

# **Water 2020: Regulatory framework for wholesale markets and the 2019 price review**

## **Appendix 6: Draft impact assessment**

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## Introduction

In our [main consultation](#) and relevant accompanying appendices, we have set out the underlying rationale and evidence for the regulatory reforms we are proposing to make. This appendix summarises the initial draft impact assessment of our proposed changes and should be read in conjunction with the main consultation.

The broader case for reforms of this nature has already been established and was the basis for the [Cave review](#), subsequent [Water White Paper](#); and the [Water Act 2014](#). Consistent with these, it is clear that in order to meet the external pressures from climate change, population growth and water scarcity in an affordable way, reform of the current regulatory framework is essential.

In January of this year, we launched our strategy, [Trust in water](#), which set out a vision for building trust and confidence in the water sector to address the challenges we collectively face. In September of this year, we published our [five-year strategic plan](#), which described how we would deliver our strategy. A key part of this was moving to a regulatory model that was:

- framework based;
- targeted;
- proportionate;
- customer focused; and
- pro-market.

Accordingly, the specific proposals we have put out for consultation describe how we intend to implement this strategy in practice at the 2019 price review (PR19). They have been designed to help meet our objectives in a targeted, proportional and practical way. We should also highlight the fact that, **in developing our proposals, we have been mindful of the potential impacts on financing costs** (and the implications of these for customers). Finance costs were highlighted in the [Cave Review](#), as being potentially the most material cost category associated with regulatory reform in the water sector. However, the Cave report also indicated that, whether there was any impact on financing costs, and the extent of any such impact, was highly contingent on the precise nature of the reforms being proposed. We have addressed this issue by ensuring that:

- **our reforms will only impact on new investment** (investment prior to the year 2020 will be protected); and
- **our use of markets complements rather than replaces the current regulatory approach for most parts of the value chain**, and is focused on the areas where we consider the potential gains are likely to be largest.

Further to the above, and as noted in our main consultation, between now and PR19 **we propose to work with companies and other regulators to trial and develop our proposals**. This should further help ensure that they are targeted, proportionate, and likely to deliver the anticipated benefits.

**This appendix contains our initial draft impact assessment** for the proposals outlined in the main consultation and accompanying appendices. We intend to build on this impact assessment over the coming months. We will **publish an updated assessment alongside our Water 2020 decision**, reflecting our final policy position, stakeholder views and further evidence.

The **views of stakeholders is a very important part of this process and will help us to develop a robust evidence base and quantitative assessment**. Therefore, we would encourage you to provide your views and any evidence that you may have or collect on the impacts. Specific consultation questions relating to this draft impact assessment are set out in the following table.

<b>Consultation questions: approach to our impact assessment</b>
<b>Q1</b> Do you agree with the benefit and cost impact categories we have identified?
<b>Q2</b> Are there any impact categories you think we have not included that are relevant, or any we have included that should be omitted?
<b>Q3</b> What are your views on the indicative scale of the impacts we have identified?
<b>Q4</b> Are you able to provide any evidence on any of the impacts in relation to our proposals?

## Our approach

The scope of this impact assessment is focused on an assessment of the impacts of our **preferred options**, relative to a counterfactual of the status quo (see below). In identifying our preferred proposals in the first instance, we considered a range of potential policy options (as described in the main consultation and supporting appendices). These were assessed against our Water 2020 criteria.

### Counterfactual/base case

Our counterfactual case assumes that we continue with the 'status quo' – that is, there is no change from the current regulatory framework (except for those changes we are already committed to, such as introducing non-binding sub-caps for the network plus parts of the upstream value chain). Under this option, costs will still be incurred by companies in meeting their obligations, and by Ofwat in carrying out its duties.

This option assumes that the current rate of growth in total expenditure (totex) and regulatory capital value (RCV) continues. The ongoing efficiency gains from comparative regulation and the existing price control approach are assumed to continue, with assumptions based on historical trends.

In the wider regulatory environment, we assume that abstraction reform is introduced during the 2020-25 period and that water resource management planning continues as at present.

In carrying out the impact assessment, we have taken into account relevant policy and guidance issued by government departments, including:

- our own policy on impact assessments<sup>1</sup>;
- HM Treasury's 'Green Book<sup>2</sup>: appraisal and evaluation in central government'; and
- BIS' 'Better Regulation Framework Manual'<sup>3</sup>.

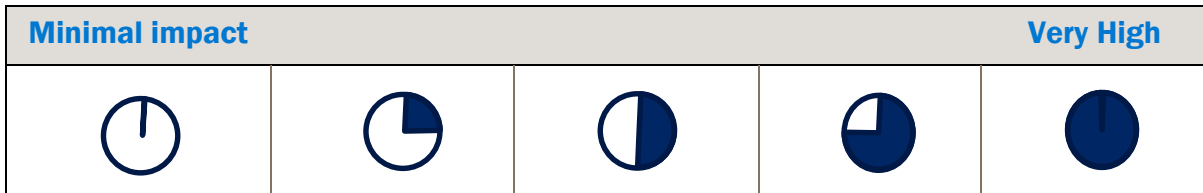
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<sup>1</sup> Ofwat (2011) Ofwat's policy on impact assessments, April 2011.  
[http://www.ofwat.gov.uk/aboutofwat/pap\\_pos\\_2011impact.pdf](http://www.ofwat.gov.uk/aboutofwat/pap_pos_2011impact.pdf)

<sup>2</sup> HM Treasury (2011) The Green Book, Appraisal and Evaluation in Central Government.  
<https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

<sup>3</sup> BIS (2015) Better Regulation Framework Manual. Practical Guidance for UK Government Officials.  
<https://www.gov.uk/government/publications/better-regulation-framework-manual>

**This impact assessment is largely qualitative in nature.** This partly reflects the relatively early stage of our policy development process, where both our policy and evidence base is still evolving. However, in carrying out the qualitative assessment, we have sought to provide sufficient detail. This includes a description and assessment of the likely scale of impacts (which we have depicted pictorially using ‘filled circles’ on a sliding basis, in line with the ‘level 2’ assessment in the Better Regulation Framework Manual) as illustrated below.



**In May, when we publish an updated impact assessment of our finalised position, we will seek to quantify the benefits and costs** where appropriate. This will take into account the differences in how the impacts fall on companies and its customers that are wholly or mainly based in Wales with those that are wholly or mainly based in England. We will also carry out specific impact assessments on competition (through the competition impact test), small and medium-sized enterprises (SMEs), innovation and the environment.

## Types of costs and benefits (impacts) we have considered

We have categorised our impacts into three types: economic, environmental and resilience.

In relation to economic (financial) benefits, **the primary benefits we have identified are those relating to efficiency**, where here we consider allocative, productive and dynamic efficiency savings to be relevant. With regard to costs, the main categories we have considered are those relating to:

- the **costs of implementing** our proposals;
- any incremental **ongoing costs** arising from our proposals; and
- any potential impact on **financing costs**.

As noted previously, these impacts are assessed relative to a counterfactual of the status quo (including any already planned amendments). These same categories of costs and benefits were considered by the Cave review in carrying out its impact assessment on upstream competition – and therefore we consider them a reasonable basis for this initial assessment (although we welcome stakeholder views on this).

## **Who are primarily affected by our proposals?**

In carrying out our impact assessment, we have looked to identify key groups that will be affected by our proposals both in the short and long term.

In the short term, a number of our proposed policies will require companies and Ofwat (and other regulators) to be involved in implementation of our proposed policies. This will be likely to result in additional cost and resource, which will initially impact at the organisation level. However, these costs will ultimately be passed on to customers through their water bills. (It is important to note, that although in the short term costs may increase due to additional regulatory burden, we would expect this impact to be minimal in the medium term as we look to deregulate).

Many of the other efficiency and financing costs and benefits will initially fall on companies (and their investors) but will be passed onto customers in subsequent price controls. For instance, in a number of our proposals we have identified areas that are likely to lead to significant efficiency gains that will benefit companies and their shareholders within a price control period. However, we will take these efficiency gains into account in setting subsequent price controls, ensuring that these savings are passed onto customers.

Our proposals also identify other benefits that will directly impact on customers, or indeed the wider society. These may include those that benefit the environment (for example, through reducing greenhouse gas emissions) or through enhancing the resilience of the network, ensuring that customers are at less risk of interruptions for supply.

## How our proposals meet our objectives

Before setting out our assessment of the impacts of our proposals, in this section we briefly summarise how they meet our wider objectives, as reflected in our Water 2020 principles. This is summarised in the table below.

**Table 1: How our proposals contribute to the Water2020 principles**

Water 2020 principles	Proposals contributing to them
<b>How well it addresses known problems?</b>	
Environmental challenges	<p>Our proposals are designed to improve environmental outcomes relative to the counterfactual.</p> <ul style="list-style-type: none"> <li>• Our sludge treatment, transport and disposal market proposals will reduce carbon impacts through greater production of clean energy, as well as potentially reducing greenhouse gases (GHGs) from transportation (as companies will be encouraged to further optimise their activities across and within their boundaries).</li> <li>• Our water resource proposals should help deliver a more efficient development and use of natural resources, particularly from a wider (out of incumbent supply area) perspective. This should help mitigate environmental stresses associated with water scarcity.</li> </ul>
Developing and maintaining resilience	<p>The market mechanisms in sludge and water resources will deliver greater connectivity and encourage consideration of a wider set of resource options, which should collectively assist resilience.</p> <ul style="list-style-type: none"> <li>• Our sludge treatment, transport and disposal market proposals should allow companies to better plan for future capacity needs and will also ensure existing capacity is used more efficiently.</li> <li>• Our water resource market proposals should enhance connectivity between company borders, making better use of current water resources. It will also allow for new water resource options to connect to the network.</li> </ul> <p>Our proposals on customer engagement and outcomes should enable companies to develop plans to deliver over a long time horizon and encourage companies to consider how they will deliver high levels of performance and resilient services to current and future generations of customers.</p>
Customer bills and affordability	<p>Collectively, and over the medium term, our market proposals should deliver efficiencies (allocative, productive and dynamic) from more efficient investment decisions and better utilisation of assets and resources, which will result in bills that are lower for a given set of outcomes, relative to the counterfactual.</p> <p>In addition, our proposals on customer engagement and outcomes should result in customer priorities being better reflected by companies in their business plans and day-to-day running of their</p>



	businesses, leading to greater allocative efficiency and better value bills for customers.
<b>How well does it achieve our objectives?</b>	
Pro-market	<p>Our market proposals are designed to improve the functioning of markets in relation to:</p> <ul style="list-style-type: none"> <li>• sludge treatment, transport and disposal – by addressing both identified informational and cultural issues; and</li> <li>• water resources (both in terms of trading and bilateral trading) - again predominantly by addressing informational and cultural issues.</li> </ul>
Focused on outcomes	<p>We propose to refine our outcomes approach to incentivise companies to deliver customer priorities by linking rewards and penalties more closely in time with performance. We also propose to encourage companies to focus on longer-term outcomes, develop their plans over a long time horizon and consider how they will deliver high levels of performance that will benefit both current and future generations of water customers.</p> <p>Our proposals to make a greater use of markets in relation to sludge transport, treatment and disposal, and water resources are also intended to help drive a greater focus on outcomes – and to create further incentives to deliver outcomes at lower cost, by revealing additional information regarding the efficient cost of providing services to customers.</p>
Relationship focused	<p>A key element of our proposals is that they are intended to promote a relationship-focused approach. Specifically, on outcomes and customer engagement, we are encouraging companies to:</p> <ul style="list-style-type: none"> <li>• consider customers’ priorities over long-time horizons and develop business plans that will deliver benefits to both current and future water customers;</li> <li>• make better use of the information that they hold as a result of their day-to-day interactions with customers by drawing on it to inform their views on priorities for business planning; and</li> <li>• develop and deliver solutions in conjunction with their customers.</li> </ul>
Uses a broad range of tools	<p>An important feature of our reforms is that they incorporate a wide package of tools, rather than focusing narrowly on traditional regulatory approaches. For example, in relation to both sludge treatment, transport and disposal, and water resources we are combining price control type tools with market mechanisms designed to help reveal information.</p>
Is proportionate and targeted	<p>Our proposals are based on evidence relating to specific issues and problems that need to be addressed. In each case, we have then sought to develop options for addressing these issues.</p> <p>Consequently, our proposals are, by definition, targeted. That is to say, in relation to promoting markets, we are focusing our efforts on two specific areas (sludge treatment, transport and disposal and water resources) rather than the whole of the wholesale value chain. Similarly, the detailed elements of our proposals within these two areas are targeted at the specific underlying issues we are seeking to address. For example, our market reform proposals will impact on new investment (that is, investment prior to the year 2020 will be protected).</p>
<b>Ensuring our approach is practical and implementable</b>	

Resource costs and time to implement the proposals	We have considered the cost and time in delivering our proposals in our assessments of each of the options. We will continue to take this into account as we further develop and refine our options.
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In addition to the Water 2020 principles, it is important to ensure that our policy options meet our statutory duties, as well as reflecting good practice. In the following table, we have provided details on how our preferred options meet these, as well as providing further details on how the policy options will be implemented and which stakeholders they will impact.

**Table 2: Summary of policy**

Summary of policy	
What is the geographic coverage of the policy/option?	To the extent that our market proposals (for sludge treatment, transport and disposal and water resources) can be implemented under the current legal framework, this will be done in England and Wales. Changes that require the implementation of provisions in the Water Act 2014 will only be implemented in relation to the networks of companies whose areas are wholly or mainly in England.  Our future approach to regulation and customer engagement and outcomes and the form of price control will be implemented in England and Wales.
When will the policy be implemented?	Our proposals will be implemented from the start of the next price control, 1 April 2020. This assumes the necessary parts of the Water Act 2014 are implemented. Elements of our proposals, particularly those relating to the mechanisms to support bilateral markets in water resources, may take longer to put in place. We will work closely with Defra to help align our proposed changes with the implementation of the Water Act and development of related market arrangements.
How will the policy be delivered?	The policy will be delivered by the water sector, Ofwat and other regulators, following consultation. Our policy will be developed and refined through consultation and engagement with the sector and stakeholders between now and the publication of our methodology statement in 2017.
How is the proposal consistent with best regulatory practice?	Our proposals seek to deliver pro-market mechanisms only where evidence suggests that there is a benefit from doing so. We have also designed our mechanisms in a targeted and proportionate way, taking into account the current regulatory landscape.  We are also putting more emphasis on long-term outcomes and greater customer engagement. This should incentivise companies to plan over a longer time horizon and deliver outcomes that are important to their customers.
Which stakeholders will feel the impact?	Companies will benefit from: <ul style="list-style-type: none"> <li>• having greater certainty over what they are expected to deliver over a longer planning horizon; and</li> <li>• pro-market mechanisms, which will lead to greater system resilience, greater choice over water resources and sludge treatment and disposal, and reduced transaction costs.</li> </ul>

<b>Summary of policy</b>	
	<p>Companies could, in principle, see an adverse impact on their financing costs. However, the specific instruments we have put in place should materially reduce or mitigate this risk.</p> <p>Customers will benefit from:</p> <ul style="list-style-type: none"> <li>• companies delivering outcomes that are more closely aligned with their priorities, including on long-term issues;</li> <li>• companies increasingly reflecting their views in the running of their business on a day-to-day basis;</li> <li>• better quality of service and increased resilience; and</li> <li>• greater efficiency, leading to lower customer bills.</li> </ul> <p>Investors will benefit from:</p> <ul style="list-style-type: none"> <li>• further protection of historical, efficiently incurred investments included in the RCV up to 31 March 2020. This ensures that no investments made prior to our market reforms will be subject to any change in risk profile.</li> </ul> <p>The environment will benefit from:</p> <ul style="list-style-type: none"> <li>• more efficient development and use of natural resources through the water resource market mechanism; and</li> <li>• reduced greenhouse gases through pro-market mechanisms incentivising innovation of renewable energy generation from sludge and reduced transportation of sludge to Sludge Treatment Centres (STCs).</li> </ul>
<p>How will the proposal further and comply with our duties set out in section 2 of the Water Industry Act 1991 (WIA91)<sup>4</sup>?</p>	<p>We consider that our proposals are consistent with our duties and would help to achieve those objectives. For example:</p> <ul style="list-style-type: none"> <li>• The reforms promote effective competition where appropriate and provide benefits to consumers. We have been mindful of the impact on financing costs in designing our market mechanisms.</li> <li>• These reforms should deliver improved resilience within company operations and the environment, as well as more sustainable solutions, through incentivising companies to think over a longer-term horizon, reducing the impact on the environment and increasing the level of resilience of the network.</li> <li>• The interests of customers and long-term resilience will also be served through improvements made on outcomes to better reflect customer priorities and reflect the longer-term planning horizon.</li> <li>• The reforms should reinforce incentives for companies to properly carry out their functions and promote economy and efficiency by increasing allocative and productive efficiencies, driven by the market mechanisms (water resources and sludge treatment, transport and disposal).</li> </ul> <p>We have also had regard to the principles of best regulatory practice (see above).</p>

<sup>4</sup> Section 2(2A) requires us to exercise our relevant functions in the manner we consider is best calculated to:

<b>Summary of policy</b>	
<p>Does the proposal contribute to or deliver our strategic vision?</p>	<p>Our proposals contribute to our strategic vision of building trust and confidence in water. For example, by:</p> <ul style="list-style-type: none"> <li>• putting more emphasis on companies to engage with their customers to deliver outcomes that meet customer priorities and reflecting customer views in the day-to-day running of their business;</li> <li>• increasing the resilience in companies' water and wastewater services from more integrated networks/operations;</li> <li>• encouraging outcome incentives that apply over the longer term to ensure both current and future generations benefit;</li> <li>• promoting markets to deliver efficiencies, which should benefit customers through lower bills; and</li> <li>• making the market mechanisms narrow and focused, reducing the impact on financing costs to companies.</li> </ul>
<p>Impact on regulatory burdens Data requirement (increase/decrease/net change)</p>	<p>In the short term, the regulatory burden may increase under our proposals through:</p> <ul style="list-style-type: none"> <li>• introducing additional separate price controls;</li> <li>• companies providing further/or more frequent information on water resources/sludge; and</li> <li>• requiring companies to undertake more continuous engagement with stakeholders.</li> </ul> <p>However, we expect to reduce the regulatory burden over the medium term. We envisage that:</p> <ul style="list-style-type: none"> <li>• less regulation is required in the future where we are facilitating markets, in respect of (new) water resources and sludge; and</li> <li>• making better use of market mechanisms within our regulation will enable our regulation to be more proportionate and targeted.</li> </ul> <p>We would further expect to review the scope and nature of our price controls in the middle of the next period, with a view to deregulating further in the review after that.</p> <p>We will look to estimate the change of cost of the regulatory burden in May 2016. We will also consult with other regulators to understand the impact that our proposals will have on their costs.</p>

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- further the consumer objective to protect the interests of consumers, wherever appropriate by promoting effective competition;
  - secure that water undertakers and sewerage undertakers (the companies) and licensed water suppliers properly carry out their activities and functions;
  - secure that the companies can 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.

Section 2(3) sets out some further duties which are subject to the duties in section 2(2A). These include (among other things) exercising our relevant functions in the manner we consider is best calculated to:

- promote economy and efficiency by companies in their work; and
- contribute to the achievement of sustainable development.

We also have a duty to have regard to the principles of best regulatory practice.

## Summary of the costs and benefits (impacts) of our preferred options

This section sets out our high-level assessment of the costs and benefits, **expressed in terms of their expected net impact, of our proposals**. To do this, we have grouped our proposals into five main categories.

- **Sludge market proposals.** Introduction of a set of mechanisms to promote a greater use of markets in relation to sludge treatment, transport and disposal (with potential spill-over impacts into wider waste markets).
- **Water resource market proposals.** Introduction of a set of mechanisms to facilitate greater trading between incumbents and, over the longer term, to facilitate a bilateral market between wholesalers and retailers.
- **Direct procurement for customers.** Incentivising companies to undertake direct procurement on behalf of customers on high value schemes. This will see service providers competing to provide finance as well as construction and potential operation for large projects.
- **Our approach to applying regulation in future.** Including our proposed forms and duration of price controls, in-period revenue adjustments and also our future approach to indexation (our measure of inflation).
- **Customer engagement and outcomes.** We are proposing to make a number of changes, putting a greater emphasis on customers (both current and future). We will encourage companies to genuinely understand and respond to customers' needs and requirements over the longer term, to make better use of the information they hold from their day-to-day interactions with customers and to develop solutions in conjunction with their customers.


The primary reason for assessing the impact of our proposals 'grouped' in to the above categories is that we consider the individual elements to be part of a package. This matters because the specific proposals we have outlined work together to deliver a set of anticipated outcomes. Therefore, particularly in relation to considering benefits, if we attempted to analyse impacts more granularly, there would be some risk of double-counting. In relation to costs, this is somewhat less problematic.




## Summary net impact


The following table summarises our assessment of the net impact of our proposals for each of the main categories listed here. This indicative net impact reflects both economic, and wider, costs and benefits. **In summary, and based on the available information, we expect our proposals to be net beneficial.**

However, we note that there is uncertainties around the potential and significant benefits associated with promoting markets in sludge treatment, transport and disposal, and water resources. These benefits, to some extent, will be dependent on the nature and speed of market development in these areas. In both cases, it is clear that the scope for development also varies by geography. While we will seek to build our evidence further, this uncertainty is an inherent feature of any regulatory reform that seeks to open up markets for the first time. However, we note that there are uncertainties around the potential and significant benefits associated with promoting markets in sludge treatment, transport and disposal, and water resources. These benefits, to some extent, will be dependent on the nature and speed of market development in these areas. In both cases, it is clear that the scope for development also varies by geography. While we will seek to build our evidence further, this uncertainty is an inherent feature of any regulatory reform that seeks to open up markets for the first time.

**Table 3: A summary of key impacts from our proposals**

Element of design	Key expected impacts	Net impact	Size of impact
Sludge market proposals	<p>We expect to see positive and sustained efficiency gains in sludge activities, because of the increased focus on sludge costs (as a result of the separate price control and volume risk driver), innovation and more efficient use of assets, arising from optimisation and trading across company boundaries. This, in turn, should lead to lower customer bills over time.</p> <p>Additionally, there is the potential for wider spill-over benefits developing as a result of interplay with broader waste markets.</p> <p>Relatively modest initial set-up costs arising from the design and implementation of:</p> <ul style="list-style-type: none"> <li>• separate price controls and volume risk driver; and</li> <li>• the information sharing platform.</li> </ul> <p>Ongoing costs primarily related to collecting and providing information into the information platform and the costs associated with having to operate a separate price control. Lastly, there is the potential for a transitional impact on sludge financing costs due to the</p>	Positive	

	<p>uncertainty from introducing markets, although this could be negated where investors anticipate gains from market reform. We would not expect an increase in financing costs to continue over the longer term as expectations of risks would be reset following the introduction of reforms.</p>		
Water resources market proposals	<p>We anticipate that the strengthening of the water trading incentives and greater dissemination of information (through the information database) will result in increased trading across company boundaries, making more efficient use of current assets as well as delayed investment in developing new resources, such as, reservoirs or desalination plants.</p> <p>Further efficiencies should also be delivered through greater management focus, as a result of the separate price control and through the prospect of bilateral trading.</p> <p>An increase in interconnectivity between companies and connection of new resources should enhance network resilience, as well as giving companies greater scope to use alternative resources, which should reduce the level of unsustainable abstraction.</p> <p>The set-up costs with this proposal will be associated with the design and implementation of separate price controls, the information database and the offsetting payment mechanism to support bilateral trading.</p> <p>We anticipate some ongoing costs associated with data provision, ongoing administration of the information database and the offsetting payment mechanism, as well as the added complexity of a separate price control.</p> <p>As we are proposing to protect legacy assets, we do not anticipate any material impact on financing costs.</p>	Positive	
Direct procurement for customers	<p>Greater use of direct procurement on large schemes within the water sector should lead to reduced costs and enhanced innovation due to greater competition among new suppliers.</p> <p>Over time, we anticipate that both companies and Ofwat will be able to use information revealed from this process on financing and construction costs, as well as possible operation costs to target efficiency savings more widely.</p> <p>The main cost to companies will be the development and administration of the tendering process.</p>	Positive	
Customer engagement and outcomes	<p>Improvements to the quality of companies' customer engagement should better align business plans and companies' in-period delivery to customer preferences, driving welfare gains to customers over time.</p> <p>The longer-term focus should result in efficiency, resilience and environmental gains as decision-making is optimised beyond regulatory cycles.</p> <p>Costs are primarily administrative, associated with developing and implementing our proposals. We do</p>	Positive	

	not expect these to be material. Guidance on the remit of CCGs and early information on issues such as WACC should reduce administrative costs compared with PR14.		
Approach to applying regulation (indexation).	We consider that a move from RPI to CPI indexation could provide a better measure of indexation, which is less volatile and more readily understood by customers. We are further explicitly proposing to transition to CPI over time, which should both smooth the short term impact on customer bills and assist companies in implementing the change. We are also proposing to allow companies to use Pay As You Go levers to smooth the impact of a move to CPI over time.	Positive	

In the remainder of this appendix, we provide a more detailed assessment for each area in turn, where we specifically identify and evaluate the relevant costs and benefits, and outline the key evidence and assumptions we have relied upon.



## Market models – sludge transport, treatment and disposal

Our preferred option for the design of the sludge market consists of a number of individual elements. The most material features of our proposals, as described in the main consultation document, are:

- the introduction of an **information platform** (updated on an annual basis) that will hold relevant site level data;
- **guidelines to support non-discrimination**;
- the introduction of a **separate binding price control for sludge** (and correspondingly, therefore, for wastewater network plus); and
- **volume risk for sludge**.

The above proposals are intended to promote the use of markets where evidence suggests there is potential for:


- optimisation of sludge processing and value extraction between WaSCs (within certain geographies where their facilities are sufficiently close for this to be viable); and
- optimisation of sludge processing between WaSCs and wider waste businesses (where here there is both potential for WaSCs to compete in wider waste markets and for firms operating in wider waste markets to compete for sludge related services).

Although sludge represents a small proportion of the value chain, the absolute size of this activity as well as the wider waste market are significant, suggesting that opening up this market further could help deliver efficiencies. In sludge transport and disposal, the MEAV (based on a focused RCV allocation) was estimated at around £3.8<sup>5</sup> billion (2014-15 prices) in the financial year, 2013-14. We also estimate that companies will invest around a further £3.5 billion<sup>6</sup> (2014-15 prices) on sludge treatment, transport and disposal between 2015 and 2020. In addition, in 2013, the wider waste and recycling sector in the UK has an annual turnover of £18.3 billion and a gross value added (GVA) of £5.5 billion.

## Impacts of the preferred option

The table below summarises the **overall expected net impact** of our proposals for promoting markets in relation to sludge treatment, transport and disposal. Following this, a more detailed table (and supporting text) contains the specific benefits and costs we have identified and included in order to reach this overall assessment.

**Table 4: Sludge overall net impact summary**

Preferred design option	Key expected impacts	Net impact	Size of impact
Sludge market proposals	<p>We expect to see positive and sustained efficiency gains in sludge activities, because of the increased focus on sludge costs (as a result of the separate price control and volume risk driver), innovation and more efficient use of assets, arising from optimisation and trading across company boundaries. This, in turn, should lead to lower customer bills over time.</p> <p>Additionally, there is the potential for wider spillover benefits developing as a result of interplay with broader waste markets.</p> <p>Relatively modest initial set-up costs arising from the design and implementation of:</p> <ul style="list-style-type: none"> <li>• separate price controls and volume risk driver; and</li> <li>• the information sharing platform.</li> </ul>	Positive	




<sup>5</sup> The 2013/14 net MEAV is based on the PR09 regulatory approach where depreciation is only included for non-infrastructure assets.







<sup>6</sup> Totex value for sludge treatment, transport and disposal is estimated using the total totex values from company business plans at PR14, apportioned to activities using the historical weighted average totex segment splits.

	<p>Ongoing costs primarily related to collecting and providing information into the information platform and the costs associated with having to operate a separate price control. Lastly, there is the potential for a transitional impact on sludge financing costs due to the uncertainty from introducing markets, although this could be negated where investors anticipate gains from market reform. We would not expect an increase in financing costs to continue over the longer term as expectations of risks would be reset following the introduction of reforms.</p>		
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The following table contains the specific benefits and costs we have identified with respect to our proposals for sludge treatment, transport and disposal. We subsequently provide written descriptions of these impacts and the rationale or evidence we have relied upon.

**Table 5: Summary of expected impact of preferred sludge option compared to current arrangements**

Impact	Who is primarily affected	Size of impact
<b>Economic impacts – benefits</b>		
<p>Our proposals (both the separate price control and information platform) should reveal information that drives efficiency within company boundaries. In particular, WaSCs may be better able to understand how their efficiency varies across their own sites, but also relative to their industry peers – allowing them to optimise their existing operations better. The efficiency gains arising from this would be, in part, passed onto customers.</p>	<p>Companies Customers</p>	
<p>Our proposals should also help facilitate competition between existing WaSCs, and between WaSCs and firms operating in wider waste markets. This should improve allocative efficiency (making better use of existing assets) and dynamic efficiency (taking advantage of changes in technology in the supply of sludge). Over time, as market prices are revealed in certain geographies, we may be able to use these to target efficiency savings more widely.</p>	<p>Customers Companies</p>	
<p>Potential spill-over benefits in wider waste markets (for example, arising from more efficient utilisation of existing assets and / or from use of WaSC assets).</p>	<p>Customers Wider society</p>	
<b>Economic impacts – costs</b>		

Impact	Who is primarily affected	Size of impact
<p>Implementation costs include the initial market setup costs, which are largely the costs of developing the information platform, and designing and implementing the separate price control and introduction of volume risk.</p> <p>We envisage these to be relatively modest, as we anticipate that companies may already hold much of this information for internal management purposes.</p>	Companies Ofwat	
<p>Ongoing costs include the costs of providing, collecting and maintaining information, and additionally, the costs of running the additional price control.</p>	Companies Ofwat	
<p>There is the potential for a transitional impact on sludge financing costs due to the uncertainty from introducing markets although this could be negated where investors anticipate gains from market reform. We would not expect an increase in financing costs to continue over the longer term as expectations of risks would be reset following the introduction of reforms</p>	Investors	
<b>Resilience impacts – benefits</b>		
<p>Decentralisation of sludge activities could improve resilience in the sector as it encourages a broader approach to optimising the use of resources.</p> <p>Additionally, greater availability of information about alternative sludge service providers, and possible markets for back-up sludge treatment services could increase the resilience of the sector to unplanned facility outages.</p>	Companies Customers	
<b>Resilience impacts – costs</b>		
<p>In principle an increase in the number of firms entering the market, depending on their characteristics, could lead to an increase in the scope for firms failing / going into administration. This, in turn, could carry a risk to the resilience of sludge services. The impact is currently uncertain but can be mitigated through licence provisions.</p>	Companies Customers	
<b>Environmental impacts – benefits</b>		
<p>Promoting markets will encourage dynamic efficiency that will increase the speed with which environmentally advantageous technologies are adopted. Potential gains include:</p> <ul style="list-style-type: none"> <li>• reduced greenhouse gas emissions from potential increase in renewable energy generation;</li> <li>• more volume of bio-solids products displacing inorganic fertiliser use in agriculture; and</li> <li>• carbon footprint improvements from more efficient sludge transport (although the net impact of our proposals on this is unclear).</li> </ul>	Wider society	
<b>Environmental impacts – costs</b>		

Impact	Who is primarily affected	Size of impact
We do not consider that there are any environmental costs arising from our proposals (other than potential impact via transportation, where net impact is unclear, as noted above).		○

In the following section we provide further details of the key benefits and costs we have identified above, and the rationale and evidence we have relied upon to size those impacts.

## Economic impacts – benefits

Collectively, our proposals should enable WaSCs to better benchmark the efficiency of their sludge treatment, transport and disposal activities both across their own sites and relative to rival WaSCs. This, in turn, should allow them to better identify where they have inefficiencies and enable our regulation to be more effective, proportionate and targeted. Using this information, **companies should be able to better optimise the running of their existing sludge businesses**, driving efficiencies (ultimately a proportion of which will be passed onto customers). In addition, improved access to (and quality of) information, will allow Ofwat to set more targeted price controls and incentives, which have the potential to drive further cost savings for companies, and ultimately consumers. Importantly, these efficiency gains should occur regardless of the level and speed of market development (that is they do not require competition to occur).

In addition to the above, our proposals should help **foster further optimisation through competition between WaSCs**, which has the potential to drive more material cost savings over time. More specifically, productive efficiency gains in both operating and capital expenditure could be expected, as more efficient firms gain market share for the provision and operation of sludge treatment, transport and disposal assets, from those that are less efficient.

In addition to the cost savings above, the scope for **competition between WaSCs and firms operating in wider waste markets could yield further efficiency gains** – most notably those arising through technological change and innovation for wastewater customers. Here it is important to note that (in relation to both competition between WaSCs and with firms in wider waste markets) the extent of some of the associated benefits is not necessarily limited to the scope for competition itself. For example, as market prices are revealed, we may be able to use these to target efficiency savings more widely.

An important part of our proposal to encourage efficiency gains is the introduction of volume risk of new investment associated with gains and losses of market share for sludge, which should **promote efficiency gains**. We believe that it will sharpen the incentive on appointees to win and retain market share – thereby helping to ensure sludge activities are undertaken by those best placed to do so. It will also strengthen the incentives to design, build, procure and/or operate new sludge assets efficiently as well as further incentivising new innovative ways to undertake sludge activities.

Finally, there is the potential for **spill over economic benefits** outside of the wastewater space. In particular, should WaSC sludge businesses increasingly compete outside the regulated business in organic waste type markets, this could lead to a more efficient development and use of capacity in these markets, benefitting those customers. It is also possible that WaSC sludge businesses may benefit from economies of scale as a result of gaining market share in wider waste services, which in turn could benefit wastewater customers. Although our remit as the economic regulator of the water industry means we are primarily concerned with the welfare of water and wastewater customers, these wider spill over benefits should also be taken into account in our impact assessment.

## **Economic impacts – costs**

The economic costs associated with our preferred option can be categorised into three groups:

- set up or implementation costs;
- ongoing costs; and
- financing costs.

Below, we set out the underlying costs to the industry, namely the companies, and Ofwat.

### **Implementation costs**

**Companies** will bear costs of getting internal systems and processes in place to facilitate the **provision of information requirements for separate price controls and the information platform**. We envisage these to be relatively modest, as we anticipate that companies may already hold much of this information for internal management purposes. Consequently, the impact of our proposals in this regard may primarily relate to adapting existing systems and reporting, rather than the development of entirely new systems. However, we do recognise that in some cases

companies may need to make investments to collect new data and information and would welcome company views on this. There may also be implementation costs to companies associated with the initial application of the new binding price control, introduction of volume risk and licence changes. Further work may be required to better understand the impacts associated with this. Under our proposals, **work would also have to be undertaken to improve and update estimates of the modern equivalent value of sludge assets**, which could be more material.

**Implementation (or one-off) costs facing Ofwat** – we anticipate that in the first instance implementation costs are likely to be low. Costs associated with introducing a separate price control and the introduction of volume risk are primarily limited to the costs of developing relevant policy. There may also be costs associated with the development and implementation of information sharing (the information platform) although the extent of these will depend on the precise design of how this information is collated and disseminated. We note that, unlike in retail, there is no market operator as such required, and therefore the set-up costs should be materially lower. However, again we recognise that further work is necessary, in particular, to understand under what circumstances licences in sludge treatment would be required for third party entrants. This is particularly relevant to special administration powers to ensure that sludge can continue to be safely treated and disposed of in times of insolvency. If these are required, this will impose an additional cost to Ofwat and to any potential sludge service providers.

## **Ongoing costs**

The incremental ongoing costs associated with our proposals would **primarily relate to the costs of collecting and providing information** (which would mainly fall on companies); **the costs of maintaining and administering the information platform** itself (which might fall on Ofwat or a third party); and the **costs associated with having to run a separate additional price control** in future (where such costs would fall both on Ofwat and companies) including the **introduction of volume risk**. At this stage, we do not consider these costs to be particularly material, although we welcome stakeholder views on this. In particular, we anticipate that a number of the companies will already need to collect this information as part of their existing practices.

While there might be a **short-term increase in regulatory burden, we envisage that this would reduce relative to current arrangements over the medium term.** In particular, we envisage that less regulation would be required in sludge as a result of introducing markets. In addition, we expect that the market mechanisms will allow our regulation to become more proportionate and targeted. We will look to review the scope and nature of our price controls in the middle of the next period, with a view to further deregulation.

## Financing costs

PwC has considered the impact of our proposals on financing costs<sup>7</sup>. Overall PwC find that the introduction of markets should not increase systematic risks and the cost of capital as losses to one company will be gains to another. Investors would therefore be able to diversify this risk and so there should be no impact on the cost of equity. In the short term, PwC acknowledge that investors could perceive increased risks due to uncertainty over the impact of reforms. Any increase in risks perceived by investors is likely to be small due to our proposed approach to protect the existing RCV and could be negated if investors anticipate gains from market reforms. Over the longer term, we would not expect the cost of capital to increase as expectations are reset.

PwC do not expect the creation of separate binding controls to increase risks and the cost of capital, as losses in one price control could be offset by gains in another. However, the introduction of a price (rather than revenue) control and volume risk in the sludge control could increase risks as companies will be exposed to demand variations that affect the rest of the economy. This is in addition to the market share changes from the introduction of markets discussed above. Any increase in the sludge cost of capital from additional volume risks would be offset as these risks would be spread over a larger capital base due to the use of a focused approach to the allocation of the RCV. Consequently, there would not be an overall increase in the sludge cost of equity, although there may be a small increase in the overall cost of capital from the reduction in capital in the wholesale wastewater control.

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<sup>7</sup> PwC (2015) Balance of risk: Risk and reward across the water and sewerage value chain.



## Resilience impacts – benefits

Decentralising sludge activities could improve resilience in the sector. By encouraging greater use of markets, we anticipate that there will be more companies involved in sludge activities, which will improve resilience in service provision and allow switching away from any non-resilient providers. It will also increase access to other assets. For example, we are aware of a historical operational incident causing a company to request sludge services from its neighbours and a third party. The information platform would reveal site capacity (and other relevant information) of alternative facilities. This would make managing any similar incident in the future, more straightforward and efficient, and hence, improve resilience within the market.

## Resilience impacts – costs

Increasing the role of smaller companies increases the probability, but reduces the impact by occurrence, of company failure/going into administration. This impact can be mitigated through applying special administration arrangements to licenced entrant providers of sludge services, or requiring incumbents to contract in such a way that the special administration arrangements are not necessary for new entrants. The impact of this is currently uncertain, and so further work would be required in this area to ensure resilience costs are mitigated through the licence provisions.

## Environmental impacts – benefits

A more efficient sludge treatment system across England and Wales **may reduce the ‘sludge miles’ travelled by road tankers**, reducing the overall carbon footprint of sludge transport. For example, there may be instances where incumbents are transporting sludge over longer distances within their own supply areas than they would if they traded with rival WaSCs. However, **the overall impact on the carbon footprint is uncertain at this stage**, which could in theory increase if treatment costs and the value of sludge products of sludge treatment centres located further away offsets the additional sludge miles.

Overall we also expect our reforms to **further encourage the re-use of sludge, as companies are better able, and incentivised, to realise its value. This has clear environmental benefits**. For example, as more sludge is utilised for the purpose of generating renewable energy – and as more innovative treatment technologies are used – so in turn, greenhouse gas emissions should be reduced. Furthermore, as

the amount of sludge recycled to agriculture increases, displacing inorganic fertiliser, so does the support for more sustainable food production.

## Main assumptions risks and uncertainties

### Assumptions

- We are assuming that any necessary sewerage elements of the Water Act 2014 are switched on in time for us to be able to fully implement our preferred sludge market design option.
- Our counterfactual position is one where there are stable sludge treatment, transport and recycling conditions, with no changes from the current economic regulatory framework. We could expect incremental ongoing efficiency gains from comparative regulation and the current price control approach. The characteristics of the counterfactual or do nothing approach can be summarised as:
  - sludge is an integral part of the wholesale wastewater price control.
  - sludge production and treatment information, which could provide transparency for potential entrants is not required, collated or published centrally, and so remains opaque.
  - system co-ordination of sludge activities is managed by the incumbent companies in their geographic areas.
  - there are no explicit regulatory incentives designed to encourage sludge trading.
- We assume biosolids recycling to agricultural land will continue to be acceptable to the food supply chain. The environmental regulations surrounding sludge treatment, transport and recycling will continue to support agricultural use.

### Risks and uncertainties

The key risk/uncertainty relates to the extent and speed of market development. This is a key concern because it drives a substantial proportion of the efficiencies and is the key benefit we have identified. However, **this risk has been mitigated through our commitment to work with companies prior to PR19 to further develop and trial the proposals we have set out.**

## Market models – water resources

Our proposed model for the design of the market for water resources includes the following key elements.

- A **separate binding price control** for water resources (and accordingly therefore, for water network plus).
- The introduction of a **mandatory information database** and a process that allows for the **ongoing ‘bidding in’** of new resource options by third parties.
- The potential **strengthening of water trading incentives**.
- The introduction of **access prices** based on our water network plus control.
- An **offsetting payment mechanism** to support the bilateral market, which would address the differential between the higher marginal cost of new water resources and the prevailing, lower, average cost of existing resources (given the proposed separate binding price control).

Our proposals are intended to promote the use of markets, where evidence suggests there is potential for:


- **increased water trading between incumbent WaSCs/WoCs** (in particular, between zones that are in close geographical proximity to each other and where one zone has spare resources and/or a low incremental cost of developing new resources, and the other is subject to water scarcity and/or a high incremental cost of developing new resources); and
- **some competition from non-incumbent third-party businesses** in the development and provision of new water resources. These could include new entrant water companies (for example NAVs, such as Albion Water) or large industrial water users, such as farmers, brewers and power generators. In theory, competition from third parties could also extend to existing water resources, but the scope for this may be limited, given the presence of sunk costs, economies of scale and Ofwat’s commitment to protect existing assets from stranding.

Although similar to sludge, water resources represents a small proportion of the water sector value chain, its actual value and asset characteristics means that markets could deliver significant savings in absolute terms. The MEAV associated with this activity was around £19.3<sup>8</sup> billion (2014-15 prices) in the financial year 2013-14 (assuming an unfocused RCV). We also estimate that the water industry will spend around £2.7 billion<sup>9</sup> (totex, 2014-15 prices) on water resource activities between 2015 and 2020. Water resources are also characterised by assets with long lives and large upfront costs (for instance, the new desalination plant at Beckton is estimated to cost approximately £250 million<sup>10</sup> to build), which suggests that delaying the need for such investments could result in significant savings.

## Impacts of the preferred option

The following table summarises the **overall expected net impact of our proposals for promoting markets in relation to water resources**. Following this, a more detailed table (and supporting text) contains further information regarding the individual benefits and costs we have identified in our assessment.

**Table 6: Water resources overall net impact summary**

Preferred design option	Key expected impacts	Net impact	Size of impact
Water resources market proposals	<p>We anticipate that the strengthening of the water trading incentives and greater dissemination of information (through the information database) will result in increased trading across company boundaries, making more efficient use of current assets as well as delayed investment in developing new resources, such as, reservoirs or desalination plants.</p> <p>Further efficiencies should also be delivered through greater management focus, as a result of the separate price control and through the prospect of bilateral trading.</p> <p>An increase in interconnectivity between companies and connection of new resources should enhance network resilience, as well as giving companies greater scope to use</p>	Positive	

<sup>8</sup> The 2013-14 net MEAV is based on the PR09 regulatory approach where depreciation is only included for non-infrastructure assets.




<sup>9</sup> Totex value for water resources is estimated using the total totex values from company business plans at PR14, apportioned to activities using the historical weighted average totex segment splits.





<sup>10</sup> Thames Water Desalination Plant, London, United Kingdom (no date) water-technology.net (<http://www.water-technology.net/projects/water-desalination/>).




	<p>alternative resources, which should reduce the level of unsustainable abstraction.</p> <p>The set-up costs associated with this proposal include the design and implementation of separate price controls, the information database and the offsetting payment mechanism to support bilateral trading.</p> <p>We anticipate some ongoing costs associated with data provision, ongoing administration of the information database and the offsetting payment mechanism as well as the added complexity of a separate price control.</p> <p>As we are proposing to protect legacy assets, we do not anticipate any material impact on financing costs.</p>		
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The following table contains the specific benefits and costs we have identified with respect to our proposals for water resources. We subsequently provide written descriptions of these impacts and the rationale or evidence we have relied upon.

**Table 7: Summary of expected impact of preferred option compared to current arrangements**

Impact	Who is primarily affected	Size of impact
<b>Economic impacts – benefits</b>		
<p>Separate price controls for water resources will increase transparency and help to reveal efficient costs. This will assist both Ofwat and the regulated companies to identify where additional efficiency gains can be achieved, and sharpen incentives for the delivery of these gains.</p>	<p>Companies Customers</p>	
<p>Measures to increase information transparency for market participants (specifically, the development of a market information database and the facilitation of the ongoing ‘bidding-in’ of resource options from third parties), will reduce barriers to trading water resources. This, combined with a possible strengthening of existing regulatory incentives, will lead to increased water trading, which in turn will yield benefits in terms of productive and allocative efficiency.</p>	<p>Companies Customers</p>	
<p>Over the longer term, there is scope for an expanding bilateral market to emerge in relation to the provision of resource itself. This could lead to gains in dynamic efficiency (for example, due to higher rates of innovation), which will benefit companies and customers in the form of a higher rate of productivity growth over time. In the first instance, the scope for benefits may be limited to non-household customers.</p>	<p>Companies Customers</p>	
<b>Economic impacts – costs</b>		

Impact	Who is primarily affected	Size of impact
<p>Implementing price control separation and the revised access pricing methodology will require companies to collect more detailed data on their costs, for example:</p> <ul style="list-style-type: none"> <li>i. carrying out a full audit of their assets;</li> <li>ii. improving the granularity of accounting separation reporting in relevant business segments; and</li> <li>iii. improving LRIC cost data. Ofwat will also incur costs related to the additional complexity of setting separate controls and the detailed design of access prices.</li> </ul> <p>Other Implementation costs from the pro-market changes include the upfront costs of detailed policy design and development; modifying and/or setting up systems to support the information database, the third-party bid assessment process and the offsetting payments mechanism; and costs associated with licence changes and code development.</p>	<p>Companies Ofwat</p>	
<p>Ongoing costs of administering separate price controls may be slightly higher than under the existing bundled approach due to additional complexity. However, these costs should reduce once new processes are bedded in. The same is true of the proposed new access pricing arrangements.</p> <p>Ongoing costs of other pro-market changes include administrative costs related to information provision for the market database and the bid assessment process for third party options; managing any related codes; and managing the offsetting payments mechanism.</p>	<p>Companies Ofwat</p>	
<p>We do not anticipate there being an impact on financing costs in relation to water resources.</p>	<p>Investors Companies</p>	
<p><b>Resilience impacts – benefits</b></p>		
<p>A more interconnected network would lead to increased system resilience. Although the total amount of water made available through water resource infrastructure at a national level could be reduced if interconnection options are used in place of building new water resources such as reservoirs, under the current system there is no guarantee that:</p> <ul style="list-style-type: none"> <li>i. such surpluses exist; or</li> <li>ii. they can be deployed where they are needed.</li> </ul> <p>Increased inter-connectivity within and between companies also reduces single points of failure and increases flexibility to respond to stress in a way that investment in fixed new resources may not.</p>	<p>Companies Customers</p>	
<p><b>Resilience impacts – costs</b></p>		

Impact	Who is primarily affected	Size of impact
<p>Increasing the role of smaller independent companies in the provision of water resources increases the probability (but reduces the impact by occurrence) of company failure. This impact can be mitigated through requiring special administration arrangements to apply to licenced entrant providers of water resources, or requiring incumbents to contract in such a way that the special administration arrangements are not necessary for new entrants.</p> <p>Increased trading could impact on water quality as a result of the mixing of raw water. Although mixing of raw water can result in a deterioration of water quality, this risk can be addressed in most instances through treatment. In addition mixing of raw water is also used to address certain water quality issues.</p>	<p>Companies Customers</p>	
<p><b>Environmental impacts – benefits</b></p>		
<p>Increased water trading due to pro-market reforms may help to reduce the environmental impact from abstracting water from resources that are already water stressed although we note that this depends on economic and environmental signals being well-aligned which is not always the case, as well as the availability of water across the interconnected region. We will consider what further analysis can be carried out to understand the potential impacts of water trading on water stressed areas.</p>	<p>Wider society</p>	
<p><b>Environmental impacts – costs</b></p>		
<p>There is an environmental risk from increased water trading associated with the possible activation of ‘sleeper’ licences and/or increased abstraction from under-utilised licenses, exacerbating water stress and/or causing deterioration under the Water Framework Directive. The Water Act provides some mitigation against this risk and Ofwat’s proposal for industry codes will provide additional safeguards.</p> <p>There is also the risk that the introduction of more interconnections could result in an impact on the ecology of the receiving water body, where water is transferred between rivers, canals and lakes. However, environmental regulations should provide some mitigation to this risk.</p> <p>We also note that there could be an impact on greenhouse gases from greater transfer of bulk supplies. This could result in additional pumping (and hence electricity usage). However, this is dependent on many factors (for example, electricity source), which makes this impact uncertain.</p>	<p>Wider society</p>	

## Economic impacts – benefits

Increased transparency due to price control separation will enable incumbent companies to benchmark the performance of their water resources activities against their rivals. Using this information, companies will be able to optimise the running of their business, driving efficiencies. Furthermore, improved access to high quality information will allow Ofwat to set better-targeted price controls and sharper incentives (for example, via the efficiency challenge mechanism) in order to drive further cost savings and/or quality improvements by companies. These benefits would be, in part, passed on to end consumers.

In addition to the above, our proposals should help **foster further optimisation through competition between incumbent WaSCs/WoCs**, which has the potential to drive more material cost savings over time. More specifically, productive efficiency gains in both operating and capital expenditure could be expected, as more efficient firms gain market share for the provision and operation of water resources assets from less efficient firms. Ofwat's 2015 analysis of the potential gains from increased interconnection and water trading between incumbents found potential benefits of between £0.7 billion to £1.1 billion net present value (NPV) (in 2012-13 prices over the lifetime of the assets) from the lower cost of water trading options compared with new build options. (We note that some of this potential benefit may be achieved in the absence of our proposed reforms, given the changes already made under PR14 to incentivise additional water trading, this is something we will consider further in developing our quantified impact assessment).

Over the longer term, the development of a **bilateral market could facilitate new entry into the water resources sector from independent third-party businesses, yielding further dynamic efficiency gains** – most notably those arising through technological change and higher rates of innovation in the sector. Although difficult to estimate with precision, evidence from academic research on the impact of introducing competition in other industries suggests these benefits could be important. For example, Wei Li and Lixin Colin Xu (2002)<sup>11</sup>, found that the introduction of competition into telecoms sectors led to substantial increases in total factor productivity, over and above that achieved by privatisation alone while Yan Li

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<sup>11</sup> Wei Li and Lixin Colin Xu (2002) 'The impact of privatisation and competition in the telecommunications sector around the world', The World Bank/Darden Business School Working Paper 02-13, October 2002.



and Catherine Waddams Price (2012)<sup>12</sup> found that competition resulted in a positive and enhanced productivity growth in mobile telephone firms. In the short term, we would expect these benefits to be restricted to non-household customers (although this may change if retail competition is opened up to household customers). However, it is possible that spill over benefits could arise for household customers over the longer term – for example, if new technologies are applied more widely across the value chain.

## **Economic impacts – costs**

The economic costs associated with our preferred option can be categorised into three groups:

- set up or implementation costs;
- ongoing costs; and
- financing costs.

Below, we set out the underlying costs on the industry and Ofwat.

### **Implementation costs**

Companies will bear the costs of getting internal systems and processes in place to facilitate the implementation of separate price controls, new access arrangements and the information database. They will also be responsible for ensuring that processes are in place to support the ongoing ‘bidding in’ and assessment process for third-party resource options. In most cases, we expect that companies will already hold much of the relevant information for internal management purposes, and therefore the focus will be on the adaptation of current systems, as opposed to implementing new ones. However, costs will be higher where companies do not currently collect information to the level of detail required, and consequently, would need to invest in new systems and processes in order to fulfil requirements. For example, to implement price control separation we expect that each company will need to carry out a full audit of its assets and improve the granularity of its accounting separation reporting in the relevant business segments. Similarly, to

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<sup>12</sup> Yan Li and Catherine Waddams Price (2012) Effect of regulatory reform on the efficiency of mobile telecommunications. ESRC Centre for Competition Policy and Norwich Business School, University of East Anglia.

support the proposed approach to access pricing companies will need to improve the quality of their cost data. Changes to systems will also be needed to administer the offsetting payments mechanism we are proposing to support bilateral market.

Companies are also likely to incur implementation costs related to policy development, as they will need to invest time to understand the new requirements and respond to Ofwat's proposals, particularly in novel areas such as the offsetting payments mechanism. Similarly, there will be costs associated with any necessary licence and/or code changes, but we note that further work is required to understand the impacts of this in more detail.

Implementation costs facing Ofwat, which will be passed onto customers, through their water bills, are likely to be relatively modest in the first instance. Predominantly, they will comprise policy development costs associated with price control separation, revised access pricing arrangements, any changes to the existing trading incentives, and the offsetting payment mechanism. Of these, the latter is likely to be the most complex (and therefore costly) to design and implement. Ofwat will also incur costs related to the implementation of the market information database, but the scale of these costs is uncertain at this stage as we have not yet determined the relevant design and institutional arrangements (for example, whether the database will be hosted by Ofwat, by companies, or an independent agency).

## **Ongoing costs**

Ongoing costs of the new arrangements would include the administrative and maintenance costs associated with the mechanisms described above (for example, collecting and providing information in order to comply with the separate price controls, information database requirements, access arrangements, the offsetting payments mechanism and management of any related codes). We expect these to be relatively low in most cases, as again we anticipate companies would currently collect much of the information for internal management purposes. In the case of new policies such as the offsetting payments mechanism, costs will be higher, but should reduce once new processes are bedded in.

In addition to the above, companies can expect to face ongoing costs associated with bid assessments in order to provide transparency of bids they have received from third parties. Where companies already take a comprehensive and transparent approach to bid assessments, we expect the incremental ongoing costs facing companies to be small, but costs could be larger for those companies compelled to alter their processes and management of bid assessments to meet the new requirements. However, further work is required in this area as the full extent of the impact will largely depend on the level of regulatory transparency required for trading activities and what companies must demonstrate to meet 'due' processes required for the assessment of bids from third parties.

Ofwat will also bear ongoing management, compliance and policy costs related to our market design proposals for water resources. We also anticipate ongoing costs associated with operating a market code panel, and additionally, there are potential costs where disputes between incumbents arise, in which Ofwat bears the costs of casework in order to resolve significant conflict.

## **Financing costs**

The impact of our proposals on financing costs has been considered by PwC<sup>13</sup>. The main change from our proposals is the introduction of separate binding controls for water resources. As set out above, PwC does not expect that the creation of separate controls would increase risks and the cost of capital as underperformance in one control could be offset by outperformance in another. This is consistent with the previous splits to create separate wholesale and retail controls in PR14 and the views of the CMA in the Bristol Water appeal.

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<sup>13</sup> PwC (2015) Balance of risk: Risk and reward across the water and sewerage value chain.

## **Resilience impacts – benefits**

We consider that a more interconnected network and greater use of market mechanisms should improve overall resilience in the water resources sector. Encouraging greater use of markets will enable more companies to enter the sector, which will improve resilience in service provision and allow switching away from less resilient providers. In addition, the information database will increase the transparency and availability of data on alternative resources and key facilities.

The level of resilience delivered through interconnectivity will be dependent on water availability in a given interconnected supply region. Although in theory the total amount of water available at a national level could be reduced if interconnection options are used in place of building new water resources such as reservoirs, under the current system there is no guarantee that:

- such surpluses exist; or
- they can be deployed where they are needed.

Increased inter-connectivity within and between companies will also reduce single points of failure and increase flexibility to respond to stress in a way that investment in fixed new resources may not.

## **Resilience impacts – costs**

As the role of independent smaller companies' increases, so does the potential for them to fail and/or go into administration, which consequently poses a potential risk to the resilience of the water resources market. Further work is required by Ofwat to ensure that resilience costs are mitigated through licence provisions, for example by requiring special administration arrangements to apply to licensed entrant providers of water resources. Another option would be to require incumbents to contract in such a way that special administration arrangements are not needed for new entrants.

Increased water trading could have an impact on water quality. This may happen where additional trading results in more diverse supplies, which could lead to mixing of raw water with inherent different chemistries. (Although, in theory, water trading could also lead to lower diversity where a large bulk supply replaces a number of smaller local sources). Examples of water quality problems arising in water include cryptosporidium, pesticides and nitrates. However, most of these concerns can be addressed through treatment or catchment management. In addition, we also understand that the mixing of raw water can also help to deal with certain water quality issues.

### **Environmental impacts – benefits**

The main potential benefit to the environment from our reforms is that increased water trading may help to reduce water stress in areas that are currently subject to water scarcity. This is because water trading gives companies more flexibility over which raw water resources to use, giving them greater scope to reduce the level of unsustainable abstractions, by transporting from alternative supplies.

We note however that this relies heavily on price signals for water trading being well-aligned with environmental impacts, which is often not the case. We will consider what further analysis can be carried out to understand the potential impacts of water trading on water stressed areas. The social value of water will increase significantly once resource becomes over abstracted, due to increased environmental pressures. This will affect the value of potential interconnections.

### **Environmental impacts – costs**

We are proposing to retain a pure revenue cap for water resources to avoid creating a profit incentive to increase throughput of water that might lead to undue, harmful abstraction.

A potential environmental risk from increased water trading is that it could lead to the activation of ‘sleeper’ abstraction licences and/or increased abstraction from under-utilised licenses, exacerbating water stress and/or deterioration under the Water Framework Directive. Currently, a significant proportion of licences remain unused and only 17% of licences have environmental safeguards that would prevent over-exploitation<sup>14</sup>. The Water Act does however provide mitigation against this risk and our code proposals will provide additional safeguards against water over-use.

An additional environmental risk may also arise from the mixing of raw water sources. This could have a detrimental ecological impact within the catchment, where raw water is transferred between rivers, canals and lakes and could also result in the introduction of invasive species. However, there are environmental regulations that are in force, for example the EU Water Framework Directive, which should mitigate the risk of this occurring.

Finally, we note that there could potentially be an impact on greenhouse gases as a result of increased interconnections, which could lead to increased electricity usage from additional pumping. However, this impact is highly uncertain and depends on many factors, such as, the type of energy source, topography over which the water is transported and whether natural transportation systems are used, such as, rivers. In addition, an increase in water trading could also result in reduced transportation distances, for example, where raw water is transported locally over company borders.

## **Main assumptions risks and uncertainties**

### **Assumptions**

We are assuming that any necessary elements of the Water Act 2014 are switched on in time for us to be able to fully implement our preferred water resources market design option.

Our counterfactual position is one where there are stable water resources arrangements, with no changes from the current economic regulatory framework. We

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<sup>14</sup> Environment Agency and Ofwat: The case for change – reforming water abstraction management in England. Report GEH01111BVEQ-E-E.

could expect incremental ongoing efficiency gains from comparative regulation and the current price control approach. The characteristics of the counterfactual or do nothing approach can be summarised as:

- water resources is an integral part of the wholesale water price control;
- water resources and treatment information which could provide transparency for potential entrants is not collated or published centrally, and so remains relatively opaque, although some information is available via companies' WRMPs;
- system coordination of water resources activities is managed by the incumbent companies in their geographic areas; and
- regulatory incentives to encourage water trading are not extended beyond that which was agreed under PR14.

### **Risks and uncertainties**

There is uncertainty regarding the outcome of Defra's abstraction reform process, which could have a significant impact on the future regulatory framework for water resource use and trading. There is also uncertainty around the extent and speed of market development, which drives the potential efficiencies to be delivered.

## Direct procurement for customers

Our approach to direct procurement for customers looks at the how the water sector can make greater use of direct procurement models. We anticipate that under a ‘direct procurement’ framework, the **incumbents would seek bids from third parties to provide the service and finance on schemes that offers the best value to its customers**. We are proposing that companies will develop proposals, as part of their business plans, on how they will be able to make use of ‘direct procurement for customers on large infrastructure projects, with a threshold value of £100 million. We intend to assess companies’ proposals on this as part of our risk-based review.

### Impacts of the preferred option

The table below sets out our assessment of the **overall net impact** of our proposals relating to direct procurement for customers. Following this, a more detailed table contains the specific benefits and costs we have identified, which are described further in the subsequent text.




**Table 8: Approach to applying regulation overall net impact summary**

Preferred design option	Key expected impacts	Net impact	Size of impact
Direct procurement for customers	<p>Greater use of direct procurement on large schemes within the water sector, should lead to reduced costs and enhanced innovation due to greater competition among new suppliers.</p> <p>Over time, we anticipate that both companies and Ofwat will be able to use the information revealed from this process on financing and construction costs as well as possible operation costs to target efficiency savings more widely.</p> <p>The main cost to companies will be the development and administration of the tendering process.</p>	Positive	

The following table contains the specific benefits and costs we have identified with respect to our proposals. We subsequently provide written descriptions of these impacts and the rationale or evidence we have relied upon.



**Table 9: Summary of expected impact of preferred option compared to current arrangements**

Impact	Who is primarily affected	Size of impact
<b>Economic impacts – benefits</b>		
Our proposals should facilitate greater use of direct procurement models within the water sector. This should drive down costs, as a result of service providers competing to supply finance as well as construction costs. This competitive pressure among service providers should also increase the number of innovative solutions brought forward.	Companies/ Customers	
It is anticipated that over time the market information revealed from the direct procurement process can be used to reveal efficient financing and construction costs. This will facilitate benchmarking and the transfer of best practice across the industry and allow Ofwat and the companies to identify areas where greater efficiencies can be achieved, reducing costs further.	Companies/ Customers	
<b>Economic impacts – costs</b>		
The main cost to companies will be associated with administration and evaluation of the tenders for individual projects, although we anticipate this to be relatively small due to companies' existing experience in tendering projects.	Companies	
Resilience impacts – benefits Resilience impacts – costs Environmental impacts – benefits Environmental impacts – costs	n/a	[No impacts have been identified]

## Economic impacts – benefits

Greater use of direct procurement of large capital schemes should result in reduced costs. Although water companies already carry out competitive tendering, this has tended to focus on the construction phase of a scheme, rather than appointees having the responsibility to raise finance and consider its potential operation once built. Allowing service providers to compete over a broader package should drive greater competition between service providers and deliver more innovative packages and bids, leading to an overall decrease in costs. Evidence from the energy sector, suggests that using the direct procurement process on the first tender round for

offshore transmission resulted in around 14% savings overall<sup>15</sup>. Although the procurement process was run by the regulator rather than the appointee, it does suggest that it could lead to significant efficiency savings.

Although it is likely that only a few schemes in any one price control will meet the £100 million threshold, it should reveal market information on the efficient cost of finance, construction costs and possible operating costs. Although we note that as companies already contract out the delivery of a lot of its investment programmes, the additional information revealed on construction costs is likely to be more modest. This information will allow Ofwat and companies to target further efficiency savings on other areas of the programme, reducing costs further. It should also reveal more innovative solutions, which should either further reduce the costs or increase the quality of the solutions.

## **Economic impacts – costs**

There is likely to be a cost to companies in setting up the tendering framework as well as the administration and evaluation of the tenders for individual projects. Due to the large threshold value of the schemes and the number of schemes that come forward in any one price control, we would expect this to only impact on a handful of companies. We would also anticipate that the cost of this would not be significant, given that companies already have significant experience in procuring third parties in delivering these types of projects. However, further work is required to understand the actual impact of this on companies.

## **Financing costs**

The impact of our proposals on financing costs has been considered by PwC<sup>16</sup>. The introduction of direct procurement should not increase the cost of capital as competition is likely to be limited to new assets and so there would not be a change in risk profile (and asset stranding risk) for existing assets.

As previously noted, we would expect that as more schemes get funded through the direct procurement process, that market information is revealed on the efficient

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<sup>15</sup> Ofgem (2015) Extending competition in electricity transmission: arrangement to introduce onshore tenders.

<sup>16</sup> PwC (2015) Balance of risk: Risk and reward across the water and sewerage value chain.

financing costs. This information will help both companies and Ofwat to areas where financing costs can be reduced.

## **Main assumptions, risks and uncertainties**

The key uncertainty is around the number of schemes that will meet the £100 million threshold and whether they are sufficiently discrete to enable effective procurement. Previous experience from PR14, suggests that only a small number of projects will come forward in a price control that will sufficiently meet the criteria.

## Customer engagement and outcomes

Under our preferred option, we are proposing to implement the following measures relating to customer engagement and outcomes.


- **Incentivise improvements to customer engagement and in-period performance:** build on the PR14 approach of encouraging better quality customer engagement, including by requiring CCGs to report on: the quality of the company's customer engagement throughout the price control period; and how companies have performed during the price control period. We will assess the quality of companies' customer engagement and in-period performance as part of the risk-based review (RBR).
- **Encourage companies to reduce their reliance on stated preference willingness to pay (WTP) techniques:** encourage companies to consider how stated preference WTP approaches could be improved and fully explore the alternative and complementary tools and evidence available.
- **Clearer guidance and more collaboration of CCGs:** issue guidance on the CCGs' remit, and a clear timetable of deliverables, in 2016. We intend to facilitate more collaboration between CCGs by hosting CCG chair workshops.
- **Aspire to provide earlier information on the WACC and RoRE range:** we aspire to provide early information on the WACC and return on regulated equity (RoRE) range for outcomes ahead of business plan submission. We intend for CCGs to have the opportunity to review the implications of our initial cost assessment and any comparative assessments of outcomes we carry out.
- **Incentivising more focus on the long-term:** request that CCGs report specifically on companies' long-term focus at PR19 and use CCG chairs' workshops to share good practice. Encourage or even mandate that certain performance commitments (PCs) and outcome delivery incentives (ODIs) span more than a single regulatory control period.

- **Challenging Ofwat from a customer perspective:** use a flexible arrangement such as a ‘call-off contract’ or virtual group to incorporate customer views into the development and application of our PR19 methodology in addition to challenge from the Water 2020 expert advisory panel, the NEW-PIN project<sup>17</sup>.
- **In-period outcome delivery incentives (ODIs):** propose an industry-wide licence change to allow for in-period ODIs.
- **Early submission of outcomes and PC definitions:** companies submit information on PC definitions, but not targets or ODIs, 6 months ahead of business plans.

## Impacts of the preferred option

The table below sets out our assessment of the **overall net impact** of our proposals relating to customer engagement and outcomes. Following this, a more detailed table contains the specific benefits and costs we have identified, which are described further in the subsequent text.

**Table 10: Customer engagement and outcomes overall net impact summary**







Preferred design option	Key expected impacts	Net impact	Size of impact
Customer engagement and outcomes	<p>Improvements to the quality of companies’ customer engagement should better align business plans and companies’ in-period delivery to customer preferences, driving welfare gains to customers over time.</p> <p>The longer-term focus should result in efficiency, resilience and environmental gains as decision-making is optimised beyond regulatory cycles.</p> <p>Costs are primarily administrative, associated with developing and implementing our proposals. We do not expect these to be material. Guidance on the remit of CCGs and early information on issues such as WACC</p>	Positive	








<sup>17</sup> NEW-PIN is the New Energy and Water Public Interest Network run by Sustainability First. It aims to build a stronger and more coordinated voice among customer, citizen and environmental advocates.


	should reduce administrative costs compared with PR14.		
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The following table contains the specific benefits and costs we have identified with respect to our proposals for customer engagement and outcomes. We subsequently provide written descriptions of these impacts and the rationale or evidence we have relied upon.

**Table 11: Customer engagement and outcomes – benefits and costs**

Impact	Who is primarily affected	Size of impact
<b>Economic impacts – benefits</b>		
Improvements to the quality of companies' customer engagement and more informed, effective and focused challenge from CCGs should lead to customer priorities being better reflected in business plans and companies' day-to-day running of their businesses	Customers CCGs Companies Ofwat	
Greater focus on long-term customer engagement and encouraging long-term PCs and outcomes should increase companies' focus on plans which deliver over a long-time horizon, delivering better value for customers.	Companies Customers	
Our aspiration to provide early guidance on the weighted average cost of capital (WACC) and the return on regulated equity (RoRE) range for outcomes, our intention for CCGs to carry out discussions with their companies following the results of our cost assessment and any comparative assessments of outcomes and our proposal for the early submission of PC definitions should improve the efficiency and productivity of the price review process.	Ofwat Customers CCGs	
We are proposing a more flexible arrangement for customer advice to Ofwat than at PR14. This should mean that our methodology for PR19 better reflects customers' views and that companies' business plans and our final determinations better reflect the outcomes customers want.	Ofwat Customers CCGs Companies	
<b>Economic impacts – costs</b>		
There are likely to be short-run capability-building and familiarisation costs for companies to adopt new and better ways of engaging customers. CCGs could also face short-run familiarisation costs to lead an informed, effective and focused challenge to the companies' new customer engagement techniques.	CCGs Companies	
We are proposing that CCGs engage with companies after we have issued our initial views on cost assessment (and after any comparative assessment of outcomes we might carry out). This additional step in the process will involve costs for companies, CCGs and Ofwat although by	Ofwat CCGs Customers	

Impact	Who is primarily affected	Size of impact
<p>planning this process in advance the costs are likely to be small.</p> <p>We are proposing that CCGs expand their role to look at in-period performance, continuous customer engagement and engagement on long-term issues in more detail. The expansion of the CCGs' role is likely to result in some additional costs, although this is mitigated by CCGs having clarity over their role in advance.</p>		
<p>There might be a small additional financial cost if we use a flexible arrangement such as a 'call-off contract' or virtual group to incorporate customer views into the development and application of our PR19 methodology.</p>	Ofwat	
<b>Resilience impacts – benefits</b>		
<p>CCGs reporting on how effectively companies engaged with their customers on longer-term issues and CCG chairs sharing best practice, facilitated by Ofwat workshops should increase companies' focus on plans which deliver over a long-time horizon and which reflect customers' preferences.</p>	Companies Customers Wider society Ofwat	
<p>Encouraging, or even mandating, that certain measures - for example asset health – span more than a single regulatory control period (that is, five years) should increase companies' focus on plans which deliver over a long-time horizon and which reflect customers' preferences.</p>	Companies Customers Wider society Ofwat	
<b>Resilience impacts – costs</b>		
<p>There may be short-term costs of developing suitable approaches for companies who find it difficult to engage with customers on long-term issues.</p>	Customers Companies	
<b>Environmental impacts – benefits</b>		
<p>Proposing that CCGs report specifically on companies' long-term focus at PR19 and the use of CCG chairs' workshops to share good practice should encourage companies to deliver further environmental improvements in line with statutory requirements and customer priorities.</p>	Wider society Companies Customers	
<p>Encouraging or even mandating that certain measures span more than a single regulatory control period (that is, five years) should encourage companies to deliver further environmental improvements in line with statutory requirements and customer priorities</p>	Wider society Companies Customers	
<p>Requiring CCGs to report on how companies have performed, including on environmental measures, during the price control period should further incentivise the water companies to manage their businesses to protect and enhance the environment.</p>	Wider society Companies Customers	
<b>Environmental impacts – costs</b>		

Impact	Who is primarily affected	Size of impact
There is a risk that increasing the focus on customers acts against the interest of the environment. This is mitigated by our emphasis on companies engaging effectively with their customers on long-term issues in our proposals.	Wider society Customers Companies	

## Economic impacts – benefits

An improvement in the quality of companies’ customer engagement, and more informed, effective and focused challenge from CCGs, should lead to customer priorities being better reflected in business plans and companies’ day-to-day running of their businesses leading to **greater allocative efficiency and services that are better tailored to customers’ needs and requirements.**

A focus on engaging with customers on long-term issues and developing long-term outcomes should enable companies to develop plans to deliver over a longer time horizon. At PR19, we propose to encourage companies to think carefully about how they will deliver high levels of performance and resilient services to this and future generations of customers. A stronger focus on the long-term should enable companies to deliver better outcomes for customers.

We suggest a flexible arrangement such as a ‘call-off contract’ or virtual group so that **customers’ views are incorporated more effectively into the development and application of our methodology.** Our aspiration to provide early guidance on the WACC and the RoRE range for outcomes, our intention for CCGs to carry out discussions with their companies following the results of our cost assessment and any comparative assessments of outcomes and our proposal for the early submission of PC definitions should **improve the efficiency and productivity of the price review process.**

## Economic impacts – costs

There are likely to be short-run capability-building and familiarisation costs for companies to adopt new and better ways of engaging customers. CCGs could also face short-run familiarisation costs to lead an informed, effective and focused challenge to the companies’ new customer engagement techniques.

Providing for CCG engagement with companies after we have issued our initial views on cost assessment and any comparative assessment of outcomes will involve



costs for companies, CCGs and Ofwat although by planning this process in advance the costs are likely to be small. There will be a small resource cost for CCGs and companies by requiring CCGs to expand their role to look at in-period performance, continuous customer engagement and engagement on long-term issues in more detail. However, this is mitigated by CCGs having clarity over their role and being able to plan their challenge process effectively.

There might be a small additional financial cost if we use a flexible arrangement such as a 'call-off contract' or virtual group to incorporate customer views into the development and application of our PR19 methodology.

## **Resilience impacts – benefits**

We are proposing that CCGs report on how effectively companies engaged with their customers on longer-term issues and that CCG chairs share best practice, facilitated by Ofwat workshops. We are also proposing to encourage or even mandate, that certain measures – for example, asset health – span more than a single regulatory control period (that is, five years). These proposals should increase companies' focus on plans which deliver over a long-time horizon and which reflect customers' preferences.

## **Resilience impacts – costs**

There may be short-term costs for companies who find it difficult to engage with customers on long-term issues, such as designing new processes which enable them to engage effectively with customers on such issues.

## **Environmental impacts – benefits**

Our proposals seek to encourage companies to deliver further environmental improvements in line with statutory requirements and customer priorities. We propose to do this by CCGs reporting on how effectively companies engaged with their customers on longer-term issues, CCG chairs sharing best practice, encouraging or even mandating that certain measures span more than a single regulatory control period (that is, five years) and requiring CCGs to report on how companies have performed, including on environmental measures, during the price control period.

## **Environmental impacts – costs**

There is a risk that increasing the focus on customers acts against the interest of the environment. This is mitigated by our emphasis on companies engaging effectively with their customers on long-term issues in our proposals.

## **Main assumptions, risks and uncertainties**

### **Assumptions**

We have assumed that, under the counterfactual, our prevailing approach to customer engagement and outcomes will persist.

### **Risks and uncertainties**

In terms of uncertainties, while the ‘in principle’ benefits associated with our proposals are clear, the extent of these is difficult to determine precisely. While we will seek to address this (where appropriate) in our final impact assessment, this uncertainty will remain a challenge.

The key risk we have identified relates to how we best balance the related benefits and costs associated with allowing companies and CCGs to compare performance and outcomes across companies, versus the benefits of bespoke outcomes in allowing scope for innovation and reflecting customer preferences more precisely.

## Future approach to regulation

Our future approach to regulation looks at the wholesale segments of the sector and **focuses on the impact from indexation**. Our approach also contains many other elements. However, they have not been included in this section, because:


- they facilitate our other objectives, for example, our **proposed form of control supports the efficient implementation of our pro-market reforms** and a more targeted approach to regulation, these are considered under those relevant sections;
- we are continuing to develop our approach (for example our approach to assessing cost efficiency); and
- we are consulting on further options (for example to promote a long-term approach).

For indexation, **we are proposing to use CPI, rather than RPI, for indexing both the RCV and prices**. We also intend to use a transition mechanism, to help manage this change, which will allow a proportion of the RCV to continue to be indexed by RPI which will be reduced over time as existing (RPI-linked) industry debt unwinds.

## Impacts of the preferred option




The table below sets out our assessment of the **overall net impact** of our proposals relating to indexation. Following this, a more detailed table contains the specific benefits and costs we have identified, which are described further in the subsequent text.

**Table 12: Approach to applying regulation overall net impact summary**

Preferred design option	Key expected impacts	Net impact	Size of impact
Approach to applying regulation (indexation)	We consider that a move from RPI to CPI indexation, could provide a better measure of indexation, which is less volatile and more readily understood by customers. We are further explicitly proposing to transition to CPI over time, which should both smooth the short term impact on customer bills and assist companies in implementing the change. We are also proposing to allow companies to use pay as you go levers to smooth the impact of a move to CPI over time.	Positive	

The following table contains the specific benefits and costs we have identified with respect to our proposals for indexation. We subsequently provide written descriptions of these impacts and the rationale or evidence we have relied upon.

**Table 13: Summary of expected impact of preferred option compared to current arrangements**

Impact	Who is primarily affected	Size of impact
<b>Economic impacts – benefits</b>		
A move from RPI to CPI indexation should better reflect water companies' costs (due in part to the formula effect), which should reduce the inflation risk faced by companies in delivering their business plans.	Customers	
The move from RPI to CPI will provide a more robust measure of inflation, increasing customer legitimacy, which is central to providing a predictable regulatory environment over the longer term and so reduce regulatory risk. We consider that by indexing the overall revenue control by CPI and by only indexing part of the existing RCV to CPI, we will provide the customer benefits of CPI indexation as soon as possible.	Customers	
<b>Economic impacts – costs</b>		
There is no evidence that CPI linked debt should be more expensive than RPI linked debt. We consider that our approach to transitioning to CPI should minimise the need for companies to hedge their existing RPI risk.	Companies, customers	
Resilience impacts – benefits Resilience impacts – costs Environmental impacts – benefits Environmental impacts – costs	n/a	[No impacts have been identified]

## Economic impacts – benefits

The move from RPI to CPI (or CPIH) would reduce the volatility of the inflation indexation. Historically the standard deviation of RPI is 1.4% compared to 1.1% for CPI (12-month average 1998 to 2015)<sup>18</sup>. A revenue difference of 0.3% equates to around £30 million per year<sup>19</sup>. **A move from RPI to CPI would therefore reduce the volatility of customer bills**, with customer research undertaken by companies during PR14<sup>20</sup> indicating support for smoother bills. **CPI is now also likely to have greater customer acceptability** as it is becoming the most commonly used measure of inflation, for example it is used by the government to target inflation, and therefore could be viewed as more legitimate by customers.

There are some reasons to believe that CPI (or CPIH) might be a better measure of the inflation in water companies' costs. For example, the calculation of the RPI index is likely to overstate inflation due to the use of the Carli rather the Jevons formula<sup>21</sup>. This accounted for around 0.7 percentage points of the difference between CPI and RPI between 2003 and 2015.

Consequently, the use of CPI could lead to companies pricing lower risk into their business plans, benefitting customers. We intend to carry out further work looking at the relationship between RPI and CPI and water companies' costs.

## Economic impacts – costs

The economic costs associated with our preferred option can be categorised into three groups:

- set up or implementation costs;
- ongoing costs; and
- financing costs.

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<sup>18</sup> Ofwat analysis based on ONS data.

<sup>19</sup> Total industry allowed revenue is around £10 billion per year, and so a 0.3% difference in revenue equates to around £30 million per year.

<sup>20</sup> Final price control determination notice: policy chapter A8 – financeability and affordability.

<sup>21</sup> <http://www.ons.gov.uk/ons/rel/mro/news-release/rpirecommendations/rpinewsrelease.html>

Below, we set out the underlying costs on the industry, namely the companies, and Ofwat.

## Implementation costs

The main potential implementation costs associated with a move from RPI to CPI are if companies still have some exposure to RPI linked debt which could require them to hedge against the risk of differences between RPI and CPI. We consider that our approach to transition should minimise this risk, where RPI indexation will be applied to a proportion of the RCV and CPI indexation to the remainder. Consequently, we consider that companies hedging requirements are small.

## Ongoing costs

**We do not consider that the move from RPI to CPI indexation should impact on customer bills** as we are proposing to give companies the opportunity to use pay as you go (PAYG) tools to smooth the impact on customer bills.

## Financing costs

The market for CPI linked debt is small and developing. We acknowledge that buy-sell spreads on CPI linked debt are likely to be larger than on RPI linked debt as the market is less liquid<sup>22</sup>, the spreads between CPI and RPI linked debt seem to have increased recently, implying that CPI debt could be an efficient form of raising finance. For example, the recent GLA issued the bond at a CPI linked coupon of 0.34 percentage points. Oxera report that this compared to AA rated RPI linked debt of around 1.6 percentage points<sup>23</sup>. This compares to an RPI-CPI wedge of between 0.5 and 1.3 percentage points<sup>24</sup>, with the long-run wedge priced into inflation breakeven of around 0.9 to 1 percentage points.<sup>24</sup> This compares to our PR14 assumption of a wedge of long run wedge of 0.8 percentage points<sup>25</sup>. At PR14, we

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<sup>22</sup> UK final salary schemes: inflation hedging and the change in indexation from RPI to CPI: Redington, 2011.

<sup>23</sup> Index-linked bonds 2.0: introducing CPI linked security, Oxera, July 2015.

<sup>24</sup> <http://www.bankofengland.co.uk/publications/Documents/inflationreport/2014/ir14feb4.pdf>

<sup>25</sup> PWC (2013) Economic Assumptions for PR14 risk analysis.

[http://webarchive.nationalarchives.gov.uk/20150624091829/http://ofwat.gov.uk/pricereview/pr14/rpt\\_com201307pwcassump.pdf](http://webarchive.nationalarchives.gov.uk/20150624091829/http://ofwat.gov.uk/pricereview/pr14/rpt_com201307pwcassump.pdf)

used the Bank of England's CPI target (2.0 percentage points<sup>25</sup>) and assumed CPI wedge (0.8 percentage points<sup>25</sup>) to derive the RPI (2.8 percentage points<sup>26</sup>).

## **Main assumptions, risks and uncertainties**

The above analysis has been based on currently available information. We intend to undertake further work over the coming months to provide more detailed evidence on the impacts of a move between RPI and CPI indexation.

We acknowledge that there is a potential risk when moving from RPI to CPI in that we incorrectly forecast the wedge between RPI and CPI in that we either set customer bills too high (as we set the wedge too high) or that we set companies' allowed revenues too low (as we set the wedge and the real cost of capital too low). We understand the importance for correctly estimating the wedge between RPI and CPI in setting the cost of capital and we intend to engage with stakeholders and undertake further work to better understand this differential and minimise this risk. We note that we are intending to provide water companies with a true-up for the difference between the forecast and outturn wedge between RPI and CPI on the RPI linked part of the cost of capital.

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<sup>26</sup> Ofwat (2014) Setting price controls for 2015 – 20 – risk and reward guidance.  
[http://webarchive.nationalarchives.gov.uk/20150624091829/http://www.ofwat.gov.uk/pricereview/pr14/gud\\_tec20140127riskreward.pdf](http://webarchive.nationalarchives.gov.uk/20150624091829/http://www.ofwat.gov.uk/pricereview/pr14/gud_tec20140127riskreward.pdf)

## Annex 1: Post-implementation development plan (PIDP)

The PIDP sets out our plan for carrying out a review on the policy options. In carrying out the review we will take into account the guidance outlined in the Magenta Book<sup>27</sup> and the BIS Better Regulation Manual. Set out in the table below is further details of our PIDP.

**Table 14: Summary of our post implementation development plan**

Post-implementation development plan	
Basis for the review	<p>The basis for the review is to determine how successful the policy options have been in delivering their objectives.</p> <ul style="list-style-type: none"> <li>• Water resource market mechanisms resulted in further trading of water between incumbents and delivered bilateral trading. In addition we shall look to see whether this has resulted in any additional efficiency compared to what is assumed for the status quo.</li> <li>• The mechanisms in the sludge market have created the right incentives for entrants to enter the market. As well as assessing the size of the market from other WaSCs and entrants we shall look to see whether have much efficiency savings have been achieved.</li> <li>• Outcome incentives have resulted in more targeted outcomes that better reflect customer priorities and incentivise companies to develop plans that deliver long-term benefits. In particular we will look at whether the targets are set at the appropriate level.</li> <li>• Our proposed indexation measure (CPI) tracks the change in water company costs sufficiently, and what impact the move from RPI and CPI has had on company financing costs in relation to inflation linked debt.</li> </ul>
Review Objective	<p>In line with the Better Regulation Manual, we will seek to answer the following questions:</p> <ul style="list-style-type: none"> <li>• Are the policy objectives that led to the introduction of the measure still valid and relevant?</li> <li>• If the objectives are still valid and relevant, is regulation still the best way of achieving those objectives, compared to the possible alternatives?</li> <li>• If regulation is still justified, can the existing measure be improved?</li> </ul>

<sup>27</sup> HM Treasury (2011) The Magenta Book, Guidance for Evaluation.  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/220542/magenta\\_book\\_combined.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220542/magenta_book_combined.pdf)



Review approach	We shall set out our approach to the review in our evaluation methodology document, which we will publish alongside our methodology statement in 2017.
Timings of the review	We shall carry out the review 5 years after the policy has been implemented. <ul style="list-style-type: none"><li>• For the pro-market mechanisms (sludge treatment, transport and disposal and water resources) a review will be carried out in 2027, on the assumption that the market will be fully open by 2022.</li><li>• For customer engagement and outcomes, indexation and form of price control, we shall carry out a review by 2025.</li></ul>
Monitoring information approach	The monitoring information and approach will be set out in our evaluation plan.

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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