus control is defined to include all activities not in water resources, which ensures that companies and customers are protected against under or double allocation across the two controls. As we explain in Chapter 4 our experience suggests that the ability to fine tune the definition in the price review methodology without requiring a new licence modification is beneficial to companies and customers.

As discussed above, we are mindful that there is a balance between ensuring the licence is not unduly prescriptive and a perception of uncertainty in what we intend to do. Equally, through our early and detailed engagement on our proposals companies

already have clarity about key aspects of what our approach will be and this document sets out further details of our proposals in relation to:

- the form and duration of water resources price control for 2020-25;
- the form and duration of water network plus price control for 2020-25; and
- all wholesale revenue will be inflated (by CPI/H).

It is also important to note that our approach for the water network plus price control is similar to the current wholesale water control in terms of the form of control specified in the licence. We would expect the licence modification to include a similar level of detail on the form, duration and nature of the water network plus price control as the current condition B describes for the existing wholesale price control.

5.6.4 Our policy decisions on a water resources price control

- We will introduce a separate price control for water resources.
- This price control will apply to companies in England and Wales.
- It will last five years, in line with the network plus price control.
- It will be a total revenue price control with an explicit within-period adjustment mechanism that depends on the scale of bilateral market entry.

5.7 Our approach to the historical RCV and new investment

5.7.1 Our December consultation

In our December consultation, we proposed to extend our protection of past, efficiently-incurred investments included in the RCV, up to 31 March 2020. Beyond 31 March 2020, investment in water resources (and sludge) should be incurred ‘at risk’.

For the water resource price control, we said that we did not expect to expose water companies to volume risk during PR19 and that future price controls beyond PR19 may still be set on an RCV basis. We anticipated that while markets develop, our regulatory approach to water resources will mean that (in line with the pay as you go (PAYG) rate) a proportion of company totex will continue to be added to the RCV without any volume risk. We said there might also be scope to develop markets based on long-term contracts, which could be a substitute for additions to the RCV for new investment.

Despite no risk of asset stranding in PR19, we noted in our December consultation that it would be prudent to begin to engage in early consideration of regulatory mechanisms to enable us to protect pre-2020 investment in the RCV.

The approach we suggested for stranding protection in both sludge and water resources was to guarantee recovery of RCV via the respective network plus price controls. One mechanism we suggested would involve us identifying and guaranteeing an appropriate level of revenue for companies based on the costs protected, with any shortfall in revenue recovered through a true-up mechanism at the next price review.

5.7.2 Responses to our December consultation

There was strong agreement with our proposal to protect efficiently-incurred investment included in the RCV up to 31 March 2020. Almost all respondents who commented welcomed our commitment on this issue, although Wessex Water was concerned that efficient investment should be determined at the time of the investment rather than retrospectively. Wessex Water also said it would like confirmation from Ofwat that the PR14 totex and the reward/penalty sharing frameworks for the outcome delivery incentive (ODI) would apply in full, after which the adjusted RCV would be deemed efficient. Affinity Water said our approach to protecting RCV in five-year increments could undermine investor confidence, and did not believe it would significantly lessen the effect on financing costs. The Consumer Council for Water questioned whether our approach would lead to customers paying for a stranded asset, and said the consultation was unclear about this.

Although most stakeholders supported stranding protection, there was less support for our view that the risk of stranded assets was very low in the 2020-25 period. Some respondents, including Anglian Water and South West Water, said there was not enough detail in the December consultation to form a clear view, while others such as Bristol Water, Portsmouth Water, Wessex Water, and Sutton and East Surrey Water explicitly stated there would be stranding risk. Wessex and Portsmouth gave examples of how this could arise – Portsmouth, for example, said some assets would be built for resilience, to meet peak demand shortages where the market was unlikely to provide solutions.

Dŵr Cymru agreed with our proposals and Dee Valley Water agreed in principle but questioned how efficient investments would be measured. Natural Resources Wales said the probability of stranding should be assessed over a longer period. The Welsh Government did not comment on this issue.

5.7.3 Our review and analysis

The existing RCV at 31 March 2020

There was stakeholder support for regulatory protection for the existing RCV at 31 March 2020.

As set out above, the water resources price control will be based on a total revenue control calculated using a building blocks approach. Revenues for water resource capacity in place at the start of the PR19 price control will be calculated on the basis of efficiently-incurred investments included in the RCV. Therefore, reduced demand for water in an incumbent's WRZs would not put the recovery of the pre-2020 RCV at risk.

The total revenue control will include an adjustment factor to determine the incumbent's appropriate risk exposure for investment in new water resource capacity from 1 April 2020 onwards. This means any new risk exposure can be targeted on incremental investment and ensures that efficiently-incurred RCV at the start of the PR19 price control is not put at risk (once we have made the reconciliation adjustments that apply for the incentive mechanisms in place in 2015-20).

We have looked again at the need for an explicit and mechanistic 'true-up' mechanism as part of the overall RCV protection in water resources. Given the policies and commitments above, there is no risk of stranding the pre-2020 RCV and so no need for an explicit RCV protection mechanism at PR19. The introduction of such a mechanism would complicate the new regulatory arrangements for water resources and could lead to market distortions and other unintended consequences.

As an additional safeguard for water resources, we will provide scope for companies to propose revisions to the allocation of the RCV between network plus and water resources at PR24, if the allocation at PR19 does not provide an appropriate allocation between the controls.

New water resources investment from 1 April 2020

In our December consultation, and in the responses we received, there was discussion of volume risk under the price control and the potential risks of asset stranding, relating to investments prior to 1 April 2020 and investments from 1 April 2020. It will be helpful to consider the nature of these risks more fully and clarify our policy position.

Since our December consultation, we have further considered the treatment of new investment in water resources from 1 April 2020 – looking at what it will mean, in practice, for this investment to be made at risk. We set out our analysis and consultation questions in Appendix 3 and summarise the key points here.

Our view is that the issue is not so much the risk that specific assets will be stranded, but rather that the capacity available in a WRZ will be under-used. The capacity might be measured, for example, by reference to water available for use (WAFU) within a WRZ.

We propose that the water resources price control framework should be designed to expose incumbent water companies to utilisation risk for their investment in new water resource capacity from 1 April 2020, when that under-utilisation arises because they have lost market share to third parties. Passing on risk to water companies rather than customers is appropriate for developing water resource markets. Customers should not be expected to provide protection to incumbent water companies against the risks associated with bilateral market entry.

In some circumstances, it might also be appropriate to allocate an element of utilisation risk to the incumbent water company if that risk arises from market-wide demand (population growth forecasts, per capita consumption or industrial demand, for example). This would give incumbent companies an incentive to take account of uncertainty around demand forecasts and align their incentives with customers. Otherwise all of this risk is transferred to customers and the responsibility for assessing the efficiency of provision with Ofwat. By appropriately balancing the allocation of risk between customers and companies, we can avoid distorting incentives of incumbent companies for the provision of new water resources. We appreciate that allocation of some demand risk to company could impact on the cost of capital, however, more efficient risk allocation should promote lower costs in the long term.

The price control for water resources will include revenue to enable the incumbent water companies to maintain the pre-2020 capacity, insofar as it needs to be maintained to achieve the desired outcomes for customers. We are not proposing to expose this investment to any form of explicit utilisation risk for PR19. This approach fits with our view that the opportunities in water resources are greater for additional capacity than existing capacity.

5.7.4 Our policy decisions on the approach to the RCV for water resources

Our price control framework for PR19 will provide the same type and degree of regulatory protection as at present for the RCV allocated to water resources at 31 March 2020.

Water company investment, or additions to the RCV in water resources from 1 April 2020, would not have the same degree of regulatory protection. It would be incurred at risk. There will be some explicit utilisation risk for new water resource capacity from 1 April 2020 onwards. We are now consulting on the form that this should take: see Appendix 3.

5.8 RCV allocation for water resources

5.8.1 Our December consultation

In our December consultation, we explained that, in principle, there was a range of potential options – from leaving 100% of the legacy RCV within the network plus price control, through to allocating all the RCV to the new price control. An allocation of the RCV to water resources was linked to the proposal for a separate price control for water resources. We also set out four reasons why an allocation of the RCV could be beneficial.

- **Ensuring a level playing field within water resources**, so that third-party service providers have clarity and confidence that they are participating in the market on equal terms with incumbents.
- **Ensuring a level playing field in relation to wider markets**, in cases where incumbent water companies use legacy assets to offer services outside the regulatory ring-fence. This could arise, for example, when providing water resources outside the core area of public supply.
- **Avoiding over-recovery of any gains from legacy asset sales/purchases by incumbent companies**, although we acknowledged that this was more likely to be relevant for sludge than for water resources.
- **Maintaining consistency between charges and cost recovery.**

The legacy RCV is not directly linked to any specific assets, either in the case of water resources or other services. So, if the RCV is to be split, we will need to decide how this is done. In December, we outlined two possibilities: a focused approach, in which the RCV allocation is based on the economic value of the assets used (for

example, their net MEAV), and an unfocused approach, in which RCV allocation is based on the proportion of the assets used in the business relative to the total assets of the business. Key issues that need to be taken into account in the RCV allocation decision include the RCV discount when water assets were privatised, the impact on customers (both directly via bills, and indirectly via impacts on incentives for new entry, for example), the relationship between RCV allocation and price signals for entry, and the robustness of the cost basis used for allocation.

Our proposal in December was that an **unfocused approach** would be the most appropriate methodology for the RCV allocation to water resources. This reflects our view that fully-developed markets for existing water resources are unlikely to emerge in the immediate future, given the relatively long life of water resource assets, the slow pace of technological change and the high cost of water transport. Given the scale of the RCV discount and the existing MEAV estimates, a focused approach could also result in the entire legacy RCV being allocated to water resources for some companies – and in some cases, this would still be below the relevant MEAV. For that reason, we did not consider a focused approach to be viable or desirable.

5.8.2 Responses to our December consultation

On the RCV allocation for water resources, the December consultation asked two main questions: firstly, whether respondents agreed with our rationale for allocating the RCV, and secondly, whether they agreed with the methodology we were proposing (allocation on an unfocused basis). Just over half of respondents commented on these questions. Of those, most either disagreed or were neutral regarding our rationale for the RCV allocation. Responses on the methodology were more equally split. Incumbent water companies were more likely to question our RCV allocation proposals than other stakeholder groups, although the Environment Agency and one investor (Macquarie) also raised questions.

The main challenges raised by stakeholders were as follows.

- **RCV allocation is not necessary to achieve our objectives.** Northumbrian Water and Southern Water both proposed using a shadow RCV allocation instead, while others such as Yorkshire Water said no RCV allocation was needed as long as access prices were set appropriately.
- **RCV allocation would be unnecessarily complex and introduce risk/uncertainty, leading to adverse impacts on investors.** This was noted by United Utilities, Wessex Water and M&G Investments. Macquarie Group was more ambivalent, but said it would assume a higher cost of capital in the RCV

allocated to sludge and water resources, and would prefer to see as low as possible a proportion of the RCV transferred.

- **The full consequences of RCV allocation needed to be understood.** Southern Water said it was premature to formally unbundle the RCV before the scope for competition was understood. It also noted that the activities carried out by water companies were not discrete. CC Water, which supported our RCV allocation proposals, said we needed to avoid the risk of giving incumbents an advantage in the new wholesale markets by setting allocations too high. The Environment Agency wanted assurance that any change to the RCV would not have an impact on achieving the environmental elements of incumbents' business plans. It was also noted that, if allocation were to be required, a clear MEAV methodology would be necessary to ensure a level playing field and consistency across companies.

Dŵr Cymru said that RCV allocation would be required for separate price controls, and that, if required, it supported the unfocused approach, although there was need for a consistent approach to any MEA valuation. Dee Valley Water questioned the cost of our proposals. Natural Resources Wales said the proposed approach seemed the most straightforward. The Welsh Government did not make any specific comments about RCV allocation.

5.8.3 Our review and analysis

We confirm that the pre-2020 legacy RCV will stay within the appointed water company. The RCV question we are addressing is an allocation for the purposes of calculating and determining price controls. We are not proposing any formal business separation of water resources or allocation of the RCV to different legal entities. While RCV will be allocated to separate price controls, we still propose a single RCV is calculated for the incumbent water company.

Some stakeholders supported a separate price control for water resources but questioned whether formal RCV allocation to water resources was necessary. Some suggested there could be 'shadow RCV' for water resources instead. We have considered this further. If we are to set a separate binding price control for water resources, some of the regulatory return on the RCV needs to be allocated to the water resources price control. Any price control determination for water resources would require either an explicit or implicit RCV allocation to water resources. The main questions that arise for RCV allocation can then be broken down as follows:

Should the calculation of an RCV-based profit allowance for the water resources price control be made through an explicit RCV allocation?

There is considerable merit in an explicit approach, given the importance attached to the RCV and the benefits of transparency for the regulator, incumbent companies and third party providers.

How should the RCV allocation be made for PR19?

There was widespread support for the view that, if an RCV allocation was to be made for water resources, it should be made on an unfocused rather than focused basis. However, there were some points raised about the work required to carry out a consistent asset valuation exercise (MEAV, for example) across all wholesale water activities to arrive at a pro rata allocation between water resources and network plus. Stakeholders suggested that this allocation might be considered arbitrary.

As we set out in the December consultation, we consider an unfocused approach preferable to a focused approach, but we have given further thought to the way in which an unfocused allocation could be made.

A pro rata allocation, based on the relative share of the estimated (net) MEAV between water resources and network plus, provides a relevant starting point for an unfocused allocation. But it is not necessarily the best approach, even leaving aside the administrative costs of an asset revaluation exercise across water resources and network plus.

There is considerable judgement required to estimate MEAVs and in particular, difficultly applying the approach to very old assets with long lives such as the distribution networks and water resources. So a split based on the unfocused values may not be provide most appropriate basis. Furthermore, the allocation of the water resources RCV could affect the balance of wholesale tariffs for different services (for example, supplies to households versus large users and potable versus non-potable supplies) and there may be little to gain from the introduction of an MEAV-based allocation if this disrupts historical tariff structures without any offsetting justification.

Given these issues, it would be preferable for each company to have greater ownership and responsibility for how its historical RCV is allocated between water resources and network plus. This is consistent with our wider approach to regulation. It also reflects our view that part of companies' existing RCV-based regulatory profit is already (implicitly) attributable to water resources: in setting their wholesale tariffs for different types of services, companies should have an understanding of how much profit they are raising, or should be raising, for their water resource activities relative to other wholesale activities.

We have therefore decided that each company will need to develop and justify an appropriate allocation for PR19 and we will review these in a proportionate and risk-based way.

We expect companies to draw on, and present their proposals by reference to, the existing data on the balance of asset values in water resources versus network plus (for example, the MEAV data used in the PR09 determinations and more recent figures from regulatory accounts) and data on the relative share of costs reported for water resources versus network plus (for example, on a totex or accounting basis). This data can provide a relevant starting point, but there may be other considerations. We also expect companies to carry out an analysis of how their proposals could affect the calculation of wholesale charges for different services and customer groups. We plan to develop guidance for companies on making their submissions on the water resources RCV allocation.

This approach brings benefits over our December proposals:

- it helps to avoid unintended and unnecessary impacts on wholesale tariffs and strengthens companies' ownership of their wholesale tariff structures;
- it avoids the regulatory burden of a full MEAV exercise;
- it does not place reliance on existing MEAV data that may be out-dated or otherwise unsuitable; and
- it enhances regulatory protection for the pre-2020 legacy RCV.

This approach would not impose a common allocation methodology on all companies, but this does not seem a significant drawback. There would be some administrative burden for companies and for us to develop and finalise the allocations, but we expect these to be significantly lower than those needed for a formal common allocation methodology based on MEAV data.

Should the PR19 RCV allocation be once-and-for-all and apply to subsequent price reviews?

In order for the RCV allocation to provide regulatory commitment and support binding price controls, the allocation of the existing wholesale RCV to the water resources control needs to be stable over time. If incumbent water companies were able to vary the RCV allocation at future price control reviews, this could create greater uncertainty for water resource third party providers about the prices they need to compete against and may undermine the regulatory commitment benefits of the RCV. This is because the charges faced by the third party provider would be directly affected by the level of charges for network plus services, which would then

reflect the RCV allocation between water resources and network plus. There may also be a perception that a company wanting to reduce its RCV allocation to water resources was trying to cross-subsidise its water resource activities and compete unfairly against potential entrants. To avoid unnecessary disadvantage and risk to entrants, the allocation of the RCV should be one-off.

We have decided, however, that there are advantages to allowing companies to revisit the allocation of the existing wholesale RCV to water resources at PR24 if there are compelling reasons to change or evidence of misallocation at PR19. For instance, we might be prepared to accept a revised allocation if there was new information showing that the previous allocation was not appropriate, or that the company would simply not be able to recover the element of its pre-2020 legacy RCV allocated to water resources from the activities under its water resource price control. We would expect any changes to be the exception rather than the rule, however, and this would not be an opportunity for companies to simply improve their competitive position. It is extremely unlikely that circumstances affecting pre-2020 RCV recovery would arise but the scope for reallocation provides an additional measure of protection to companies and investors. We note that it is important that companies make every effort to propose appropriate allocations for PR19 and so avoid the need for any reallocation at PR24.

Under the approach set out above, we do not consider that the RCV allocation to water resources introduces a risk of stranding or under-recovery for the pre-2020 legacy RCV.

5.8.4 Our policy decision on the RCV allocation for water resources

We have decided that, as part of our wider package of regulatory policies for water resources, part of the pre-2020 legacy RCV should be allocated explicitly to water resources on an unfocused rather than focused basis. Each company will need to develop and justify an appropriate allocation for submission to Ofwat. There will be no requirement for the unfocused allocation to be based on MEAV estimates, and we expect companies understand the implications of the allocation for wholesale tariff structures.

There is no reason not to progress with this allocation for the historical past RCV before the PR19 business plan risk-based review. We will issue further guidance on what we are expecting from water companies in late 2016 and expect to ask for allocations from companies in 2017 to be finalised as part of PR19.

5.9 System operation

5.9.1 Our December consultation

In the December consultation, we proposed that day-to-day system operation should continue to be carried out by the incumbent companies and other market participants, rather than an independent system operator. Our reason for this was that our proposals for increased ‘bidding in’ of third-party resource options would facilitate a wider, out-of-area, approach to optimising services. Overall, our proposals are designed to encourage better long-term decision making.

In December, we said that we might look again at the effectiveness of system operation arrangements depending on what happened in the emerging water resource market over the next price control period and how the system was being co-ordinated.

5.9.2 Responses to our December consultation

Most stakeholders did not comment on system operation for water resources. The few comments that were made were generally supportive, and there no objections to our proposal to maintain the status quo. However, CWIEM thought there needed to be more consideration about having a system operator for cross-company water transfers, particularly in times of drought.

No Welsh stakeholders commented or raised any objections to our system operation proposals.

5.9.3 Our review and analysis

We agree that, in times of water scarcity, there may be a role for increased cross-company water transfers, but this does not require a new approach to system coordination. Transfers should be planned for and carried out in line with the company’s existing water resource plans, business plans and drought-planning obligations. This planning framework is just part of the legislative and policy architecture used to co-ordinate a response to drought. In England, for example, the overall approach is outlined in ‘[Drought response: our framework for England](#)’ Environment Agency, June 2015.

5.9.4 Our policy decisions on system operation

System operation decisions will remain with incumbent companies and other market participants – the status quo. We may consider system operation again depending on the results of the emerging water resources market over the next price control period and any evidence of issues with co-ordinating the system. However many of the powers and roles related to system operation, including those that operate at times of extreme drought are defined in law and so fall outside the scope of our regulatory work. We note that our proposed market for water resources will support the longer term system co-ordination functions.

5.10 Further options to support market development

In the December consultation, we identified a range of potential options for supporting market development, which could tackle wider regulatory/policy and cultural barriers to trading, including the risk of impact on security of supply:

- the existing water trading incentives agreed under PR14 should be maintained and potentially enhanced to encourage more water trading;
- mechanisms could be developed to help fund interconnector schemes;
- transaction costs could be reduced with a standardised contract template to support water trading;
- clearer, non-discriminatory rules for restricting or stopping supply could be developed, particularly where this affects cross-border supply; and
- smarter contracting and hedging could be encouraged, through publishing case studies and worked examples.

We did not consult on detailed policy design, but asked stakeholders whether they agreed that measures should be introduced to increase transparency and certainty around security of supply for water trading and, if so, how this could best be achieved.

There was significant response to this question – 22 stakeholders made comments and some of them in great detail. No respondent disagreed that measures should be introduced, but there was a wide range of opinions about the best option. Most of the responses were from water companies, although the Environment Agency, Consumer Council for Water, CIWEM, Natural Resources Wales and Macquarie also commented.

Dŵr Cymru, Dee Valley Water and Natural Resource Wales agreed that measures should be introduced in Wales. Natural Resources Wales said this objective could

best be achieved in collaboration between itself and with the Welsh Government. The Welsh Government did not make any specific points, but said in later discussions that their priority was to ensure no environmental detriment in Wales as a result of trading.

We understand the benefits and risks of providing further support to water trading need to be considered in the Welsh context, particularly with regard to the Welsh Government's goals for well-being and the strategic policy statement. As part of further work on these issues, we will consider trading scenarios with the Welsh Government to better understand the implications of cross-border trades.

Appendix 3 discusses stakeholder responses in more detail and summarises how our thinking on these options has developed further.

5.11 Implications of our decisions on risk

5.11.1 Our December consultation

In the December document, we examined the impact on risk of each element of the water and wastewater value chain, particularly looking at areas with the greatest scope for the use of markets, including water resources. We drew on the work we commissioned from PwC, '[Balance of risk: Risk and reward across the water and sewerage value chain](#)', who advised on risks across the value chain.

In our consultation, we said that setting separate price controls did not, of itself, lead to a discernible change in the cost of capital as long as the risk did not change and incentives were consistent across the value chain. This was supported by the Competition and Markets Authority (CMA) in its decision around Bristol Water's PR14 price limit referral²³. However, the overall cost of capital could increase if separate price controls change the intensity of regulation (for example the replacement of a revenue control with volumetric control without mitigating factors). However we indicated the balance of risk or cost of capital would not change as we proposed a revenue control for water resources – the same form of regulation used

²³ Competition and Markets Authority (2015), Bristol Water plc: reference under section 12(3)(1) of the Water Industry Act 1991, para 10.218.

at PR14; we were not putting existing RCV at risk; and third-party provision for historical investments was unlikely.

5.11.2 Responses to our December consultation

Responses about the impacts on the balance of risk and reward arising from the water resources price control were mostly high-level. Some respondents said it was difficult to give a view on the potential impact of reforms at this stage.

Any comments on the cost of capital tended to be general rather than on the specific impacts on the cost of capital for water resources. Although they did not disagree with our analysis, two respondents suggested the regulatory methodology and form of price control were the fundamental drivers of risk for the sector. One suggested that differences in business risks and operational gearing, for example, were relevant but generally less important than the regulatory incentives and risk mechanisms, along with the investor perception of RCV risk in each part of the value chain. One respondent said there was no compelling evidence of significant differences in undiversifiable risks (that is, risks that cannot be reduced through investment portfolio diversification) in different parts of the value chain.

Five respondents suggested that the overall changes proposed in our December consultation (including for water resources) were likely to increase the cost of capital and four respondents referred to a comment by Moody's that the reforms could be credit negative. However, one company suggested that our proposals for water resources would have little impact on the cost of capital, but this depended on how new investment was remunerated.

Another respondent suggested there would be varying costs of capital across the assets, with network infrastructure the lowest, followed by water resources. Sludge assets would be the highest of the wholesale assets, and retail costs of capital being nearly twice that of wholesale.

5.11.3 Our review and analysis

We set out in the preceding sections that our water resource price control will differentiate between the revenue for historical pre-2020 capacity and the revenue for additional water resource capacity developed from 2020 onwards. Revenue linked to the RCV for water resources as of 31 March 2020 will not be subject to utilisation risk. For this reason, our proposed approach to regulation will not create any stranding risk associated with the pre-March 2020 RCV and no change in the

beta or the cost of capital for historical investment, even were bilateral market entry to displace existing resources.

If new investment were not subject to any volume or utilisation risk, there would be no change to the price control approach and so there would be no change to the beta or gearing across the value chain. However, we are consulting further in Appendix 3 about the extent to which companies should be exposed to utilisation risk for the development of incremental water resource capacity from 1 April 2020 onwards.

Regarding the risk associated with new water resource investment or expenditure, we consider this not so much a risk of specific assets being stranded, but that any extra capacity developed within a WRZ could be under-utilised. We can consider separately two sources of risk affecting decisions about increases in water resource capacity within a WRZ.

- **Utilisation risks from bilateral market entry.** The introduction of utilisation risks from bilateral market entry could mean that the capacity needed from the incumbent company could be less than it expected and there may be lower utilisation of any extra capacity developed by the incumbent company. Conversely, a lower than expected level of bilateral market entry could mean that the new capacity the incumbent company planned to develop is insufficient.
- **Utilisation risks relating to market-wide demand.** These risks introduce uncertainty about the level of demand from customers connected to the incumbent's system. This reflects uncertainty about factors such as population growth, household consumption, changes in industrial demand and the weather.

We propose that companies, rather than customers, should bear the utilisation risk relating specifically to bilateral market entry (as set out in Section 5.7.3). We also consider that, in some circumstances, it may be appropriate for the price control arrangements for incremental water resources capacity to leave the incumbent water company with some degree of market-wide demand risk.

PwC said that, where reforms introduce asymmetric risks and expected cash flows are altered as a result, the value of the business to investors could change. We expect that the extent of bilateral market entry is likely to be small relative to overall water resource capacity, and the pace of market development gradual given that an effective bilateral market for water resource entry does not exist at the moment. Investors could experience both upside and downside risk on their investment, so the reforms do not necessarily require a higher cost of capital, although they may have an impact on the preferred balance of debt and equity finance.

With regard to utilisation risks from market-wide demand, some risks – such as weather and per capita consumption – are not likely to be strongly correlated with equity markets. Some, however – such as changes in industrial demand – could lead to greater exposure to market demand and so could increase the cost of capital compared with a form of regulation in which the utilisation risk was passed on to the customer. Better risk allocation should improve efficiency of investment and help ensure that new capacity is developed in line with customer interest. In some circumstances, it may, therefore, be appropriate for companies to propose new investment that would expose them to the risk of market demand when developing new capacity. We would consider these on a case-by-case basis.

Third parties submitting bids as part of water companies' WRMP processes should not lead to utilisation risk on incumbent water companies. Under the bidding model, the incumbent would choose whether to agree terms with a third-party supplier before committing to develop the required capacity itself.

Our decisions on improving market information to support the development of bidding markets are unlikely to have an effect on the cost of capital. In developing their own capacity, companies will be able to make their own decisions based on information available on the market platform. They will be able to choose whether to agree terms with a third-party supplier (and the nature of those terms) or to develop extra capacity themselves where additional capacity is required.

5.12 The impacts of our decisions

This section summarises the costs and benefits of our final package of policies as a whole, against the 'do nothing' option. It should be considered alongside the policy analysis of each issue in the relevant sections above. Further detail on our impact assessment can be found in Appendix 3.

Our preferred policy options are summarised in the following table, alongside the other options we considered for each policy area.

Table 11: Options for water resource market design

Policy area	'Do nothing' option	Preferred option	Other options considered
Improving market information	No additional information or bid assessment requirements.	Incumbent companies to make key data available on supply-demand deficits and water resource costs in a consistent format. This should be available on	Full market information database hosted by a third party. Voluntary information provision.

Policy area	'Do nothing' option	Preferred option	Other options considered
		<p>company websites with Ofwat providing a webpage that signposts where that information is held.</p> <p>Each incumbent company to publish a bid assessment framework setting out its policies and processes for assessing bids from third party providers of water resources.</p>	Ofwat-owned bid assessment framework.
Access pricing for bilateral markets in England	Not feasible – development of new access pricing regime required under Water Act 2014.	<p>Develop new framework in England to help third parties enter the market if they can provide new water resources as efficiently as incumbents.</p> <p>Implemented with a combination of cost-based charges for network plus services and a compensation payment that reflects the incumbent's forward-looking incremental water resource costs.</p>	<p>Approach to access pricing based only on cost-based charges (reflecting past RCV) for network plus services.</p> <p>Reliance only on competition law.</p>
Separate price controls	Continuation of PR14 approach of a single wholesale water price control.	Separate binding price controls for water resources and network plus.	<p>Non-binding network plus and water resources price controls.</p> <p>Separate binding price controls for each element of the wholesale water value chain.</p> <p>Removal of formal price control regulation from water resources.</p>
Approach to historical RCV and new investments	RCV protection on efficient expenditure up to 31 March 2015, with lack of clarity on what happens after that date.	<p>RCV protection for efficient expenditure up to 31 March 2020.</p> <p>Incumbent companies to bear some under-utilisation risk for investment in new water resource capacity from 1 April 2020, with further consultation on how this will work in practice.</p>	Apply RCV protection to past investment and all new investment in water resources.
RCV allocation	No RCV allocation between network plus and water resources.	RCV allocation to enable the separate water resources price control, using an unfocused approach, but with each incumbent company proposing its own	No formal RCV allocation (RCV remains with network plus), but with water resources price control including explicit regulated profit allowance from RCV.

Policy area	'Do nothing' option	Preferred option	Other options considered
		allocation, subject to review by Ofwat.	<p>Focused RCV allocation to water resources, using MEAV valuation for water resources.</p> <p>Unfocused RCV allocation on the basis of MEAV valuation across whole of water resources and network plus assets.</p>
System operation	System operator functions carried out by incumbent companies and other market participants.	System operator functions carried out by incumbent companies and other market participants, with broader role for markets.	Independent system operator.

5.12.1 Our December consultation

In [Appendix 6 of the December Consultation](#), we set out an initial assessment of the benefits and costs of our proposals for water resources. Our overall view was that the net impact of our proposals would be positive and that the benefits could be significant. Our analysis was largely qualitative, given the early stage of the policy development process.

We identified these key expected benefits and costs.

- **Increased trading across company boundaries** – making more efficient use of current assets and avoiding the need for early investment in developing new water resources, such as reservoirs.
- **Greater management focus** – as a result of the separate price control and through the prospect of bilateral trading, which would lead to more efficiencies;
- **Increased interconnection** – between incumbent companies and with new resource providers. This would strengthen network resilience and give companies greater scope to use alternative resources, which should reduce the level of unsustainable water abstraction.
- **Set-up costs** – for designing and implementing separate price controls, the information database and access pricing to support bilateral trading.
- **Ongoing costs** – for data provision, administration of the information database and access pricing, as well as the added complexity of a separate price control.
- **No material impact on financing costs** – as we were proposing to protect legacy assets.

This was supported by our interconnection modelling reported in ‘[Appendix 2: Water resources – supporting evidence and design options](#)’ of our December consultation. We estimated that the potential cost savings available from greater interconnection between and within companies in England and Wales was up to £914 million (2012-13 prices) in NPV terms over the lifetime of the assets. Expressed in 2015-16 prices and over 30 years, this equates to £614 million of cost savings. These cost savings come from the lower cost of water trading compared with building new water resource assets.

5.12.2 Responses to our December consultation

There were few comments on our initial draft impact assessment for water resources. The key issues were as follows.

- **Uncertainties around the benefits of increased water trading.** Anglian Water thought a more robust cost-benefit analysis was needed for physical water trading, and argued that this should be developed by Ofwat in collaboration with the industry, Environment Agency and the Drinking Water Inspectorate. Thames Water said the benefits were overstated, as they were based on the wrong planning conditions. United Utilities said the potential for trading was greater for sludge, although individual trades could be of greater value for water resources.
- **Scope of the analysis.** The Welsh Government said that estimates for the benefits from water trading was not split between England and Wales, and that any Welsh figure needed to be based on evidence gathered from within Wales. Northumbrian Water, Thames Water and Yorkshire Water said the scope of the impact assessment needed to be wider and consider issues such as the extra complexity, MEAV costs and market set-up costs. Yorkshire Water also said the cost-benefit analysis for the wholesale water trading model and the bilateral model needed to be carried out separately.
- **Impact on risk and financing costs.** Several respondents, including Dŵr Cymru, Northumbrian Water, Portsmouth Water and Thames Water, said the overall changes proposed in our December consultation (including for water resources) were likely to increase the cost of capital. Most companies said there would be some increased risk of RCV stranding despite our commitment to protect efficient investments up to 2020. However, United Utilities said that our proposed approach protected companies from any financial impact of asset stranding, and that the risk of any assets being stranded up to 2025 was low in any case.

5.12.3 Our review and analysis

We recognise that there is uncertainty around the potential benefits of increased water trading. As we noted in December, our interconnection methodology aimed to indicate the value that could be generated through increased interconnection within and between companies, rather than to identify specific trades that were beneficial. We considered the specific points raised by respondents and our updated analysis (set out in Appendix 3, with base case results summarised in Table 2 below) still suggests that there is scope for significant benefits from increased interconnection.

It is important to note that the benefits of our approach do not arise solely from increased trading between incumbent providers. In our December consultation, we identified potential gains from greater management focus and increased network resilience, although we did not attempt to quantify these. Since December, we have carried out two more pieces of analysis, to examine:

- **the scope for efficiency gains in the provision of incremental capacity** – as a result of third parties being more engaged in providing water resources to the market; and
- **the scope for wider efficiency gains in maintaining and operating existing capacity** – for example, as a result of knowledge and innovation transfer from markets in incremental capacity, as well as more transparent information on costs and better targeted regulatory incentives.

Our approach is explained in Appendix 3, along with detailed results, while the key results are summarised in Table 2 below.

We have also carried out further analysis on the potential costs of our decisions as follows:

- **costs to the industry** of the market information platform and price control separation, based on information requested from incumbent companies in February – this is discussed in Appendix 3; and
- **regulatory costs** of our overall policy package – this is discussed in Appendix 6, and the assumptions we used for allocating a proportion of these costs to our water resources policies are set out in Appendix 3.

The key results of this analysis are also summarised in Table 2 below.

We have also considered the impact of our decisions on the **cost of capital**, which is also discussed in Appendix 3. In summary, the introduction of a separate price control itself does not introduce any additional financing risk, and nor do our policies

to promote increased participation by third parties in the WRMP process (the bidding market model), since these do not change the utilisation risk profile for incumbents. However, we are consulting on the introduction of utilisation risk for new assets arising from bilateral market entry in England, and also considering whether to introduce some level of risk-sharing for market-wide demand risk. Either of these could in theory lead to cost of capital impacts.

Regarding risk from bilateral market entry, PwC's report '[Balance of risk and reward across the water and sewerage value chain](#)' found that competition risks are diversifiable and do not in themselves necessarily lead to a higher cost of capital. However, PwC noted that market reforms could introduce asymmetric risks for investors in cases where existing investment is exposed to risk and expected cash flows are altered as a result of the reform – which could alter the value of the business. Asymmetric risks could lead to downside risks, not captured through the Capital Asset Pricing Mechanism (CAPM), which could require investors to be compensated through a higher return, or alternatively to a lower return in cases where there is greater potential for upside.

We conclude that there will be no impact on financing costs from bilateral markets in our base case, because:

- the design of the price control and our commitment to protection of the pre-2020 RCV means that existing investment is not exposed to risk;
- the pace of bilateral market development is likely to be gradual, given that these markets do not exist at the moment and also rely on the development of business retail competition; and
- in line with PwC's view, competition risks are diversifiable and hence an asymmetric risk premium is unlikely to be required for new investment.

We accept however that there could be downside risk to this view, given uncertainty over the trajectory for development of bilateral markets in England. As the Welsh Government is not proposing to introduce bilateral markets, this does not apply in Wales.

We have not included an assessment of the potential impacts of allocating a share of market-wide demand risk for new investment to incumbent companies, because it is not part of our policy package at this stage. We are putting the issue forward for initial consultation as set out in Appendix 3, and we expect that any policy decisions in this area would form part of our PR19 final determinations with an assessment of costs and benefits undertaken at the relevant stage of the price review process.

In light of the feedback from the Welsh Government, we have provided separate estimates for the benefits and costs of our proposals in England and Wales wherever possible. With respect to the Welsh Government's request that Welsh figures should be based on evidence gathered from Wales, the underlying data used in all our modelling analyses is derived from sources that cover both England and Wales. Our analysis of efficiency gains in incremental capacity is based on WRMP data for all incumbent water companies, for example, and our analysis of the estimated costs of our proposals is based on information requests sent to all incumbent water companies in England and Wales. Our assumptions about the potential efficiency gains relating to incremental and existing capacity are generic because the relevant aspects of our reform proposals apply to both England and Wales.

We have not carried out separate impact assessments for our bidding market and bilateral trading policies as suggested by Yorkshire Water. As noted above, we do not consider that there is a feasible 'do nothing' option in the case of bilateral markets, as the Water Act 2014 requires us to put in place a new access pricing regime for companies based wholly or mainly in England. However, our assessment of regulatory costs in Appendix 6 includes the cost of measures to implement bilateral markets, and we have also reviewed the [Impact Assessment published for the Water Act 2014 proposals on upstream competition](#), which was focused on the development of bilateral markets. Further details are set out in Appendix 3.

5.12.4 Our impact assessment conclusion

In Appendix 3 we set out the main results of our updated impact assessment for our final water resources policy package (versus the alternative 'do nothing' scenario). This details the benefits and costs (both quantified and non-quantified), the risks and uncertainties, the distribution of impacts, and a qualitative assessment against our Water 2020 objectives. The main results are summarised in the table below.

Our conclusion is that our final preferred policy package will generate the greatest net benefits, taking account of the risks and uncertainties involved. The table below shows that our policies have significant net benefits overall. Using mid-point figures for benefits and costs (and the base case figure for our water trading analysis), we estimate the **total net benefits of our policies at £802 million NPV** (calculated over 30 years, using the Social Time Preference Discount Rate of 3.5%). The benefit-to-cost ratio of our policies using this approach is around 25:1.

Most of the benefits are felt in England, which reflects the larger population size of England relative to Wales. It also reflects the fact that the majority of WRZs in Wales are currently in water surplus, which reduces the scope for cost and efficiency

savings from water trading between incumbent providers and from increased use of markets in new water resource investment. On wider efficiency gains, however, the benefits are higher in Wales than in England relative to the number of customers. This reflects the relatively larger size of the existing water resources asset base in Wales and smaller population. Overall, the estimated benefit-to-cost ratio is positive in both England and Wales, but is significantly smaller in Wales at around 4:1.

Table 12: Summary of estimated costs and benefits for the final preferred policy package against the ‘do nothing’ option (2015-16 price, NPV over 30 years)

	Benefits of our approach		Costs of our approach	
Elements that have been quantified	Increased water trading between incumbent providers.	£416 million to £810 million	Costs to industry of improving market information and price control separation.	£18 million to £28 million
	Efficiency gains for new investment.	£100 million to £202 million	Regulatory costs of improving market information and price control separation	£4.4 million to £14 million
	Wider efficiency gains for existing capacity.	£81 million to £242 million		
	Total scope of quantified benefits*	£597 million to £1,254 million	Total scope of quantified costs*	£23 million to £42 million
	England	£588 million to £1,232 million	England	£20 million to £37 million
	Wales	£9 million to £22 million	Wales	£2.7 million to £4.9 million
Elements that have not been quantified	Greater network resilience from increased interconnection.		Risk of failure/insolvency of small new entrant companies with expansion of markets and increased role of third parties. This can be mitigated using special administration arrangements.	
	Potential reductions in the level of unsustainable abstraction in water-scarce regions from more use of alternative resources.		Increased risk of ecological impacts from water transfer. This can be mitigated using environmental regulations.	
			Cost of capital impacts have been estimated as zero in our base case, for the reasons discussed above and in Appendix 3.	

* Numbers may not add due to rounding.

5.13 Summary of our decisions

We confirm our decisions to tackle water scarcity as follows.

- We will use our regulatory framework to **promote markets in water resources**.
- We will require incumbent companies to **make key data available on supply-demand deficits and water resource costs in a consistent format**. This should be available on company websites with Ofwat providing a webpage that signposts where that information is held.
- We will require each incumbent company to **publish a bid assessment framework** setting out its policies and processes for assessing bids from third party providers of water resources and leakage/demand management services.
- We will **develop a new access-pricing framework** for England to help third parties enter the market if they can provide new water resources as efficiently as incumbents. This will be implemented with a combination of cost-based charges for network plus services and a compensation payment that reflects the incumbent's forward-looking incremental water resource costs.
- We will **introduce separate binding price controls** for water resources and network plus.
- We will **provide regulatory capital value (RCV) protection** for efficient expenditure up to 31 March 2020.
- We will **require incumbent companies to bear some under-utilisation risk** for investment in new water resource capacity from 1 April 2020, and are consulting further on how this will work in practice.
- We will **require RCV allocation** to enable the separate water resources price control. We will use an unfocused approach, but each company will propose its own allocation to the water resources control to Ofwat for review.
- **System operator functions will be carried out by incumbent companies** and other market participants, with a broader role to be played by markets.

6. Enabling direct procurement for customers

6.1 Our decisions

- We will set **our expectations for companies to use direct procurement for customers** for suitable high-value projects through the risk-based review of business plans at PR19.
- We will set a guideline value of £100 million whole-life totex as the **boundary above which direct procurement for customers should be considered** for suitable projects.

6.2 Introduction

In this section, we set out our decisions on our proposed approach for direct procurement for customers and areas for further consultation, building on what we set out in our December consultation. We reflect on what respondents to that consultation told us and confirm the decisions we have made and the thinking behind them.

6.2.1 Overview

Water companies currently use a variety of arrangements to provide services, including self-provision and procuring services from third parties. We think by encouraging companies to include a broader set of arrangements needed to deliver services, specifically the financing of large-scale projects and potentially the operation of new high-value assets, additional benefits for customers could be realised. We use the term 'direct procurement for customers' ('direct procurement') to describe these broader arrangements through which a water company procures services on behalf of customers.

We distinguish direct procurement from market testing by water companies. Market testing involves tendering for specific elements of projects, often the design and/or building of new infrastructure. Market testing can result in the water company using a bid from the tender or just using the costs provided by the bid to demonstrate that their own direct provision costs are efficient.

By contrast, under a direct procurement framework, the water company would seek bids from third parties and select the best value offer on behalf of its customers. A key difference between direct procurement and market testing is that, under a direct procurement arrangement, the service provider is competing to provide finance as well as construction and, where appropriate, operation of the new asset. This provides market evidence on the cost of finance, construction and potentially operation.

A direct procurement approach could be specified to require water companies to procure services from a third party. This approach was taken in the case of the Thames Tideway Tunnel project. However, given the wide potential to apply direct procurement in water and wastewater services and the limited experience with this approach, we think it is appropriate to allow companies to consider the full range of options, while setting out our expectations about its use. The onus will be on companies to demonstrate they have the best solution in their business plans.

In our December consultation, we proposed examining how direct procurement for customers could be more widely applied across water and wastewater services. We highlighted the benefits achieved by this approach across other sectors and through the Thames Tideway Tunnel scheme. We set our expectation that, for PR19, all companies should consider direct procurement for all discrete, large-scale enhancement projects (excluding sludge) and that direct procurement occurs on such projects with a value of more than £100 million.

6.2.2 Our longer-term vision

Consistent with our strategy, we will continue to encourage companies to take a longer-term view in their business plans. By encouraging companies to use a direct procurement approach to deliver suitable projects, and by giving them the flexibility to consider how this is done, we will ensure they take ownership for determining the most effective and efficient approach to delivering those projects.

Our vision is for companies to approach each discrete large-scale enhancement project by first asking: “What is the best way to deliver this for customers?” and then exploring the possible options, including direct procurement.

Both direct procurement and our approach to long-term outcomes encourage companies to take a longer-term view and we will be exploring how these will work together when we consult further on outcomes later this year.

6.2.3 Challenges and opportunities

In ‘[Towards Water 2020 – meeting the challenges for water and wastewater services in England and Wales](#)’, we identified the key challenges to the sector as:

- water scarcity and environmental water quality;
- maintaining and securing resilience; and
- pressures on customer bills and affordability.

Direct procurement will be part of our regulatory solution to these challenges. Meeting the first challenge will require significant changes in the way water companies run their businesses. Significant investment may also be required to maintain and secure resilience. Direct procurement will provide a clear framework for companies to determine the most effective and efficient solutions to these challenges and will complement our proposals on water trading and on abstraction reform from the UK and Welsh Governments. As it encourages companies to look for the most efficient delivery option, including looking at alternative sources of finance, direct procurement will help the sector meet the affordability challenge as well.

The opportunities for this type of approach already exist in the sector. We acknowledge Anglian Water’s contribution to the marketplace of ideas ‘[Financing multi-sector water supply assets 2015](#)’, which considered a range of options for financing new water resources, including procurement from third parties. Historically, we have not seen evidence that companies have considered alternative financing arrangements in their business plans. By providing a flexible approach, and by shining a light and providing appropriate incentives through the risk-based review, we think opportunities will be realised to deliver projects more effectively and efficiently to customers.

6.2.4 Our position and next steps

Our immediate priority is to provide effective incentives for water companies to use direct procurement to deliver benefits for customers. We think this approach is equally applicable to water companies whose areas are wholly or mainly in England or Wales. Whether direct procurement is appropriate for water companies will depend on the scale of discrete enhancement projects in their investment programmes.

Putting in place a regulatory framework that creates effective incentives for direct procurement will result in water companies challenging themselves to deliver more effective outcomes for customers at the next price review. We consider further work

on models (such as design and build versus design, build and operate) for direct procurement and the impact on risk allocation between provider, company and customers to be valuable and would welcome contributions from the sector.

We are proposing to encourage and enable direct procurement arrangements, but still allow water companies to self provide, where it is well evidenced that it is efficient to do so. We do not think any licence changes are necessary immediately to implement these proposals. However, we would be open to exploring the possibility of licence changes, for example, to provide a separate price control for discrete projects if proposed by individual water companies.

6.3 The case for direct procurement

6.3.1 Our December consultation

In our December consultation, we explained how greater use of direct procurement on behalf of customers can help ensure customers receive the best possible service at an appropriate price. We proposed examining how direct procurement could be used more widely across water and wastewater services – in particular, to identify where the gains might be greatest.

We also set out our expectation, for PR19, that all companies should consider direct procurement for all discrete large-scale enhancement projects (excluding sludge where our approach is set out in Chapter 4). Specifically, we said direct procurement should be used for any discrete enhancement project of more than £100 million. We thought this provided a proportionate basis for identifying where direct procurement has the most benefits, although this could be reviewed over time.

6.3.2 Responses to our December consultation

Of those who responded to the questions we raised, most were supportive of our direct procurement proposals. Some were open to considering any procurement option, provided it delivered an efficient outcome for customers. One company suggested valuable lessons could be learned from the experience of the Thames Tideway Tunnel project and applied more broadly across the sector. That said, several respondents cited caveats or qualifications. The Consumer Council for Water wanted incumbent companies to be responsible for any third parties' customer-facing activities involved in the construction or operation of assets delivered under this arrangement. An investment banking group thought there could be unintended

consequences if companies used direct procurement for projects below the threshold, or if the complexity in tendering outweighed the benefits to customers. One company noted that outsourcing assets operation would be a significant shift, entailing risks which would need to be managed. Another company thought legislative and regulatory barriers would need to be addressed and pointed out that corresponding policies in the energy sector have taken many years and much work to put into practice.

Four water companies were sceptical that greater use of direct procurement would yield significant benefits except on the largest projects. One company suggested its use be limited to the rare circumstances in which a scheme has a significant effect on a company's financeability and where there is a material impact on customer bills. Another company thought that, as all of its capital programme and half of its operations were already competitively tendered, the scope for direct procurement to yield savings would be limited. A third company thought there was a risk financing costs might be higher if independent providers were unable to diversify their risk across a portfolio of schemes. A fourth company cited the National Audit Office (NAO) criticisms of the Ofgem model, including potentially lengthy delays to investment and that it placed too much risk on customers²⁴.

On the proposal regarding a £100 million threshold value, views were mixed. Some thought this figure was about right, with one water company suggesting it would limit the number of projects in the experimental stage of this initiative. Another company suggested it would be worth considering whether a lower threshold could be used to include a greater number of projects. Citizen's Advice also suggested lowering the bar to £50 million, but acknowledged the benefits of competition needed to be balanced against the costs of tendering.

However, more respondents were either unsure about the £100 million threshold, thought that it was too low, believed a threshold should be expressed in terms of bill impact or questioned whether any threshold should be set at all. One water company said there was no obvious rationale for the proposed value, while another company and the Consumer Council for Water thought more work was needed on the costs and benefits before settling on a value. A number of respondents made comments about the transaction costs and questioned whether £100 million was sufficiently

²⁴ 'Offshore electricity transmission: a new model for delivering infrastructure', National Audit Office, June 2012.

high to ensure potential savings would outweigh them. One company suggested the need for flexibility in the value of the threshold could vary from company to company.

6.3.3 Our review and analysis

As well as considering the responses to our December consultation, we have examined the case for direct procurement looking at a range of possible models. A description and assessment of these is given in '[Appendix 5: Enabling direct procurement for customers – further evidence and analysis](#)'. We have held discussions with consultants and a regulator with experience in this area, and reviewed the findings of various reports to assess the potential scope for its wider use in water and wastewater services and the benefits that could be delivered.

Of particular note is the report published by Ofgem in March 2016 on the evaluation of the benefits arising from the early Offshore Transmission Owner (OFTO) tender rounds²⁵. This concluded that, in total across the three tender rounds held, the savings as a percentage of the OFTO tender revenue streams are between 19-23% against a range of relevant scenarios. Ofgem calculated this translates to a monetary saving of at least £700 million over 20 years. This derives from significant savings in operating and financing costs.

Our analysis shows that the 15 projects comprising the first three OFTO tender rounds are similar in value to the largest water and wastewater services enhancement projects the last three price reviews funded. This suggests suitable water and wastewater services projects are large enough to generate similar levels of interest from potential financiers. On the other hand, differences in the type of projects between the energy and water sectors could constrain the possible scale of savings in water. While some large projects in water and wastewater services are not as operationally separable as the transmission schemes covered by the OFTO regime, there are examples of large projects, such as reservoirs or new treatment works, that could be operated separately. These would be operated as part of a broader system, but gains in operational efficiency could be gained from a direct procurement project. Significant gains from more efficient financing could also be achieved across projects even where the operation of assets cannot be separated.

²⁵ '[Evaluation of OFTO tender round 2 and 3 benefits](#)', prepared by Cambridge Economic Policy Associates Ltd for Ofgem, March 2016.

We acknowledge that the threshold should be set based on evidence relevant to water and wastewater services. However, few respondents who disagreed with the proposal suggested an alternative threshold value and none provided any evidence on the costs and/or benefits of moving to an alternative value. There were suggestions the threshold could be set flexibly, possibly as a percentage of the company's totex.

On balance, we consider £100 million an appropriate threshold. It is derived from the £100m threshold value Ofgem set for its required tendering of onshore electricity transmission projects. The threshold was calculated by assuming there is a fixed cost of running a direct procurement process independent of the size of the scheme, and hence the size of the potential benefits. These include the costs of setting up and advertising tenders. There are additional variable costs of running such a process that depend on the size and complexity of the project. These include the cost of reviewing the engineering viability of designs submitted through the tender.

The benefits are dependent on the size and type of the project, so there will be a minimum efficient project scale.

The key differences between our proposed process and Ofgem's are as follows.

- Ofgem runs the tender process for offshore electricity transmission projects and will do so for onshore electricity transmission schemes – we are proposing water companies run the tenders themselves in water and wastewater services.
- Ofgem's approach is grounded in specific primary legislation. Our proposals will be incentivised through the risk-based review in the price-review process, but is not explicitly required by law.
- The proposed £100 million threshold is expressed as a whole-life totex value. The Ofgem threshold is expressed as an expected capital expenditure (capex) value. While we acknowledge whole-life costs are more difficult to estimate and so prone to greater uncertainty than expected capex, they provide a more complete picture of overall project costs and are potentially a better indicator of its attractiveness to investors.

Despite the difference in the way they are expressed, we do not think the differences between the two sectors should result in different thresholds. There will be some fixed costs of running a direct procurement process regardless of whether it is run by a regulator or the companies, so a minimum value for such projects is appropriate.

Although the types of project may be different, similar cost categories will be incurred in assessing the bids – engineering assessments, financial assessments, and so on. And projects more likely to be separable and appropriate for direct procurement –

such as reservoirs and transfer pipelines – will be more similar to projects in electricity transmission.

A key point is that the proposed threshold should be a guideline value. This means the use of direct procurement is not precluded for suitable schemes of a lesser value if this is considered appropriate by water companies and can be demonstrated to be beneficial for customers. If companies' business plans include projects which are below but near to the threshold and that appear to satisfy all of the other criteria for being considered suitable for direct procurement, we would challenge companies on whether direct procurement could be used. We would also challenge companies where it looked like they were splitting large projects into smaller projects in order to avoid considering the use of direct procurement for their delivery.

We expect companies would either use direct procurement for projects above or near the guideline value or justify why it is not in customers' interests to do so. We think adopting a 'soft' threshold will also address concerns some respondents expressed about the £100 million value.

6.3.4 The model for direct procurement

We have considered a number of models through which wider use of direct procurement may be made in water and wastewater services. These range from a more flexible approach, where we rely on established regulatory tools to encourage companies to use direct procurement, to more prescriptive approaches such as the Thames Tideway Tunnel and Ofgem's OFTO model. Figure 12 summarises these, drawing out their main features. Further detail is provided in ['Appendix 5: Enabling direct procurement for customers – further evidence and analysis'](#).

Figure 12: Options for implementing direct procurement

	1 No change	2 Direct procurement 'encouraged'	3 Direct procurement 'prescribed'	4 Thames Tideway-type model	5 Ofgem model
	No change from current use of competitive tendering	Direct procurement encouraged through risk based review	Direct procurement required for all qualifying projects	Water companies run tenders for separately licensed infrastructure providers	Ofwat runs tenders for separately licensed infrastructure provide
Legislation	No legislation required			Legislation could be required	
Financing costs	By water company	Competitive tender	Competitive tender – financing costs for project specified separately in price control.		
Procurement	By water company	By water company	By water company subject to Ofwat rules	By water company	By Ofwat
Extent of competition	Market testing of design and build	Direct procurement of design, build, finance and operation	Direct procurement of design, build, finance and operation	Direct procurement but bidders limited by exclusion of water company	Direct procurement of design, build, finance and operation
Timing and price controls	Funding for projects decided in 5 year business plan cycle	Open to possibility of separate price control for companies that propose it	Funding set outside of 5-year price control cycle; price control set for water company for the project	Funding set outside of 5-year price control cycle; separate price control given to separate licensed entity	
Threshold	No threshold	Soft guideline threshold	Hard threshold	Criteria set out in Specified Infrastructure Projects Regulations	Threshold could be set out in legislation

We do not think there is likely to be any material impact on a company's risk profile – and thereby the weighted average cost of capital (WACC) – from removing directly procured projects from the wholesale price controls in any of the options. This is because potential candidate projects for direct procurement over 2005-20 only represent between 2 and 4% of the value chain in this period and have not featured any unusual engineering or other risks.

We are not proposing to introduce any new licence conditions related to direct procurement. However, we have decided to keep open the option for companies to propose to include a separate price control for direct procurement projects. We will consider such proposals where companies can provide evidence that this would be the best way of delivering a direct procurement solution. This could be to allow for a longer-term revenue stream to support a longer-term contract than the standard five year control period would allow. We would only proceed on this basis if company can demonstrate that this solution is in the best interest of customers. At PR14 we made licence modifications where companies had requested them and we were satisfied that they were appropriate to achieve our statutory objectives. For example, at the request of three companies, we agreed licence modifications to allow for in-period adjustments to revenue for outcome delivery incentives rewards and penalties.

Under our proposed approach to direct procurement, no new licences would be created. The incumbent water companies would therefore still be responsible for fulfilling their duties under their licences under a direct procurement approach.

6.3.5 Our direct procurement policy

We will expect companies to use direct procurement for customers for suitable enhancement schemes with a whole-life totex value of more than £100 million. This is a guideline value to provide the flexibility advocated by some respondents.

We will evaluate companies' proposals through a series of tests applied at the risk-based review of business plans, which will contribute towards the overall assessment of a company's business plan. The tests we will develop for the risk-based review of business plans will aim to ensure:

- all relevant projects are identified;
- direct procurement is used where appropriate;
- where used, the direct procurement process will have resulted in efficient outcome for customers;
- where a separate price control is proposed, this will be beneficial to customers; and
- where company business plans do not appropriately identify or evaluate scope for direct procurement, we would reflect this in the company business plan assessment element of the risk-based review. We may also ask the company to undertake further work or modify their business plan.

6.4 The impacts of our decisions

6.4.1 How our direct procurement proposals relate to Water 2020 objectives

Figure 13 summarises how each of the options considered for implementing direct procurement meets our Water 2020 objectives, addresses known problems and is practical to implement.

Figure 13: Preferred option for direct procurement

	1 Do nothing	Preferred option 2 Direct procurement 'encouraged'	3 Direct procurement 'prescribed'	4 Thames Tideway-type model	5 Ofgem model
Achieving our objectives	Transparent and predictable but risks missing opportunity to promote efficiency through effective competition.	Targeted at projects with appropriate economic characteristics; consumer objective met through effective competition. ✓	Risk of compromising company ownership of their business plans; risk of efficient options being excluded if incumbent cannot bid.	Equally as compliant with objectives as Thames Tideway. ✓	Consumer objective furthered by the promotion of effective competition, but removes ownership and accountability from company.
Addressing known problems	Does not address problems identified. ✗	Encourages water companies to consider alternative financing solutions, but does not require their use.	Requires use of alternative financing where available. Moves procurement decision outside of 5-year process and opens possibility of setting longer-term price control to enhance longer-term focus. ✓		
Practicality	No additional cost. ✓	Can be encouraged through RBR; possible under current legislation; voluntary licence change needed if separate price controls set. ✓	Exclusion of water company from bidding process could require licence change; allowing water companies to bid could reduce confidence in process. ✗	Additional costs if extended to more projects; could require primary legislation to allow SIP Regulations to apply to broader range of schemes. ✗	Additional costs of regulator-led bidding process; could require primary legislation to introduce new forms of licence and to allow Ofwat to run tenders. ✗

The costs and benefits of our preferred option are discussed further below. Our assessment of the alternative options is provided in '[Appendix 5: Enabling direct procurement for customers – further evidence and analysis](#)'.

Table 13: Summary of the scope of estimated costs and benefits against the ‘do nothing’ option (2015-16 NPV)²⁶

	Scope of benefits of our approach		Scope of costs of our approach	
Elements that have been quantified	Financing cost savings	£100 million to £480 million	Tender costs	£50 million to £80 million
	Operational cost savings	£350 million to £450 million		
	Total scope of quantified benefits	£450 million to £930 million	Total scope of quantified costs	£50 million to £80 million
Elements that cannot be quantified	Extending competition may be expected to stimulate innovation.		<p>There is a risk that setting the threshold at £100 million means the opportunity for savings on lower value projects is foregone – mitigated through setting threshold as a guideline.</p> <p>There will be a small additional regulatory cost in assessing direct procurement in the risk-based review, and including these projects in price determinations.</p>	

One possible consequence of direct procurement is that water companies may not design, build and finance as many large projects or operate the new assets as they would under existing methods. Consequently, water companies and their shareholders may feel they are losing out. But this will be offset by gains for other private companies and customers.

We have not identified any specific impacts on particular stakeholder groups or the environment. Nor, in our judgement, is there any difference in the impact our proposals would have on companies in England and Wales. As the costs and benefits will depend on whether any projects that are suitable for direct procurement are brought forward for each company, we have not been able to split the costs and benefits between England and Wales. No company whose area is wholly or mainly in Wales has had a scheme worth more than £100 million of capex in the last three

²⁶ As it is not possible to forecast where eligible projects are likely to materialise, we have not attempted to separately report the impacts for England and Wales. Tender cost estimates do not include the costs of unsuccessful tenderers, as it is assumed these will ultimately be borne by the sponsor of other projects tendered for and awarded to the same tenderers.

price review periods. But that does not preclude such a scheme in a future price review period.

Under our approach water companies will only face costs from using direct procurement where there are also associated benefits for customers. We therefore consider that our impact assessment justifies using direct procurement in both England and Wales.

We have not quantified the additional regulatory costs for direct procurement as we think that these will be small. The additional regulatory costs in carrying out future price controls have been assessed collectively as a package in the impact assessment appendix, rather than for each individual policy area. For further information on the quantification of regulatory costs, see '[Appendix 6: Our approach to assessing impacts and Ofwat's regulatory costs](#)'.

6.4.2 Our conclusion

Having considered the different policy option impacts, we think that our preferred option will generate the greatest net benefits, taking account of the risks and uncertainties involved. We estimate the net benefits of this approach to be between £400 million and £850 million.

6.5 Summary of our decisions

We confirm our decisions to enable direct procurement for customers as follows.

- We will set **our expectations for companies to use direct procurement for customers** for suitable high-value projects through the risk-based review of business plans at PR19.
- We will set a guideline value of £100 million whole-life totex as the **boundary above which direct procurement for customers should be considered** for suitable projects.

7. Targeting regulation for networks

7.1 Our decisions

- We will keep **total revenue controls** as the form of control for the water and wastewater network plus price controls.
- We will keep **five-year controls** for the water and wastewater network plus price controls.
- We will **set controls at the same time** for all wholesale areas.

7.2 Introduction

7.2.1 Overview

In our December consultation, we indicated that while markets in water resources and sludge treatment, transport and disposal may develop, some parts of the water sector will remain monopolies. This means we will still need to apply price regulation across the value chain.

To enable markets to develop in water resources and sludge treatment, transport and disposal, we will introduce two extra wholesale controls. This will take the total number of binding, separate wholesale controls from two to four:

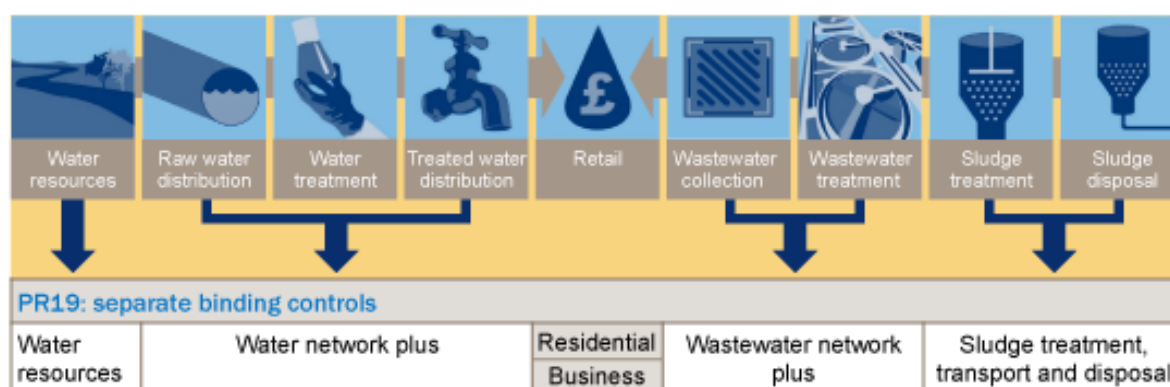
- sludge treatment, transport and disposal;
- wastewater network plus;
- water resources; and
- water network plus.

The scope of the water and wastewater network plus controls will include the parts of the wholesale water and wastewater business that remain once the activities associated with water resources and sludge treatment, transport and disposal – for which we are setting separate price controls – are excluded.

So the water network plus service (including raw water distribution, water treatment and treated water distribution) is the wholesale water service minus the parts falling within the scope of the proposed new price control for water resources. Similarly, the wastewater network plus service (including wastewater collection and wastewater

treatment) is the wholesale wastewater service minus the parts falling within the scope of the proposed new price control for sludge. We propose that boundaries should be based on accounting separation of the relevant businesses and are interested to hear views from the sector on this issue before finalising our position before the start of the price review. These issues are discussed further in Appendices 3 and 2 respectively. Figure 14 summarises our price control structure for the 2019 price review (PR19).

Figure 14: Price control structure for PR19



7.2.2 Our longer-term vision

Protecting customers by effectively regulating price and service will remain a vital role for us, even as we make greater use of markets for wholesale services in England. In Wales, where the role of markets will be more limited, regulation will similarly be vital for protecting customers in all parts of the value chain.

Our longer-term vision for our approach to price regulation of the network – and parts of the value chain – reflects both our statutory duties and our principles for setting price controls. These are outlined in our July 2015 document '[Towards Water 2020 – meeting the challenges for water and wastewater services in England and Wales](#)'. These principles guided our approach to the 2014 price review (PR14) and will continue to underpin our price control methodology for PR19.

Specifically, our vision is for a targeted, transparent and predictable set of price controls that we can adapt to changes in water and wastewater services – and changes in our overall approach to regulation – over time. We also want to ensure that our approach to price regulation encourages companies to think long-term and manage risks, rather than focus unduly on the five-year price control cycle.

7.2.3 Challenges and opportunities

In our July 2015 publication '[Towards Water 2020 – meeting the challenges for water and wastewater services in England and Wales](#)', we described the growing pressure on the water sector to address challenges such as water scarcity and environmental quality while improving the resilience of systems and services to customers. We confirmed that our framework for economic regulation has a vital role to play in helping the sector deliver a service that maintains and deepens the trust and confidence of its customers.

Our approach to the network plus price controls for PR19 gives us an opportunity to help companies plan with certainty and take a long-term view on how best to address these challenges.

7.2.4 Our position and next steps

Our position for our network plus controls is to keep the elements of our regulatory approach that are working well. These include the separate, binding water and wastewater wholesale price controls that limit changes to charges levied – or the revenue that can be recovered – by each company, as determined by us at PR14. We will retain our incentive-based regulation approach, which aligns the interests of investors and company management with those of customers and the environment, at PR19.

We will continue to allow for general inflation in prices (although we are proposing to change our measure of inflation from the Retail Price Index to the Consumer Price Index, as set out in Chapter 3) and to allow companies to earn a return (based on a weighted average cost of capital) on their RCV.

7.3 Form and scope of control

7.3.1 Our December consultation

Water company licences provide for us to set controls on the charges each company can levy and/or the revenue it is allowed in each charging year²⁷. Unlike previous

²⁷ Schedule 2, Condition B, paragraph 8.4/9.4 (water only company/water and sewerage company).

price reviews, our PR14 wholesale price controls (that is, those related to wholesale activities, except those activities for which there are excluded charges²⁸) were total revenue controls. That is, they limited the total wholesale revenues an appointed company could recover in relation to its relevant water and wastewater activities in 2015-20.

In our December consultation, we said that total revenue controls are still an appropriate **form of control** for the water network plus and wastewater network plus parts of an incumbent water company's business. While early in the control period, this form of control appears to be working well, as it prevents excessive volatility of revenue due to volume fluctuation. It should also help smooth prices over the longer term. It is also consistent with companies' ownership of their charges to customers: it gives companies the flexibility to adjust individual tariffs within the revenue cap, subject to our charging rules.

We introduced a wholesale forecasting incentive mechanism to encourage companies to accurately set charges to recover allowed revenues. Retaining total revenue controls for PR19 will help to provide certainty and stability for companies and investors and align their interests with those of customers and the environment.

We also said that the **scope of control** for the water and wastewater network plus controls will include the parts of the wholesale water and wastewater business (including raw water distribution, water treatment, treated water distribution, wastewater collection and wastewater treatment) that remain once the activities associated with water resources and sludge treatment, transport and disposal – for which we are setting separate price controls – are excluded. This helps to ensure that all activities are allocated to either control and avoids risk of under or over-recovered costs.

7.3.2 Responses to our December consultation

Respondents to our December consultation expressed strong support for keeping total revenue controls. Most companies agreed with our proposal to apply this form of control at PR19 for the network plus controls, with the remainder expressing a neutral view. All the non-water company respondents who expressed a view also favoured total revenue controls. No respondents disagreed with our proposal.

²⁸ Schedule 2, Condition B, paragraph 2 has definitions of these terms.

One company suggested that, before committing to them at PR19, it may be worth seeing how total revenue controls performed in relation to Ofwat's objectives. Most comments were more positive.

"They are a good way of ensuring revenue variations are corrected for in-period rather than aggregated and applied at the end of the control period, thus avoiding the risk of creating financeability issues, temporary revenue windfalls or large impacts on customer bills."

"They will help reduce risk and ultimately keep customer bills low through a low cost of capital."

"This provides certainty of revenue to support investment decision making."

"This is more in line with our duty to promote efficient water use."

7.3.3 Our review and analysis

The responses demonstrate widespread support for retaining a form of control for network plus that guarantees companies a certain level of revenue (as changes in demand and volumes flow through to prices). The arguments put forward by companies align with our own reasoning, set out in our PR14 consultation paper '[Setting price controls for 2015-20 – framework and approach: a consultation](#)'.

We also want to acknowledge the point that a revenue cap removes any incentive on companies not to promote water efficiency to customers. But as long as the marginal cost of providing additional water exceeds the associated extra revenue to the company, a price cap avoids this risk just as well.

In summary, our reasons for adopting this form of control at PR14 still apply, and we have heard no strong arguments in favour of an alternative approach (such as limiting average charge increases, which was the approach at price reviews before PR14).

Total revenue controls do have the potential to affect cost recovery, as variations in volume tend to result in under- or over-recovery of cost – though the significance of this will depend on the marginal cost function.

We also acknowledge one potentially perverse outcome from the customer perspective. If customers collectively reduce consumption, their unit charges will go

up to compensate for the loss of revenue to the company. This could undermine large scale demand efficiency measures. However, total revenue controls will provide certainty and stability for companies and investors and help to align their interests with those of customers and the environment. They are also simple to administer compared to controls involving marginal cost type adjustments.

Unlike sludge and water resources (discussed in Chapters 4 and 5) the network plus controls will not be subject to volumetric or utilisation risk. As set out by [PwC](#), in the long term, businesses making up the water and wastewater network plus controls have similar or slightly lower risk than the sludge and water resources controls. The network plus price controls may benefit from improvements in forecasting driven by the increased focus on sludge and water resources price controls. Given the scale of sunk investment in the network plus price control and the required ongoing maintenance activity, any risk for the network plus price controls is likely to be very small.

For the purposes of the impact assessment we have assumed no change in the cost of capital associated with our approach to regulating network plus. This is because introducing separate price controls leads to a reallocation of risk between price controls, but no increase in risk overall. We discuss risk for the sludge and resources controls in Chapters 4 and 5.

7.3.4 Our policy decisions on the network plus form of control

The water network plus and wastewater network plus price controls will take the form of total revenue controls.

The water network plus control will reflect the water wholesale activities that do not fall under the separate water resources control (see Chapter 5). Similarly, the wastewater network plus control will reflect the wastewater wholesale activities that do not fall under the separate sludge control (see Chapter 4).

7.3.5 Consultation on the network plus scope of controls

In establishing the network plus controls for water and wastewater we will need to confirm the basis for setting the boundary for these controls: that is, which wholesale activities they cover. We propose to define activities on the basis of accounting separation of the relevant businesses. As discussed in Chapters 4 and 5 we have recently consulted on proposed adjustments to regulatory accounting guidelines and propose to make further fine-tuning adjustments for 2016/17. We appreciate it will be

important to have a firm basis for activities and approach to allocation of costs between controls in advance of and for the duration of the control period.

We also need to consider how to treat connection charges and other developer services, and whether or not revenues and cash receipts from these services should be included in the total revenue controls.

For PR14, the wholesale water and wastewater controls limited the total amount of wholesale revenue companies were allowed, including income from developer services (including infrastructure charges and payments for the requisition of new infrastructure). In our PR14 [‘Final price control determination notice’](#)²⁹, we explained that changes the UK Government made in the Water Act 2014 could mean the balance between connection and infrastructure charges and other wholesale charges could change within the next price control period. Therefore, including revenue from connection and infrastructure charges within the new wholesale total revenue controls should protect customers and make total bill revenues collected over the new price control period more stable³⁰.

However, we also provided for adjustments in total allowed revenues in some circumstances:

“If a company increased revenue by unduly reducing connection charges we may take corrective action to ensure that companies returned these monies (with financing costs) to customers. Similarly, although we have decided not to allow automatic adjustments to allowed revenues for demand variations in wholesale controls, if demand for connections is unexpectedly high then we would nevertheless consider allowing extra revenue to compensate for the loss of price control revenue on a case-by-case basis.”³¹

The approach we adopted for PR14 reflects some of the challenges that could arise from including connections revenue and connections costs in a pure total revenue control. For instance, if the volume of new connections work is substantially higher than forecast, a pure total revenue control would not increase to fund the additional

²⁹ [‘Final price control determination notice: policy chapter A3 – wholesale water and wastewater costs and revenues’](#) p47, Ofwat, December 2014.

³⁰ [‘Final price control determination notice: policy chapter A3 – wholesale water and wastewater costs and revenues’](#) p46, Ofwat, December 2014.

³¹ [‘Final price control determination notice: policy chapter A3 – wholesale water and wastewater costs and revenues’](#) p47, Ofwat, December 2014.

costs. And if the volume of new connections work is lower than forecast, and income from developer services is lower than expected, wholesale tariffs would need to increase to make up the difference.

One stakeholder, Wessex Water, commented on the PR14 approach in its response to our December 2015 consultation. It said that Ofwat should consider again whether contributions from developers should be part of the total revenue controls, as the relationship between income and cost is far more direct in this instance. It suggested that, under the PR14 arrangements, companies might reduce new development activity to reduce both costs and incomes within the price control period.

As well as mitigating this issue, there are other reasons to consider excluding developer services (or at least their potentially competitive elements) from the total revenue controls. It could help make connections work a more level playing field for both incumbent water companies and self-lay organisations, and reduce the possibility of unfair cross-subsidy by incumbents. Where there is effective competition between incumbent water companies and self-lay organisations, this can protect customers seeking developer services.

However, these considerations only apply to the subset of developer services which are amenable to competition and self-lay. We would be interested in respondents' views on which particular developer services these are.

When setting charges for developer services, water companies will have to comply with the new charging rules introduced by the Water Act 2014 – as well as competition law.

There is an argument that we would become more reliant on these new charging rules if we exclude developer services from the network plus total revenue controls. If developer services remain part of the controls, water companies would not directly increase their revenues by setting higher charges for developer services, as these would need to be offset by reductions to wholesale tariffs. This might reduce the risk of companies setting unduly high charges for developer services.

However, keeping developer services within the total revenue controls does not guarantee that charges for developer services are reasonable. The response from Wessex Water indicates that the quality and timeliness of these services could be affected if they stay part of the controls.

Our December consultation did not cover these issues directly, but because of the licence modification work necessary to establish the separate network plus controls, we do need to decide how to treat developer services within these controls.

We would welcome stakeholders' views on the following options.

- Adopt the PR14 approach to developer services and connections charges (including provision for ex post adjustments by Ofwat) for the PR19 network plus controls.
- Include developer services and connections charges within the scope of the network plus total revenue controls, but with a mechanism for adjusting revenues more transparently and symmetrically according to variations in the volume of the required services.
- Exclude all developer services from the network plus price controls and rely on competition in self-lay, competition law and new charging rules.
- Exclude the developer services that are most open to competition (such as new on-site infrastructure) from the network plus price controls and rely on competition in self-lay, competition law and new charging rules for these services. Include the remaining developer services in the network plus price controls (potentially with a volume-related adjustment mechanism).

As well as these questions, we welcome stakeholders' views on any other areas of costs that should be excluded from the network plus price controls; and any other areas whose treatment we need to clarify.

Consultation questions: network plus scope of controls

Q1 Which of the options described in Section 7.3.5 (and/or which other options) should be used to treat developer services in the network plus total revenues? Please explain your reasoning. Please identify which services you think should fall within the generic term 'developer services' in the context of your answer.

Q2 Are there any other wholesale activities that should be excluded from the scope of the network plus price controls? If so, what are they and what problems would be resolved by excluding them?

Q3 Are there any costs that require clarification as to whether or not they should fall within the network plus price controls?

7.4 Length and timing of control

7.4.1 Our December consultation

In our December consultation, we proposed keeping the current five-year control periods for the water network plus and wastewater network plus price controls. We think this strikes an appropriate balance between the various arguments in favour of shorter or longer price control periods. For example, shorter periods would give us the flexibility to adapt our approach at a time when markets are evolving, while longer periods might better encourage companies to take a longer-term approach to managing their businesses.

We also proposed not to align the timing of our price controls with other industry planning cycles. This recognises the various different planning periods for water and wastewater and the impossibility, at present, of bringing them all into line.

Finally, we proposed not phasing the timing of the wholesale price controls. In our view the advantages of phasing – spreading the peak in the workload – are outweighed by the disadvantages of not being able to consider a company as a whole at one time.

7.4.2 Responses to our December consultation

Most respondents who expressed a view were in favour of keeping the current five-year price control period.

One company, Northumbrian Water, stated a preference for a longer period but, given the various changes and uncertainties at this stage, accepted that five years was appropriate for now. Another company, Severn Trent Water, said we need to strike a balance between providing stability for long-term investments and minimising the impact on a company's business if the economic fundamentals underpinning a determination change. Severn Trent also thought it was worth considering a longer period, similar to Ofgem's eight-year review cycle for distribution networks.

Another company, Bristol Water, had no objection to the five-year control period but noted some advantages to a six-year period, such as:

- allowing alignment with the river basin management plan (RBMP) timetable;
- providing an extra year of certainty in decision-making; and
- decoupling the price review cycle from the electoral cycle.

On the timing of the price control, improving the alignment of the water resources management planning (WRMP) and price review cycles was a common theme in consultation responses. One company, South West Water, argued that better alignment would avoid duplication of engagement activity and so ensure certainty of planning. Another company, Thames Water, suggested it would help companies keep customers better informed by reducing the number of consultations and better framing WRMP outcomes in the context of other wholesale attributes.

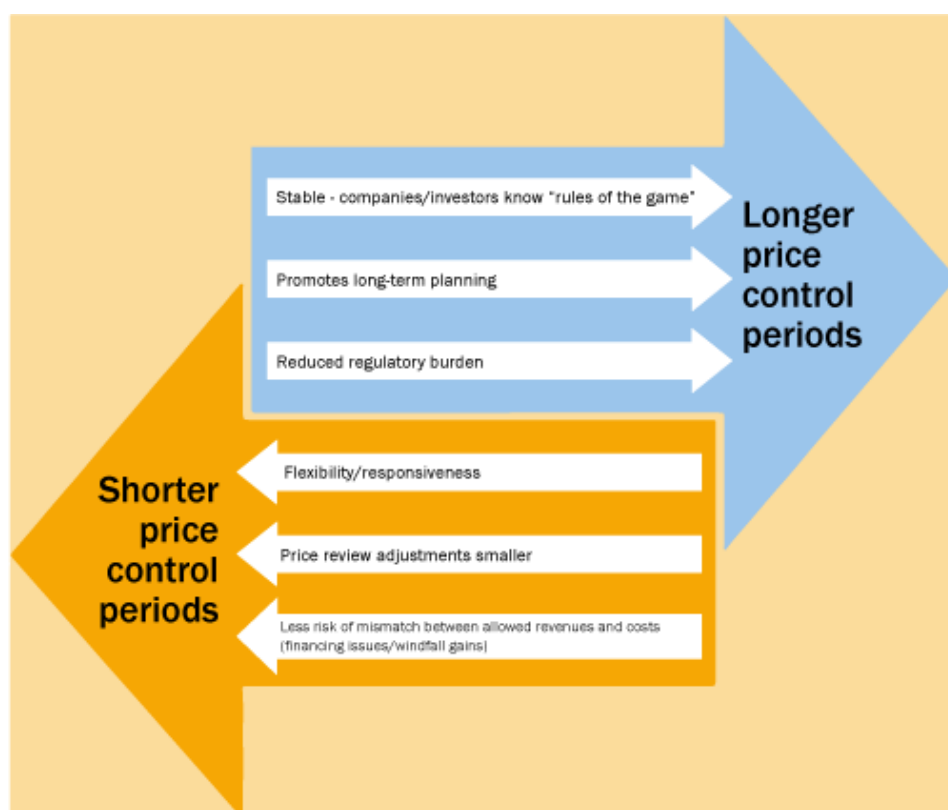
More specifically, Wessex Water suggested delaying the timescales associated with PR19 business plan submissions until the autumn of 2018, and Affinity Water urged that the next round of WRMPs be brought forward. Such views chimed broadly with responses from non-water companies. At the same time, certain respondents acknowledged the difficulty of aligning the two processes; Portsmouth Water commented that alignment, although desirable, was not essential.

Few respondents commented on the issue of phasing the price controls, but those that did agreed that on balance this was not desirable.

7.4.3 Our review and analysis

Generally, the arguments put forward by companies for either continuing with five-year controls or changing to a different duration echoed those we have previously identified (see Figure 15).

Figure 15: Relative pros and cons of increasing the duration of price controls



The five-year control sits comfortably within the range of price control durations in regulated industry regimes in the UK, Europe and Australia. This range was identified by Frontier Economics in '[Future price limits – Form of control and regulated/unregulated business](#)', a report prepared for Ofwat in July 2010, and updated by Northumbrian Water in '[The duration of price control: To change or not to change?](#)'. Northern Ireland Water and the Netherlands energy sector lie at the short end of the spectrum, currently operating on a three-year cycle; at the other end lies Ofgem's eight-year Revenue=Incentives+Innovation+Outputs (RIIO) control for transmission and distribution.

Ofgem set its eight-year RIIO control to encourage longer-term thinking and provide stability to support the large amount of investment planned in the energy sector. The approach incorporates a number of risk management measures, including a review of output requirements after four years to alleviate the risk of unfunded obligations arising mid-term. Ofgem also uses mechanisms such as debt indexation and cost pass-through.

A key difference between the energy and water sectors is that capital investment programmes driven by changing environmental and quality requirements have been far more significant for the water industry. The absence of a National Environment Programme in the energy sector may make forecasting error risk a less significant

issue than in the water sector. Consequently, longer price controls may be appropriate in the energy sector.

We note that while a longer control period has some benefits in encouraging a longer-term approach, it does not fundamentally change the stop/start impact of control periods. The sector needs to shift its focus away from the price review period on to the longer term and that extending the period of price control can at best address this only in part. The other changes that we are making including focusing on future as well as current customers, longer-term outcomes and placing business plans in a longer context are likely to be more important in creating a longer-term focus for the sector.

We have considered the argument that moving away from the current five-year period would break any links with the electoral cycle, but we are not aware of any advantages of this.

In our December consultation, we identified a risk that misalignment between the timetables for PR19, RBMPs and WRMPs could create uncertainty for the sector, resulting in higher costs for customers. To counter this, we committed to working with the UK and Welsh Governments and the other regulators to improve the planning processes and examine opportunities for better aligning them. As a result of this, we recently confirmed³² a revised PR19 timeline. The new timetable requires submission of business plans for 2020-25 on 3 September 2018.

Developing WRMPs and business plans are separate but linked processes. Companies currently carry out both at five-year intervals, but our December consultation commented on difficulties caused by misalignment of the two processes. As noted above, we have taken steps to ease these difficulties by modifying the timetables for PR19 and the next round of WRMPs. Nevertheless, it is clear to us that changing the length of the price review period (in either direction) without making an identical change to the WRMP process would exacerbate the current and future problems. Furthermore, the two processes would move out of phase by a different amount each cycle, giving the industry and its regulators a different set of problems at each price review: clearly a sub-optimal situation.

The timetable for the WRMP in Wales, as set out in [‘The Welsh Government guiding principles for developing water resources management plans \(WRMPs\) for 2020’](#)

³² [‘Letter to English water companies about business plan submission date for PR19’](#) and [‘Letter to Welsh water companies about business plan submission date for PR19’](#), both Ofwat, May 2016.

(April 2016), is very similar – though not identical – to England. Therefore, we do not think any misalignment issues resulting from changing the price control period would affect the two countries in significantly different ways.

In a report for Thames Water, KPMG identified forecasting errors as a material risk of lengthening the price control period. Without some form of correction mechanism, the longer the price control period, the less reliable the basis for the cost forecasts companies are required to make – and the greater the likelihood of these forecasts proving inaccurate. We expect companies' exposure to the risk of underestimating costs could translate into a higher cost of capital. On the other hand, overestimates that result in windfalls to companies risk the loss of customers' trust and confidence.

7.4.4 Our policy decisions on length and timing of control

We confirm that the length of the water network plus and wastewater network plus controls to be set at PR19 will be five years. This is a key design parameter which we expect to review periodically as markets develop. As set out in Chapter 2, we are promoting a longer-term focus on customers and outcomes and in our judgement, this will help deliver benefits of longer-term thinking and smoothing impacts between price control periods.

We also confirm that, as in previous price reviews, we will set controls for all wholesale areas at the same time. However, as noted in our December consultation, this issue is likely to merit review in the future, as our approach to retail and wholesale controls evolves.

Our decisions about the timing of key milestones in the PR19 process were set out in our letters to English and Welsh water companies, dated 5 May 2016. We confirm that we are delaying the submission date for business plans we proposed in our July 2015 consultation, to better align the PR19 business planning and WRMP processes.

7.5 The impacts of our decisions

We have defined the water and wastewater network plus services as the respective wholesale water services minus the parts that fall within the scope of the proposed new price controls for water resources and sludge. This means the scope of the network plus controls is defined by policy decisions on the water resources and sludge controls. The impact of these decisions is considered elsewhere in this document.

The length and timing of the controls will remain the same as at PR14. Therefore we have considered the potential impacts (in qualitative terms), risks and uncertainties of departing from the current five-year period in either direction.

Table 14: Factors tending to support different price control durations

Factor	Possible advantages of a price control duration of:		
	< 5 years	5 years (as at present)	> 5 years
Alignment with other planning processes		Best chance of alignment with WRMP process.	Possibility of alignment with six-year RBMP cycle (at expense of aggravating misalignment with WRMP process).
Efficiencies	Lower, but shared with customers earlier.		Can be retained for longer, creating greater incentives for companies.
Customer legitimacy	More direct linkage between performance and rewards/penalties. Less risk of losing trust as any windfall gains will feed through faster into lower bills. Greater opportunity for incremental changes rather than large shifts in regulatory regime.		
Regulatory burden			Reduced administrative burden on companies and regulators. Reduced distraction from day-to-day delivery of service for company management. Reduced consultation fatigue for stakeholders. Lower proportion of investment subject to complexity of overlap and transition programmes.
Capital investment cycle			Potential to dampen 'rollercoaster' profile of investment and

Factor	Possible advantages of a price control duration of:		
	< 5 years	5 years (as at present)	> 5 years
			associated inefficiencies.
Forecasting	Easier forecasting, translating into lower risk for companies.		Possible increased risk of forecasting error, translating into a higher cost of capital or the increased need for uncertainty mechanisms that could undermine incentives for companies to manage risk.
Tariff certainty/cost shocks	Unforeseen economic events (eg changes in taxation and energy prices) less likely to produce large adjustments in Year 1 of next price control.		Greater certainty over longer period reduces weighted average cost of capital (though diminished by revenue control replacing price cap).
Planning			Seen by many as being more in line with longer-term focus.

Our preferred option continues an approach that was judged to be consistent with our objectives at PR14, and which ultimately focused on fulfilling our duties through our strategic vision to build and maintain trust and confidence. We have set out an approach on outcomes and customer engagement to promote a longer-term approach and will continue to work ensure that methodology supports longer-term working in the sector. Since it continues our existing approach, the option does not raise any legal, regulatory or resource-related issues and therefore remains practical and implementable.

7.5.1 Our impact assessment conclusion

Having considered the impacts of the different policy options, our judgement is that retaining a five-year price control period for network plus represents the optimal balance between the threats and opportunities, taking account of the risks and uncertainties involved.

7.6 Summary of our decisions

We confirm our decisions to target regulation for networks as follows.

- We will keep **total revenue controls** as the form of control for the water and wastewater network plus price controls.
- We will keep **five-year controls** for the water and wastewater network plus price controls.
- We will **set controls at the same time** for all wholesale areas.

8. Implementing our decisions: licensing and next steps

8.1 Our decisions

- In order to implement some of our policy decisions we need companies to agree to modifications to their licences.
- We are seeking licence modifications to index revenues by the Consumer Price Index (CPI or CPIH) instead of the Retail Price Index (RPI), set separate controls for water resources and sludge (which is becoming recognised as a bioresource and we use this term in place of sludge), allow in-period adjustments to revenue for outcome delivery incentive (ODI) rewards and penalties and establish market information databases.
- We propose building on the positive and constructive approach taken by companies in developing the regulatory framework by seeking to work closely with those that support our proposed policy package to develop the licence modifications. Regardless of company involvement in developing the licence modification we will consult all companies on the draft licence modifications before seeking their agreement for changes.
- To be involved in the development of licence modifications, companies would need to indicate support for all the licence modifications we seek and key methodology decisions as set out in Table 3.
- If a company was initially supportive of the package but no longer felt able to support it, we would not expect to continue working closely with it to develop the licence modifications.
- We also intend to seek a licence modification in relation to undue preference and undue discrimination in the provision of services. This modification is required as a consequence of the Water Act 2014; it is not directly related to our work for the 2019 price review (PR19). For this reason, it does not form part of the package of changes for which we seek company overall support.

8.2 Modifications to the licence

In our December consultation, we explained that some of the proposed reforms would require significant changes to the regulatory framework, including modifications to the existing licences. In particular, it would mean modifications to licence condition B, which governs the price-setting framework. We said:

- we recognised the significance of modifications to the licence and the regulatory, legal and financial implications of, and proposed working with all stakeholders to ensure there is a clear understanding of what modifications need to be made; and
- where possible, we wanted to work collaboratively and would expect companies to use all reasonable endeavours to work with us to help deliver the necessary modifications.

Our experience is that licence modifications can be, and have been, achieved in good time through collaboration with water companies. But we recognise some licence modifications have greater significance to companies and investors. Drawing on learning from earlier licence modifications, we have first developed our policy framework to identify the scope and nature of the licence changes required to achieve it, and to ensure that the aims and objectives of those changes are clear.

In this section, we summarise what the decisions in this document mean for the scope of licence modifications, how we intend to take this work forward now there is a clear understanding of what modifications need to be made and some of the key principles and relevant policy issues to be considered.

The licence modifications proposed in this document are only one area of work where modifications are being proposed.

- We are currently working to implement the new water supply and sewerage licensing regime introduced by the Water Act 2014. This includes delivering retail market opening for businesses, charities and public sector organisations that are customers of water companies whose areas are wholly or mainly in England. Some of this work requires modifications to licences.
- We have committed to reviewing the licences in the round to consider how they could be streamlined and simplified.
- We anticipate ‘business as usual’ modifications, for example, modifications due to mergers.

There are also other modifications in the Water 2020 work programme not specifically covered by this document. These relate to current price control periods:

- a modification to ensure companies can make up previous revenue under recovery in line with the wholesale revenue forecast incentive mechanism (WRFIM) – we have offered companies the option of amending condition B;
- potential consequential modifications to licences to reflect proposed charging rules relating to infrastructure charges (see [‘New connections charging –](#)

[emerging thinking for discussion](#) March 2016), which would mainly affect licence condition C (Infrastructure Charges); and

- modifications to some company licences relating to the interim determination process in condition B and how it works when price controls end at different times (as with our current non-household price controls). Explained in 'Setting price controls for 2015-20 Final price control determination notice: policy chapter A6 – non-household retail costs and revenues' December 2014.

In proposing modifications, we will be clear about the reasons for them and, where appropriate, how they relate to our wider licence work. But we are mindful of the deadlines associated with some of these modifications and the potential benefits for stakeholders of maintaining separate discussions on them. We do not propose combining modifications from other work streams with those required to deliver the Water 2020 policy set out in this document.

8.2.1 Licence modifications required to implement policy decisions in this document

Building on experience from previous licence modification processes ahead of PR14, we are committed to modifying licences to implement the policy framework for PR19 in good time. This will ensure we have sufficient time to prepare our PR19 methodology for consultation in July 2017.

Table 15 summarises our policy decisions, the implementation of which requires modifications to company licences. Our decisions set out our future regulatory approach for PR19 and beyond, building on the successes of PR14.

Table 15: Summary of proposed Water 2020 reform that require licence modifications

Area	Our view on modifications for the licence (Instrument of Appointment) in December
Water resources reforms	A separate binding price control for water resources requires a modification to the current wholesale control, as set out in licence condition B for WaSCs and WoCs.
Sludge/bioresources reforms	A separate binding price control for bioresources requires a modification to the current wholesale control, as set out in licence condition B for WaSCs.
Water and wastewater network plus controls	Separate binding price controls for water and wastewater network plus controls requires a modification to the current wholesale control, as set out in licence condition B for WaSCs and WoCs.
Changes to the index applied to price limits	Changing revenue indexation to CPI/H requires a licence modification. The RCV and RCV indexation are not included in the licence. The RCV and its indexation will continue to be underpinned by the price review methodology and consequently do not require a licence modification.
Information remedies to support bioresources and water resource markets	To enable and incentivise the development and operation of markets in bioresources and water resources, we propose requirements on companies to provide and share market information. We think a new licence condition is needed to reflect these new arrangements.
Allow revenue to be adjusted between price reviews to account for ODI rewards and penalties.	To support more targeted incentives through in-period adjustments to revenue, a modification to licence condition B is required. This will only cover ODI rewards and penalties and potentially debt indexation.

The proposed licence modifications constitute a package with clear interactions in terms of both practical operation and delivering policy objectives. For example, it is necessary to understand how the revenue for separate binding wholesale price controls might be indexed for inflation and adjusted, in period, to reflect rewards and penalties associated with ODIs when considering the operation of the separate controls. Equally, information remedies complement separate price controls by addressing barriers to the effective and efficient operation of water resource and bioresources activities.

8.2.2 Introducing a licence modification in relation to undue preference and undue discrimination in the provision of services

There is one further licence modification that we propose to make alongside the package of measures to implement the policies set out elsewhere in this document. Section 23 of the Water Act 2014 has amended Section 2 of the Water Industry Act 1991 to include a new (secondary) duty for Ofwat (and Ministers) regarding undue

preference and undue discrimination in the provision of services by water supply and sewerage licensees or other water companies. **Licence modifications are likely to be needed in consequence of this new duty**, so that the licence includes relevant requirements for companies not to show undue preference or undue discrimination. This licence modification relates to the Water Act 2014 and is not part of the set of policies that we consulted on in December 2015.

However, it could help support some of our policies on the use of markets in water resources and bioresources. Indeed some stakeholders' consultation responses identified the role that duties on companies for no undue preference could play in the development of water resource markets. Therefore we plan to take forward work on the development of a licence modification relating to the changes made by Section 23 of the Water Act 2014 as part of our overall process for licence modifications relating to Water 2020, but we consider this to be distinct from the package of change set out in the table above. We will engage with industry on this and any modification would be subject to formal consultation. This modification could be implemented using our powers under Section 55 of the Water Act 2014, but our preference is to work with companies to agree the modification in the first instance.

8.2.3 Implications of our decision on allowing in period adjustments to price controls and direct procurement for customers

In the December document, we suggested introducing a licence modification to allow revenue adjustments for a range of tools and incentives to be made in-period (currently reconciled every five years in the price review). We noted the benefits of in-period adjustments relating to ODI rewards and penalties, where three companies (Anglian Water, South West Water and Severn Trent Water) agreed to such a licence modification as part of the PR14 price review.

We discuss in-period adjustments for ODI rewards and penalties in Chapter 2. Respondents generally supported the use of in-period adjustments for ODIs, so we intend proposing a licence modification to allow all companies to have them.

Respondents' views on in-period adjustments in other areas, such as cost sharing and revenues, were mixed. There was support for the concept of in-period adjustments and the potential sharpening of incentives this may bring. Concerns related to customer legitimacy and potential effects on investment programme decision making. Respondents also said the potential impacts on bill profiles of any in-period adjustments would need careful thought. The importance of this might grow if more tools were covered through in period adjustments.

Although we still see the merit of wider in-period adjustments, we have decided we will only seek a licence modification in relation to ODI rewards and penalties. However, we wish to keep open the option of an in-period adjustment for debt indexation.

As confirmed in Section 6.5 of our December consultation, we are carrying out a wider review of our approach to setting the cost of debt. This follows the National Audit Office's (NAO's) report, '[The economic regulation of the water sector](#)' (2015), which drew attention to the fact that our approach to setting the cost of debt at PR09 allocated to companies and their investors the risk associated with differences in out turn financing costs from those we had included in our PR09 settlement. The NAO estimated that had we allocated this risk to customers, the fact that out turn costs were lower would have meant bills would have been lower by £840 million over the period 2010-15.

We are examining the overall approach to setting the cost of debt, including whether it is appropriate to use some form of debt tracker or share under and out-performance. While a pass-through mechanism for debt could be implemented through an end of period reconciliation process, an in-period adjustment for changes in the debt indexation is also an option. We will consult on these issues and set out our proposals, including whether an in-period adjustment for cost of debt is desirable, later this year. To avoid doubt, Ofwat has not yet considered these issues and reference to the potential scope for change in no way pre-empts policy consideration of these important issues.

In Chapter 6, we explained we do not think any licence modification is needed for all companies for PR19 to implement our proposals for direct procurement for customers. However, we said we are open to exploring the possibility of licence modification to support discrete projects if proposed by individual water companies. We did this in PR14, making licence changes for in-period adjustments for ODI rewards and penalties at the request of three companies and a separate price control for Thames Tideway expenditure by Thames Water.

8.3 Designing the licence modifications

At this stage we are only proposing licence modifications for the water companies for whom we set price controls at PR14. This means that we are not currently proposing any licence modifications for new appointees.

We are committed to working with companies to deliver the required licence modifications. We recognise the benefit to companies of early sight of how the

modifications might work. Equally, we recognise that an understanding of the policy behind the licence modifications helps to provide certainty and confidence about the impact of those modifications. Table 16 below summarises the policies set out in this document that are relevant to each licence modification, split between:

- policy decisions to be reflected in the licence;
- policy decisions relating to price-setting methodology but relevant to the licence modifications; and
- design issues to be considered in making the licence modification.

By setting these out now, we are being transparent with all stakeholders. How we draft licence modifications is not finalised and we are open to proposals about how we could design them to deliver our policy decisions.

We discuss our approach to engaging on licence modifications and next steps later in this chapter. As part of our engagement approach, we are first seeking company support of the modifications package in principle by 6 July 2016, before working closely with these companies to develop the modifications. We see this approach as building on the positive and constructive engagement of the past 12 months to deliver detailed licence proposals that can form the basis of consultation with all companies. We would also welcome any proposals or related issues we could consider and discuss more widely by that date.

Table 16: Design proposals relevant to licence modifications

Area	Confirmed policy to be reflected in the licence	Confirmed relevant policy	Design issues to consider
Water resources reforms	A separate binding price control for water resources activities in the 2019 price review. A licence that is not unduly prescriptive of the design of the water resource control.	Five year total revenue controls for water resources with an explicit in-period adjustment mechanism to account for bilateral market entry. Allocate part of the pre-2020 legacy water RCV between water resources and water network plus on unfocused basis , with each company developing and justifying appropriate allocation, subject to our review. There will be no general requirement that the unfocused allocation is based on modern	We see merit in designating activities to each new control in the same broad way as the licence does now between wholesale and retail. But we seek views on the effectiveness of this approach and any potential alternative approaches. Whether the level of prescription for water resources control could be designed in the same way as retail controls. Whether to explicitly limit duration of controls.

Area	Confirmed policy to be reflected in the licence	Confirmed relevant policy	Design issues to consider
		<p>equivalent asset value (MEAV) estimates.</p> <p>Our price control framework for PR19 will provide the same nature and degree of regulatory protection as at present for the RCV allocated to water resources at 31 March 2020.</p> <p>Water company investment (or the part of total expenditure not funded through pay as you go in water resources from 1 April 2020 onwards would not have the same degree of regulatory protection. It would be incurred at risk. There will be some explicit utilisation risk for new water resource capacity from 1 April 2020 onwards.</p>	
Sludge/bioresources reforms	<p>A separate binding price control for bioresources activities in the 2019 price review.</p> <p>A licence that is not unduly prescriptive of the design of bioresources control.</p>	<p>Allocate wastewater RCV to wastewater network plus and bioresources on focused basis.</p> <p>Average revenue control for bioresources set by assessing the efficient costs of providing the bioresources service using a building-block approach based on totex with RCV run-off plus a return on RCV.</p> <p>A five-year price control set at PR19 at a company level rather than at a site level.</p> <p>We will retain the bioresources system operator functions within the incumbent companies.</p> <p>We will not introduce bioresources trading incentives at PR19.</p>	<p>We see merit in designating activities to each new control in the same broad way as the licence does now between wholesale and retail. But we seek views on the effectiveness of this approach and any potential alternative approaches.</p> <p>Whether level of prescription for bioresources control could be designed in the same way as retail controls.</p> <p>Whether to explicitly limit duration of controls.</p>
Water and wastewater network plus controls	<p>Five year total revenue controls as the form of control for the water and wastewater network plus price controls.</p>		<p>Inclusion or exclusion of developer services in the network plus control.</p>

Area	Confirmed policy to be reflected in the licence	Confirmed relevant policy	Design issues to consider
Changes to the index applied to price controls	<p>Revenue indexation for all wholesale water network plus, wastewater network plus and bioresources controls to be inflated by CPI/H from 1 April 2020.</p> <p>Wholesale price controls to be inflated by RPI until 31 March 2020.</p> <p>Final decision on choice of CPI/H by the Final methodology statement in 2017.</p>	<p>Transition RCV indexation to CPI/H. 50% of the RCV will be indexed to RPI as at 1 April 2020. The rest, including all new investment will be linked to CPI/H and so the proportion of RCV that is indexed to CPI/H will increase through 2020-25.</p> <p>We will state a single nominal cost of capital – stated separately as real CPI/H-based and real RPI-based costs of capital – for the purposes of setting price limits.</p> <p>We will reconcile for the difference between the RPI and CPI/H forecast for setting price limits and the actual out-turn for RPI-linked cost of capital that applies to the RPI-linked part of the RCV. Together with a nominal cost of capital this will mean the change to indexation will be net present value (NPV)-neutral for a notionally efficient company.</p> <p>We set out the principles we will apply in considering the transition of the RCV beyond 2025 to provide clarity and predictability about our approach to indexation of the RCV beyond 2025.</p> <p>We confirm that to the extent we use similar cost assessment models to PR14 at PR19, we will deflate the base cost data using the same measure of inflation we will apply for revenues.</p>	<p>Whether the change should apply to all references to RPI in the licence (elsewhere in conditions B, C, K and L) and what the implications would be.</p>
Information remedies to support bioresources and water resource markets	<p>A specific licence modification to ensure information is provided and shared in relation to water resources</p>	<p>An information remedy to support water resources - requiring incumbent participation and allowing reasonable use of information.</p>	<p>We propose a licence change that requires companies to provide and share information in a standard way.</p> <p>Detailed specification of the information to be collected</p>

Area	Confirmed policy to be reflected in the licence	Confirmed relevant policy	Design issues to consider
	and to bioresources.	For bioresources, initially we envisage specifying that information is shared on companies' websites.	and how it is shared, would be set out in supporting guidelines. We want to ensure our approach is reasonable and proportionate and assess the scope to deliver a targeted modification.
Allow adjustments to revenue between price reviews	Modification to facilitate use of in period adjustments to revenue to reflect ODI rewards and penalties .		We propose, as a starting point, the licence modification accepted by three companies at PR14 to allow revenue adjustments in period for some ODIs. But we are open to other possible approaches, including a specific adjustment factor to amend the revenues that would directly interact with the design of the form of the separate controls. We see advantages in excluding detailed design and process issues (such as whether there is a need for a cap on annual bill changes) from the licence.

In making licence modifications, we will focus on delivering proposals that are consistent with the stated policy objectives in Table 2 above. While the precise nature of each modification will vary, our starting point is that we seek modifications to the licence that are consistent with a streamlined approach and that contain the same drafting for all companies.

We want to retain the clear distinction between detailed policy that form part of the price setting methodology for the price review and policy related to the framework for price reviews within the licence.

Many of the policy decisions in this document provide companies with increased certainty about aspects of our price review methodology for PR19, but would not be appropriate to be include in the licence as they are not related to the framework for price reviews. Table 2 above sets out where we consider this distinction lies.

In order to deliver the benefits associated with our policy decisions, we need to provide clarity and certainty while at the same time avoiding excessive prescription

and inflexibility in form of licence change. We have explained in this document, the reasons why the form of licence change for bioresources and water resource controls should avoid detailed prescription around the form of control to reflect the evolving nature of these businesses. For the water and wastewater network plus controls, we intend to maintain the same level of detail and prescription in the licence as there currently is for the current wholesale water and wastewater controls.

8.4 Our approach to engagement on licence modifications

We want to work with companies to deliver the licence modifications and to build on positive and constructive approach of companies over the last 12 months which we have hugely valued. Consistent with this we propose:

- working with companies that support the overall package of modifications, to develop the relevant policy into a proposed licence modification; and
- then engaging with all companies on the specific wording of the licence modifications, including formal consultation as required under Section 13 of the Water Industry Act 1991.

We see strong benefits in taking a two stage approach to delivering licence modifications. Early involvement of companies will bring insight into the practicalities of the licence, ensuring that what we propose is practicable and the most effective means of delivering policy proposals. Equally, working with companies that support the overall package will keep the focus on delivering effective licence modifications and avoid a process where the development of the licence modifications is considered an opportunity to revisit the policy, which we reached on the basis of a separate, open and transparent process of consultation.

8.4.1 Our expectations of companies that wish to work with us to develop licence modifications

In order for a company to be involved in developing the licence modifications, we would expect it to indicate:

- support for the package of proposals and approach set out in Table 17; and
- willingness to contribute to a positive and constructive process.

Indicating support for the overall package does not affect a company's ability to accept or decline any formal licence modification proposed under Section 13 of the Water Industry Act 1991. Nor does it imply that a company cannot question the form

and detail of the licence drafting. We value the contribution of companies in delivering effective licence modifications.

Table 17: Policy assumptions behind ‘broad support’

Licence modification³³	Broad support for policy decisions in relation to	Collaborative constructive discussion in relation to
Introduce water resource/bioresources and water/wastewater network plus price controls	<p>The price control methodology will allocate:</p> <ul style="list-style-type: none"> • water RCV between water resources and water network plus on an unfocused basis; and • wastewater RCV to wastewater network plus and bioresources on a focused basis. 	<p>The extent of any prescription in the licence for the form of the water resource and bioresources control design.</p> <p>Regulatory remuneration of incremental water resource capacity from 1 April 2020 onwards: form of allocation of capacity utilisation risk between companies and consumers.</p> <p>Whether to include or exclude developer services from the network plus controls.</p>
Indexation of revenues by CPI/H instead of RPI	<p>The price control methodology will include transition of the RCV indexation to CPI/H. 50% of the RCV will be indexed to RPI as at 1 April 2020. The rest, including all new investment, will be linked to CPI/H and so the proportion of RCV that is indexed to CPI/H will increase through 2020-25.</p> <p>The licence modification will allow Ofwat to confirm the final choice between CPI or CPIH in the methodology for PR19.</p>	<p>Implementing the commitment to NPV neutrality for the change to CPI/H indexation.</p> <p>Interpretation of principles to guide Ofwat’s decision making on the approach beyond 2025.</p>
Water resource and bioresources information remedies	<p>Licence modification to ensure information is provided and shared in relation to water resources and bioresources, detailed specification of data required would remain outside of the licence.</p>	<p>The specific information requirements and the process by which the information is shared/published.</p>

³³ To avoid doubt, our proposal to seek a licence modification in relation to undue preference and undue discrimination in the provision of services does not form part of this package.

Licence modification ³³	Broad support for policy decisions in relation to	Collaborative constructive discussion in relation to
Allow adjustments to revenue between price reviews	The licence modification will allow revenue to be adjusted in period for ODI rewards and penalties.	The broad design of the licence modification. Specific design and process policy issues to support the licence modification (eg process for determining annual adjustments).

We are committed to delivering the required licence modifications ahead of the price review methodology (which we will consult on in 2017). This means we will need to work intensively, with those companies who indicate support for the package, to deliver a set of licence modifications in good time. We will expect to work to the following timetable with companies who indicate support for the package.

- **Companies that wish to be involved in this process confirm in writing by 6 July 2016.** We propose publishing the names of those that accept the package and are engaged in discussing licence changes with Ofwat shortly after the acceptance date.
- **Initial meeting of companies involved in developing licence modifications mid July** to map out and agree detailed programme of work and proposed ways of working such as representative working groups.
- **Collaborative working on licence modifications July to September.**
- **Full set of draft licence modifications produced by 30 September.**
- **Wider engagement on licence changes to deliver a package of licence mods for wider consultation, including formal consultation by 31 October.**

Company involvement in this first stage of the process is not set in stone and it is possible that companies may move out of the group working with us.

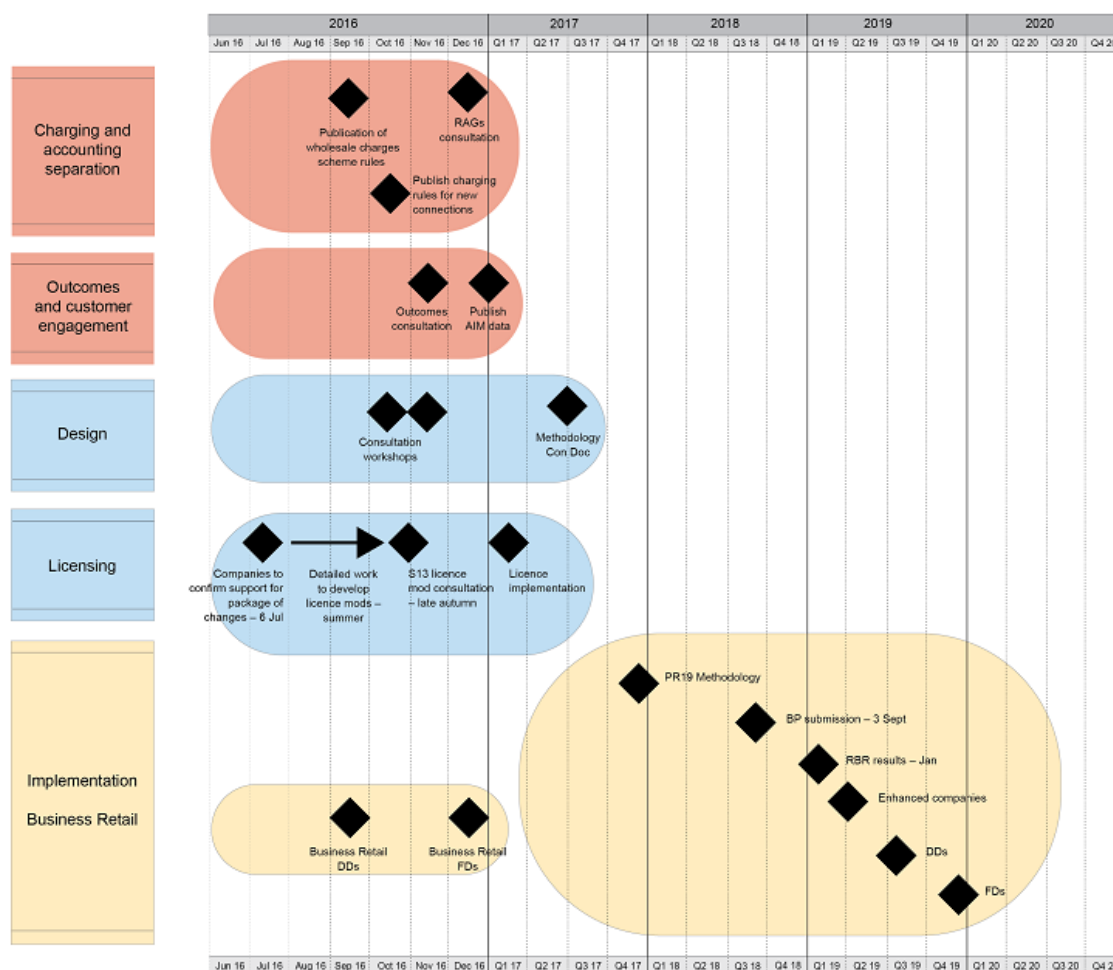
Should a company's management become aware at any point that it is no longer able to agree to the package it should inform us as soon as possible and withdraw from the process. If any company shows by its statements or actions that it is not in agreement with the policy package or the need to work constructively with us on the licence modifications, we may ask it to leave the group.

Regardless of each company's involvement in developing the licence modifications, we will consult all companies on the draft licence modifications before seeking their agreement for changes.

8.5 Context for making licence modifications

Delivering licence modifications is an important next step in the wider preparation for PR19. Figure 16 below sets this out in the context of the wider timetable for delivery through to the next price review in 2019.

Figure 16: Getting to final determinations at PR19



9. Summary of our consultation questions

9.1 Overview

We want to build on the positive and constructive stakeholder engagement over the last year which we have valued considerably, and to continue to work with all interested stakeholders. In particular, we invite those stakeholders who have capacity to contribute to policy development on either sludge or water resources to join working groups. We will publish details of the work of these groups on our website. We will also hold workshops on these and other areas as required.

We have raised a number of consultation questions that will help to inform and implement the approach we have set out. We have listed these below for ease of reference.

We expect to have an ongoing conversation on many of these questions, particularly through the working groups and workshops. We also welcome written responses to these questions by close of business on **20 July 2016**.

You can email your responses to water2020@ofwat.gsi.gov.uk. You can submit your responses by post to:

Water 2020
Ofwat
21 Bloomsbury Street
London WC1B 3HF

We intend to publish all written responses that we receive on our website by the autumn.

If you would like the information you have provided to be treated as confidential, please be aware that, under the Freedom of Information Act 2000, there is a statutory 'Code of Practice' with which public authorities must comply and which deals, among other things, with obligations of confidence.

In light of this, it would be helpful if you could explain why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that we can maintain confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, in itself, be regarded as binding on us.

Information provided, including personal information, may be published or disclosed in accordance with access to information legislation – primarily the Freedom of Information Act 2000, the Data Protection Act 1988 and the Environment Information Regulations 2004.

At a minimum, we would expect to publish the name of all organisations that provide a written response, even where there are legitimate reasons that the contents of those written responses remain confidential.

We will use these written responses to contribute to the development of our policy. With the exception of the area of outcomes, we will next provide a written consultation for the methodology for PR19 in 2017. We expect that, by this time, the ongoing sector conversation on Water 2020 will have progressed and we do not anticipate providing a formal response on the written input we receive.

9.2 Focusing on current and future customers

Consultation questions: outcomes

Q1 What are your views on our preferred approach to long-term commitments?

9.3 Moving beyond waste

Consultation questions: price control for sludge

Q1 Do you agree that sludge holding tanks with only passive thickening should be network plus assets?

Q2 a) Do you agree that sludge liquor treatment costs should be charged on the basis of a modified Mogden formula which includes a factor for ammonia concentration?

Q2 b) Do you agree that these liquor treatment charges should be calculated on a company average basis, as they are currently for trade effluent charges?

Q3 Do you agree that tonnes of dry solids should be used as the units on which to set the average revenue control for sludge?

9.4 Tackling water scarcity

Consultation questions: risk in post-2020 water resource investment

Q1 On our judgement, demand and utilisation risks relating to bilateral market entry should be allocated to incumbent water companies rather than customers, subject to our policy to protect the pre-2020 RCV. Do you agree that the water resources price control framework should differentiate between utilisation risks relating to market-wide demand and utilisation risk relating to bilateral market entry?

Q2 Do you agree that the price control arrangements for increases in water resources capacity should, at least in some circumstances, expose an incumbent water company to some degree of market-wide demand risk? If so, what circumstances?

9.5 Targeting regulation for networks

Consultation questions: network plus scope of control

Q1 Which of the options described in Section 7.3.5 (and/or which other options) should be used to treat developer services in the network plus total revenues? Please explain your reasoning. Please identify which services you think should fall within the generic term 'developer services' in the context of your answer.

Q2 Are there any other wholesale activities that should be excluded from the scope of the network plus price controls? If so, what are they and what problems would be resolved by excluding them?

Q3 Are there any costs that require clarification as to whether or not they should fall within the network plus price controls?

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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